



**An-Najah National University**

Faculty of Engineering and Information Technology

Computer Engineering Department

Graduation Project I

**تَفَوُّق**



**Prepared By:**

**Jaber Darawsheh      &      Areen Ateeq**

**Supervisor:**

**Dr.Emad Natsheh**

**Presented in partial fulfillment of the requirement for  
Bachelor degree in Computer Engineering**

10,June,2024

## Acknowledgments

Always and forever, praise be to Allah, Lord of the Worlds, and prayers and peace be upon the most honorable of the prophets and messengers, thanks to God and His success to us, we were able to complete our first graduation project successfully and distinguished. We thank Allah Almighty for the blessings He has bestowed on us. As the product of this distinguished project is nothing but the generosity and grace of God on us. And we ask God Almighty to help us in our scientific and practical life .

We offer special thanks to our dear parents and friends for their support and encouragement to do this beautiful project, and this encouragement and motivation is what supported us and motivated us to patience and continuity in working hard and diligently and feeling the hope of achieving our dreams. Your love is in our hearts.

We also express our deep thanks to our respected supervisor, Dr. Emad Natsheh for his support and valuable guidance during the construction of the project from the first step until the end of our graduation project, where his guidance and constructive criticism played a major role in the success and progress of the project, words are unable to describe and express our gratitude to our respected supervisor. Thank you for your continuous support to us, which has increased our knowledge and knowledge.

We also extend our special and deep thanks to the Department of Computer India and its creative and distinguished doctors who taught us important courses over the past four years with knowledge and extensive knowledge that facilitated our path of research and insistence to solve the scientific problems facing us. Thank you for improving ourselves.

We also offer thanks from the heart, deep thanks to our distinguished and respected friends and colleagues who left our lives and memories sweet and distinctive offspring, which is the same that made our scientific journey at the university more active and beautiful. Your love is in our hearts, our dear friends.

## **Disclaimer**

This report was written by a team consisting of two students at An-Najah National University, Department of Computer Engineering, Jaber Darawsheh and Areen Ateeq, we continue our studies at An-Najah National University. The authors acknowledge full responsibility for any errors identified within. The ideas, suggestions, findings, and opinions expressed in this paper solely belong to the authors and do not reflect the viewpoint of An-Najah National University.

# Contents

1	Abstract.....	13
2	Introduction.....	16
	2.1 Problem.....	16
	2.2 Objective.....	17
	2.3 Scope Of the Work.....	17
	2.4 Importance.....	17
	2.5 Report Organization.....	18
3	Constraints, Standards and Earlier Coursework.....	19
	3.1 Constraints and limitations.....	19
	3.2 Standards.....	19
	3.2.1 MVC (Model View Controller).....	16
	3.2.2 Agile Model.....	20
	3.3 Earlier coursework.....	21
4	Literature review.....	22
5	Methodology.....	23
	5.1 Application FrontEnd Development.....	23
	5.2 Application BackEnd Development.....	24
	5.2.1 Include Modules and Express JS.....	24
	5.3 Send Mail.....	26
	5.4 Client and Server.....	27
	5.5 Application Database Design and Configuration.....	27
6	Website.....	30
	6.1 Admin.....	32
	6.1.1 Administration Login.....	32
	6.1.2 Administration Homepage.....	33
	6.1.3 Notification.....	37
	6.1.4 Teachers details.....	37
	6.1.5 Students details.....	41
	6.1.6 Advertisements.....	42
	6.2 Teacher.....	46
	6.2.1 Teacher Login and Register.....	46
	6.2.2 Teacher Homepage.....	49
	6.2.3 Teacher homework check.....	52

6.2.4	Creating an exam for students.....	55
6.2.5	Creating homework for students.....	60
6.2.6	Upload lectures for students.....	63
6.2.7	Show students.....	66
6.2.8	Notification.....	70
6.3	Student.....	71
6.3.1	Student login.....	71
6.3.2	Student Register.....	72
6.3.3	Student Homepage.....	74
6.3.4	Student Courses and payment process.....	75
6.3.5	Student Calendar.....	82
6.3.6	Student Notes.....	83
6.3.7	Courses in which the student is registered.....	89
6.3.8	Study for a specific course.....	89
6.3.8.1	Lectures.....	90
6.3.8.2	Homeworks.....	91
6.3.8.3	Exams.....	95
6.3.8.4	Displaying the students participating in the same course and the possibility of communicating with them.....	101
6.3.8.5	Edit details.....	109
6.3.8.6	Extra details.....	111
6.4	User (Student) Mobile Application.....	113
6.4.1	Start Page.....	113
6.4.2	Login Page.....	114
6.4.3	SignUp Page.....	116
6.4.4	Forget Password.....	120
6.4.5	Student Home Page.....	126
6.4.6	Register Courses.....	129
6.4.7	Payment Via Visa Card.....	131
6.4.8	Compiles (Generate) Bills Sheets.....	133
6.4.9	Time Table.....	134
6.4.10	Quizzes System.....	135
6.4.11	Assignments (Exercises, Tasks) System.....	139
6.4.12	To-Do List Feature.....	143

6.4.13	Students Profile Page.....	146
6.4.14	Notes System.....	147
6.4.15	Daily Grades.....	149
6.4.16	Drawing Board (For Training) feature.....	150
6.4.17	Edit Profile Information.....	152
6.4.18	Recorded Lessons feature.....	154
6.4.19	Students Summaries Courses Feature.....	155
6.4.20	University Specializations Feature.....	157
6.4.21	Chat System.....	160
6.4.22	Real-Time Notification.....	161
6.5	User (Parents) Mobile Application.....	162
6.5.1	Home Page.....	162
6.5.2	Track The Child Grades.....	164
6.5.3	Track The Child Time Table.....	166
6.5.4	Track The Child (Tasks) Feedback to Parents.....	167
6.5.5	Chat System.....	168
6.5.6	Real-Time Notification.....	169
6.5.7	Registering Their Children.....	170
6.5.8	Edit Profile Information.....	172
7	Result and Discussions.....	173
8	Conclusion and Recommendations.....	174
8.1	Conclusion.....	174
8.2	Future work.....	174
9	References.....	175

## List of Figures

3.1 MVC Structure.....	20
3.2 Agile Model Technology .....	21
5.1 : Front-end Development.....	23
5.2.1 : back-end development.....	24
5.2.1 Express js server side.....	25
5.2.1 Middleware server.....	25
5.3 send email.....	26
5.4 : store api date.....	27
5.5 : MongoDB Connection.....	28
6 main homepage .....	30
6 main homepage – about us.....	30
6 main homepage – courses .....	31
6 main homepage – courses and advertisement.....	31
6 main homepage – advertisement .....	32
6.1.1 login administration page.....	32
6.1.2 : administration homepage 1.....	33
6.1.2: administration homepage 2.....	34
6.1.2: The possibility of displaying the chart in various ways 1.....	34
6.1.2: The possibility of displaying the chart in various ways 2.....	34
6.1.2: teacher status .....	35
6.1.2: details for a teacher in table (1).....	35
6.1.2: details for a teacher in table (2).....	36
6.1.2: details for a teacher in table (status: accepted).....	36
6.1.2: details for a teacher in table (status: rejected) .....	36
6.1.3: Admin notification.....	37
6.1.4: Chart for teachers.....	38
6.1.4: Filtration table for teachers .....	38
6.1.4: Filtration table for teachers - search name .....	38
6.1.4: Filtration table for teachers – search range revenue (1).....	39
6.1.4: Filtration table for teachers – search range revenue (2).....	39
6.1.4: Filtration table for teachers – search range revenue (3).....	40
6.1.4: Filtration table for teachers – search range revenue (4).....	40
6.1.4: Filtration table for teachers – search range revenue and students.....	40
6.1.5: Chart for teachers.....	41
6.1.5: Filtration table for students .....	41
6.1.5: Filtration table for students (gender and branch).....	42
6.1.6: advertisements table .....	42
6.1.6: edit an advertisement.....	43
6.1.6: details of edit an advertisement (1) .....	43
6.1.6: details of edit an advertisement (2) .....	43
6.1.6: details of edit an advertisement (3) .....	44
6.1.6: ability to delete advertisement.....	44
6.1.6: Add advertisement (1) .....	44
6.1.6: Add advertisement (2) .....	45
6.1.6: Add advertisement (3) .....	45
6.2.1: Teacher login page .....	46
6.2.1: advertisements.....	47

6.2.1: Teacher register page (1) .....	47
6.2.1: Teacher register page (2) .....	48
6.2.1: Email to accepted teacher .....	48
6.2.1: Teacher set password.....	49
6.2.1: Email to a rejected teacher.....	49
6.2.2: Teacher homepage (1) .....	50
6.2.2: Teacher homepage(2) .....	50
6.2.2: Teacher homepage (3) .....	51
6.2.2: Teacher homepage (4) .....	51
6.2.2: number of homework 4 and the last homework the teacher not reply to it so the hover red in homepage table. .....	52
6.2.3: Teacher homework check (general view).....	53
6.2.3: Teacher homework check (An assignment submitted by the student and reviewed -1) .....	53
6.2.3: Teacher homework check (An assignment submitted by the student and reviewed -2) .....	53
6.2.3: Example of a student turned in an assignment, but it was not reviewed by the teacher (red card).....	54
6.2.3: Example of a student turned in an assignment, but it was not reviewed by the teacher – details.....	54
6.2.3: Example of a student turned in an assignment, and the teacher will send reply.....	54
6.2.3: after teacher send reply.....	55
6.2.3: The card turned green.....	55
6.2.4: Exam homepage.....	56
6.2.4: Write the exam details (1).....	56
6.2.4: Write the exam details (2).....	57
6.2.4: Write the first question and its options (1).....	57
6.2.4: Write the first three options.....	58
6.2.4: Write the fourth option.....	58
6.2.4: Choose correct option.....	58
6.2.4: Moving on to the second question.....	59
6.2.4: Second question (1) .....	59
6.2.4: Second question (2) .....	59
6.2.4: Second question (3) .....	60
6.2.4: wait for send exam.....	60
6.2.4: Send exam successful.....	60
6.2.5: send homework page (1) .....	61
6.2.5: send homework page (2) .....	61
6.2.5: homework example (1) .....	62
6.2.5: homework example (2) .....	62
6.2.5: Send homework successfully.....	63
6.2.6: send lecture page (1) .....	63
6.2.6: send lecture page (2) .....	64
6.2.6: send lecture example.....	64
6.2.6: send lecture example with pdf files. ....	65
6.2.6: wait for upload lecture.....	65
6.2.6: Uploaded lecture successfully.....	65
6.2.7: Chart of students enrolled during the year (1) .....	66
6.2.7: Chart of students enrolled during the year (2) .....	66
6.2.7: Possibility of downloading the chart in different ways.....	67
6.2.7: download as excel sheet.....	67
6.2.7: download as image.....	68
6.2.7: table of students registered with the teacher.....	68
6.2.7: search depend on gender (example).....	69
6.2.7: search depend on gender and school name (example) .....	69
6.2.7: search on data does not exist.....	69
6.2.8: Teacher notification.....	70
6.3.1: Student login.....	71
6.3.1: Password validation.....	71
6.3.2: Student register page (1) .....	72
6.3.2: Student register page (2) .....	72
6.2.1: Student register page (3) .....	73
6.3.2: verify email. ....	73
6.3.2: The institute sends a code to the email.....	73

6.3.2: student put code in place.....	74
6.3.2: The email verification process is correct and student login using id number and password.....	74
6.3.3: Student Homepage.....	74
6.3.4: Courses exist in student branch.....	75
6.3.4: Search on name of course.....	75
6.3.4: Search on name of teacher.....	76
6.3.4: Add course to cart.....	76
6.3.4: reset it using button reset card.....	77
6.3.4: Add two courses to cart.....	77
6.3.4: Cart details.....	78
6.3.4: delete one using delete icon (1).....	78
6.3.4: delete one using delete icon (2).....	78
6.3.4: after deleting course.....	79
6.3.4: Payment page.....	79
6.3.4: Payment page (after pay).....	80
6.3.4: The page to which the student is transferred when completing the payment process.....	80
6.3.4: Student notification.....	81
6.3.4: card will empty after payment process.....	81
6.3.4: change status of course card after payment.....	82
6.3.5: calendar after student join course (1).....	82
6.3.5: calendar after student join course (2 - details).....	83
6.3.5: calendar after student join course (3 - details).....	83
6.3.6: Notes page.....	84
6.3.6: add Note.....	84
6.3.6: after add note.....	85
6.3.6: edit note.....	85
6.3.6: after edit note.....	86
6.3.6: add second note.....	86
6.3.6: After adding second note.....	87
6.3.6: search by note name.....	87
6.3.6: search by notes period.....	88
6.3.6: delete a note (1).....	88
6.3.6: delete a note (2).....	88
6.3.7: Courses in which the student is registered.....	89
6.3.8: Course Homepage.....	89
6.3.8.1: Show the first lecture.....	90
6.3.8.1: View video lecture and attached files (1).....	90
6.3.8.1: View video lecture and attached files (2).....	91
6.3.8.1: After teacher adds new lecture.....	91
6.3.8.2: The first case the task did not start (1).....	92
6.3.8.2: The first case the task did not start (2).....	92
6.3.8.2: The second case is that the student can upload his file as the allowed time has not expired (1).....	93
6.3.8.2: The second case is that the student can upload his file as the allowed time has not expired (2).....	93
6.3.8.2: Note to the student that the file has been uploaded.....	94
6.3.8.2: The last case is that the student did not submit the assignment within the permitted period.....	94
6.3.8.2: Teacher adds new homework, and it appears at top of list.....	95
6.3.8.3: There is an exam available, and the student can start with it.....	96
6.3.8.3: The student started the exam, and this is the first question.....	96
6.3.8.3: Options for the first question.....	97
6.3.8.3: The second question and its options (1).....	97
6.3.8.3: The second question and its options (2).....	98
6.3.8.3: The exam is over, and this is a summary of the student's performance and grade (1).....	98
6.3.8.3: The exam is over, and this is a summary of the student's performance and grade (2).....	99
6.3.8.3: The exam is over, and this is a summary of the student's performance and grade (3).....	99
6.3.8.3: Trying to take the exam again (prohibited).....	100
6.3.8.3: After the exam time ends.....	100
6.3.8.3: In case of student's absence.....	100
6.3.8.3: In case of the student got a zero.....	101
6.3.8.3: example of exam grades table.....	101
6.3.8.4: View course instructor and colleagues.....	102

6.3.8.4: View a student's profile and the ability to talk to him directly.....	102
6.3.8.4: chat with yazan.....	103
6.3.8.4: chat with yazan send text message them image. ....	103
6.3.8.4: Wait for the image to upload.....	104
6.3.8.4: The image has been uploaded.....	104
6.3.8.4: send message.....	104
6.3.8.4: The video has been uploaded.....	105
6.3.8.4: write message to send with video.....	105
6.3.8.4: Send message successfully.....	106
6.3.8.4: Possibility to change personal photo.....	106
6.3.8.4: after changing it (1) .....	107
6.3.8.4: after changing it (2) .....	107
6.3.8.4: search for all students on the site.....	108
6.3.8.4: search by student name. ....	108
6.3.8.4: search by email.....	108
6.3.8.4: Clicked on the name which student searched for to start a chat.....	109
6.3.8.4: send message to Raya.....	109
6.3.8.5: edit profile information (1) .....	110
6.3.8.5: edit profile information (2) .....	110
6.3.8.5: change school name.....	110
6.3.8.5: school name changed.....	111
6.3.8.6: If the teacher does not submit a lecture. ....	111
6.3.8.6: If the teacher does not submit an exam.....	112
6.3.8.6: If the teacher does not submit an assignment.....	112
6.4.1: Mobile app home page.....	113
6.4.2: Login Page.....	114
6.4.2: User type.....	114
6.4.2 : Login Page with empty user Id and password.....	115
6.4.3 : Student sign up page.....	116
6.4.3 : Parent sign up page.....	116
6.4.3: Choose upload photo way.....	117
6.4.3 : upload photo via mobile camera.....	117
6.4.3 : uploaded photo selects.....	118
6.4.3 : choose photo to upload.....	118
6.4.3 : Student sign up information account.....	119
6.4.4 : Forget password.....	120
6.4.4 : Send user Email.....	120
6.4.4 : Sending Emil in progress.....	121
6.4.4 : Received user email.....	121
6.4.4 : Verification page.....	122
6.4.4 : Time out code.....	122
6.4.4 : Enter correct code.....	123
6.4.4 : Update password page.....	123
6.4.4 : Mismatch password.....	124
6.4.4 : matched password.....	124
6.4.4 : password updated success.....	125
6.4.5 : Scientific branch home page.....	126
6.4.5 : Scientific branch home page.....	126
6.4.5 : Literary branch home page.....	127
6.4.5 : Commercial branch home page.....	128
6.4.6: Proposed center Courses.....	129
6.4.6 : Courses Slider.....	129
6.4.6 : Proposed center Courses.....	130
6.4.7: Payment Page.....	131
6.4.7 : Selecting the card expire data.....	131
6.4.7 : Fill the need via card information.....	132
6.4.7 : Enter the CVV of card.....	131
6.4.8: Payment Success.....	133
6.4.8 : Bill design.....	133
6.4.9 : Time Table.....	134

6.4.10 : app SideBar.....	135
6.4.10: Quizzes Table.....	135
6.4.10 : Quiz Questions.....	136
6.4.10 : Quiz Questions.....	136
6.4.10 : Quiz Questions.....	137
6.4.10 : Good Quiz Result.....	138
6.4.10 : Bad Quiz Result.....	138
6.4.11 : Tasks Page.....	139
6.4.11 : Task time validation.....	140
6.4.11 : Available task.....	140
6.4.11 : Selecting the solution file.....	141
6.4.11 : Success upload task solution.....	141
6.4.11 : Start uploading rate.....	142
6.4.12 : To-do list page.....	143
6.4.12 : Selecting past date for task.....	143
6.4.12 Selecting the to-do list date.....	144
6.4.12 : Selecting to-do list time in hours.....	144
6.4.12:selecting the to-do list time in minute.....	145
6.4.11 : adding the to-do list success.....	145
6.4.12 : Student Profile.....	146
6.4.13 : Notes Page.....	147
6.4.14 : Select note theme.....	147
6.4.14 :Note page.....	148
6.4.14 : Note with equation.....	148
6.4.15 : Daily Grads Page.....	149
6.4.16 : Drawing board page.....	150
6.4.16 : Ready Drawn.....	150
6.4.16 : Save student Drawing page.....	151
6.4.16 : Emphasized Save daring page.....	151
6.4.17 : Update Profile information.....	152
6.4.17 : Selecting user photo to update.....	152
6.4.17 : Styling the select photo to update.....	153
6.4.17 : Updating profile In progress.....	153
6.4.18: Recorded Lessons Page.....	154
6.4.18 : Videos Links Page.....	154
6.4.19 :Course summary page.....	155
6.4.19 :Course summary page.....	155
6.4.19 : Access not available summary.....	156
6.4.19: Access available summary.....	156
6.4.20 :Faculties of An-Najah University.....	157
6.4.20 : An-Najah University specializations.....	157
6.4.20 :Birzeit University Faculties.....	158
6.4.20: Birzeit University specializations.....	158
6.4.20 : American University College.....	159
6.4.20 :American University specializations.....	159
6.4.21: Chat Conversation.....	160
6.4.21: Chat Conversation.....	160
6.4.21: Chat Conversation.....	160
6.4.22 : DoList notification.....	161
6.4.22 : Lesson remainder notification.....	161
6.5.1 : New Parent home page.....	162
6.5.1 : New Parent Home Page.....	162
6.5.1 : Parent Home Page.....	163
6.5.1 : Parent Home Page.....	163
6.5.1 : Parent Home Page.....	163
6.5.2 : Parent Track Grades Page.....	164
6.5.2 : Parent Track Grades Page.....	164
6.5.2 : Parent Analyze Grads.....	165
6.5.3 : Parent Track Time Table.....	166

6.5.4 : Parents Feedback.....	167
6.5.4 : Parents Feedback.....	167
6.5.5 :Parents Chat Page.....	168
6.5.5 : Parent Chat Conversation.....	168
6.5.6 : Parent Notification.....	169
6.5.7 : Add Student.....	170
6.5.7 : Add Student.....	170
6.5.7 : Add Student.....	171
6.5.7 : Add Student.....	171
6.5.8 : Update parent Information.....	172
6.5.8 : Update parent Information.....	172

# Chapter 1

## Abstract

In this project, we developed an application to assist high school students who require private lessons in various subjects related to different branches of high school education: the scientific branch, the literary branch, and the commercial branch. The application facilitates the registration of subjects at the institute and provides an invoice or receipt to confirm their registration. It also offers easy access to important scientific summaries needed by students and simplifies the organization of study schedules and tasks assigned by teachers.

The system is user-friendly, allowing students to submit their test answers and receive feedback from their subject teachers. Additionally, we implemented a calendar to remind students of important dates and deadlines. Moreover, a chat system was built to enable students to share their opinions and ideas with their peers enrolled in the institute, fostering a collaborative and interactive learning environment.

The website is dedicated to three users of the application: the director, the teacher, and the student. It provides the director with complete information about all registered students and teachers, adding recruitment advertisements, and then accepting and rejecting these teachers. The teacher can set a test and assignment and upload class classes, in addition to theoretical attachments, to enhance the educational process. As for the student, he is the recipient of all that.

Our mobile application also facilitates parents in monitoring the progress or delays in their children's academic performance. It allows easy tracking of the registered class schedules and students' grades. Parents receive weekly feedback from the institute's teachers regarding their children's exercises and assignments. Additionally, a chat system was established for parents, enabling them to share and discuss their children's performance.

The Application include this features that considered as the most important feature:

- 1- **Application User Registration:** The application allows users to create new accounts by entering some basic data related to the user in a way that suits the nature of the application.
- 2- **User Register Courses:** The application allows students in various scientific, literary and commercial branches to register for courses according to their specialization.
- 3- **Quizzes System:** The application provides multiple choice questions for students enrolled in the institute according to their specialization uploaded by teachers.

- 4- **Assignments (Exercises, Tasks) System:** The application allows teachers to upload different tasks for students and allows students to upload their own solutions related to the raised task.
- 5- **Chat System:** The application provides chat systems for students and parents, enabling parents to communicate with each other and enabling students to communicate with each other. Chat between student improved to send image or video to enhance learning process
- 6- **Real-Time Notification System:** The application provides real-time notifications to students, including reminders of their lesson schedules, reminders of assignment submission dates, as well as if the teacher sets them an exam or gives them a lecture. It also provides notifications to both the teacher and the admin, as the teacher receives notification that the student for example, Ahmed registered with him, and the director receives notifications regarding the student and teacher when they register at the center.
- 7- **Payments Bills:** The mobile application automatically generates a receipt or bill with the student's registration information for a specific course.
- 8- **Students To-Do List:** The mobile application enables students to organize their lessons and exams and remind them of a notification of the delivery time.
- 9- **Students Managements:** Enable the admin to manage the information of students and teachers.
- 10- **Data Virtualization:** The website says to make analyses and drawings of students, parents and teachers' data.
- 11- **Students Training Tools:** The mobile application provides training tools for students, such as a drawing board that enables students to draw and practice with courses that require drawing curves, for example.
- 12- **Post Courses:** Enabling admin to add additional and new courses for the students at the Institute.
- 13- **Repair and proofreading of answers: Teachers** correct the solutions of the tasks raised to students and upload them as feedback to students.
- 14- **Auto Correct the Students Exam Answers:** The application automatically corrects and reviews the student's answers during the exam and raises the final mark automatically.
- 15- **Track a lesson schedule and Daily Grades: Enable** parents to view and follow up the schedule and daily grads of student courses registered at the institute
- 16- **Guidelines on the majors of the university:** The mobile application provides the three most important universities of An-Najah National

University, Birzeit University and Arab American University, where it provides various faculties of the university, which makes it easier for the high school student to know the acceptance rate and the price of the specialization hour.

17- **Weekly feedback** :The application enables parents to obtain feedback on a weekly basis about the signs of the tasks presented by the student and express them in a graphical curve, which makes it easier for parents to analyze whether the student is in a state of criticism or not.

18- **Scientific summaries of the courses**: The application provides scientific summaries of the courses in various courses of the branches of the scientific, literary and commercial.

19- **Powerful search system**: The teacher can search the data of his students, as well as the director, the data of teachers and students registered at the institute, which facilitates access to them

High school, particularly during the Tawjihi stage, holds significant weight in a student's educational journey. It's a pivotal period where their academic fate is shaped, and the challenges they face are formidable. Students must maintain constant organization and diligence to navigate through the demanding curriculum.

Recognizing the hurdles students encounter, especially in accessing supplementary educational support, we've observed many seeking clarifications at educational centers. However, we understand the difficulties posed by transportation, especially in our Palestinian society, where moving between cities and villages can be challenging.

To address these issues, we're developing an application aimed at streamlining the learning process for high school students. By leveraging technology, we aim to provide comprehensive courses and educational materials while also tracking students' progress. The application caters to students, teachers, and parents, facilitating communication and organization among them.

For students, the app simplifies scheduling, exam dates, and homework assignments, allowing them to focus on their studies without the burden of transportation. Teachers benefit from improved time management and communication, while parents can monitor their children's progress within the educational center.

Our application will be developed using React.js for the website and React Native for mobile platforms, ensuring accessibility across devices.

## Chapter 2

### Introduction

#### 2.1 Problem

The high school stage is one of the most important academic stages in the student's life, as it is not like any year studied by the student during the past years. It is the stage that determines the academic path of the student and his future, from choosing the next university specialization after high school, which will be an integral part of the student's practical and scientific life after graduation. The current problem is that high school students need an application that makes it easier for them to register for private courses at the institute and facilitate access to educational resources that enable students to pass and follow their courses.

Also, students in general and high school students, in particular, face many difficulties and challenges that may have a significant impact on their scientific and academic achievement, and the most important of these challenges, which currently cross one of the most difficult and biggest problems facing students are transportation problems, where the student finds great difficulty in daily transportation from home to the institute, and also one of these challenges is the problem of the occupation barrier, which constitutes a major obstacle, which causes students not to reach the educational institute and all the mentioned current problems that our Palestinian people are living and It is good mentioning the challenge that a few years ago was a challenge and a great burden for students is the COVID-19 virus. Which negatively affects their time and effort.

Therefore, we have created a comprehensive application for all the needs of the high school student from courses, summaries and recorded courses, organizing the dates of studying courses and tasks, submitting exams electronically smoothly and easily, and obtaining feedback related to the exam that was presented. He stressed that it helps in overcoming these difficulties and obtaining an e-learning environment that contributes to achieving the best results for students.

## **2.2 Objective**

Our main goal of this project is to help high school students achieve an electronic scientific environment that facilitates the process of organizing the study of students considering the difficulties and challenges faced by students.

## **2.3 Scope Of the Work**

Our application generally focuses on high school students' stage and what is related to them, we give the user the opportunity to organize a course to pass and benefit from the services provided by the application to its users.

## **2.4 Importance**

Within the application of Tafooq Institute, our effort involves four primary parties: students, parents, teachers, and admin. These members collaborate in a cooperative structure to ensure the platform runs well.

For student users, the importance of the project lies in providing scientific and educational courses, scientific tasks and electronic exams determined by the course teachers, which help the teacher to collect and know the scientific level of his students, provide tools for training and help students to provide a suitable environment for drawing curves and shapes that are required in some courses such as mathematics, physics and chemistry, and enable students to store their personal notes on some lessons and courses by providing a place for student notes. Finally, guiding students regarding the universities and specializations coming to high school students in the next stage.

For parents users, the importance of the project lies in helping them monitor their children's academic progress, track their class schedules, and view their daily grades. Through a feature available in the application, parents can analyze and evaluate their child's performance based on their grades. Additionally, they can receive weekly feedback on their child's assignments and their respective grades.

For teachers, the importance of the project lies in organizing exams and tests and submitting them to students registered in the institute. Also provide many lectures with several attachments.

The administrator of the institute has control over the system, whether adding modifications, adding and deleting job advertisements, or the recruitment of teachers and their admission or rejection to the institute. The site automatically generates an excel sheet and gives the option to download charts from the

admin homepage as images, which makes it easier for the manager to create some operations on the existing data.

## **2.5 Report Organization**

The structure of this report is as follows: Chapter 1 provides an overview of our project, while Chapter 2 provides an introduction and a summary of its significance and extent. Chapters 3 and 4 discuss the challenges and limitations we encountered while working on this project, while Chapter 5 details the approach we took to finish it. Chapter 6 represent System features and implementation . Chapter 7 presents the findings and a debate, while Chapter 8 concludes with a suggestion.

## Chapter 3

# Constraints, Standards and Earlier coursework

### 3.1 Constraints and limitations

#### 1- Time Constraint :

Some of the programming languages we worked with were unfamiliar to us before. Since this was the first time we had developed a whole mobile and website application, we had to learn new programming languages including React js for the website, React Native for mobile frameworks, and Node.js for the backend. We also learn MongoDB for database managements as well. Because the stage of learning and working in the project together was a difficult stage because we were working and learning under pressure due to the presence of other obligations from studying courses other than this project, and the system of the second semester into two periods made it more difficult, which increased the pressure of learning and studying, so we doubled the working time to be able to complete this project on time.

#### 2- Internet connection:

Almost all applications need an online internet connection to connect the frameworks Node Js server to enable the APIs request to work in correct way.

### 3.2 Standards

#### 3.2.1 MVC (Model View Controller)

In our Application, the Model-View-Controller (MVC) pattern was used to display the data. And To make our application work perfectly.

- **Model:** It represents the management of the MongoDB database we use. It will respond to both display and control requests to continue updating itself.
- **View:** This is the graphical user interface (GUI) that students , parents , teachers and manager will use to display and modify data.

- **Controller:** This is the website's and the application's Node.js back-end server. The controller facilitates coordination and collaboration between the view and the model.

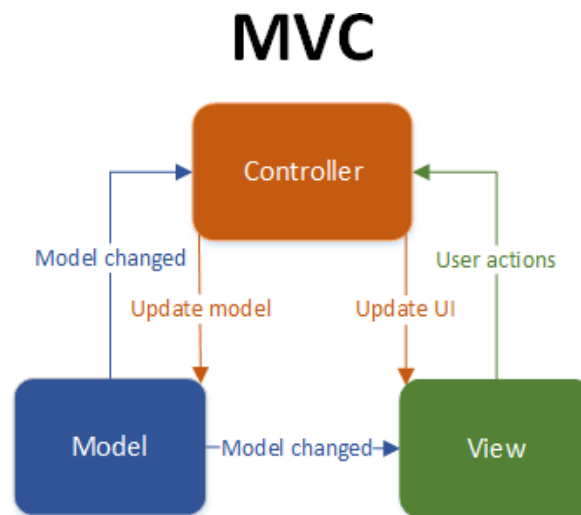


Figure 3.1 : MVC Structure

### 3.2.2 Agile Model

The term "agile process model" describes an iterative approach to software development. Agile techniques divide work into manageable chunks, or portions that don't directly require long-term planning.

The Agile Model include these main phases:

- ❖ **Compilation of requirements :** In this phase, you must define the requirements. You should explain business opportunities and plan the time and effort needed to build the project. Based on this information, you can evaluate technical and economic feasibility.
- ❖ **Requirements design :** Once the project is identified, work with stakeholders to determine requirements. A UML

diagram or user interface diagram can be used to show how new features will work and fit into your existing system.

- ❖ Testing/ Quality assurance: team looks for the bug when analyzing the product's functionality.
- ❖ Deployment :A product is released by the team for the user's workplace.

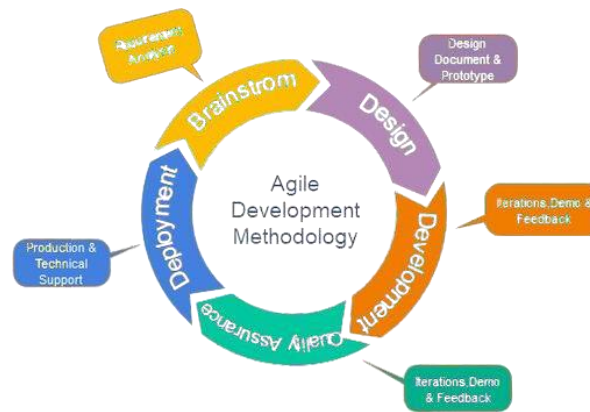


Figure 3.2 : Agile Model Technology

### 3.3 Earlier coursework

Through our study journey in computer engineering, we tried as much as possible to benefit from specialization courses and external courses that helped us greatly in understanding how to build applications and websites, from these courses React JS course to build front-end websites and React Native courses that enabled us to build and design Front-end of the Mobile application. We also learned from the external courses of the back-end the Node JS language, which introduced us to how to write the APIs and how it connects to the server, We also took online courses to manage data base MongoDB. All this in order to meet all the construction and design needs of the project.

## Chapter 4

### Literature review

Students can now have access to an interesting, flexible, and customized learning environment because of e-learning, which is making waves in the education department. extend much farther With the use of e-learning resources, high school students can improve their overall learning outcomes and more skillfully negotiate the challenges of their academic path.

High school students can benefit greatly from e-learning, which creates a more stimulating and productive learning environment. Its flexibility, which enables students to access course materials and finish tasks at their own speed from any location with an internet connection, is one of its main advantages. Students are empowered to take charge of their education thanks to this flexibility, which accommodates a variety of learning styles and timetables (Simonson et al., 2019; Pichler et al., 2018).

Additionally, by customizing instruction and content to meet the requirements and preferences of each individual student, e-learning supports personalized learning experiences. While individualized feedback mechanisms can help students identify areas for growth and improve their comprehension, adaptive learning platforms can analyze student knowledge gaps and provide targeted training (Baker et al., 2014; Wang et al., 2017). (Black & Jerej, 2018; Purcell et al., 2018).

Even though e-learning has many advantages, there are some issues with its use in high schools that must be resolved. Ensuring that all students have equitable access to technology and dependable internet connectivity is a major concern. This digital divide has the potential to widen the already existing educational gaps and reduce the impact of e-learning programs (Warschauer & Healey, 2009; van Dijk & Hacker, 2009).

Finally, ongoing assessment and evaluation are critical to guaranteeing the efficacy of online learning initiatives. Frequent data gathering and analysis can help to show how e-learning affects student learning outcomes, pinpoint areas that need more help, and guide program adjustments (Clark & Kozma, 2018; Linn & Mislevy, 2009).

# Chapter 5

## Methodology

We have basic options for application design development, but after deep learning online tutorials related to the application development, in addition to the basic and important parts of building mobile applications and websites, such as frameworks, programming languages like **React Js** for website development and **React Native** for the Mobile development these tools for front-end structure, **Node JS** and **Express JS** for the back-end structure that work based on the **JavaScript** language, and database managements tools like **MongoDB**. We will discuss and address each of these specifics in further depth. So we design this project as the following pattern:

### 5.1 Application FrontEnd Development

After deciding on the language to use for the user interface design, we need to have an idea of how these pages should be designed. To that end, we start carefully consider the colors of the pages that are calming to the eyes and aim to evoke positive feelings in the user of the program and engaging the peoples to use our application. Finally, we select an implementation design that is well-executed and, most importantly, user-friendly.

React JS, commonly referred to as React, is a well-liked JavaScript user interface library. One other name for it is a front-end JavaScript library. It is frequently used to create dynamic and interactive web apps, and it was developed by Facebook. We'll examine the main ideas of React in this essay.

React Native: It is a open source framework ,cross-Platform Development and virtual DOM created by Facebook company for design applications for ios and android mobile device under one common language, JavaScript language . Initially, Facebook only developed React Native to support iOS. However, with its recent support of the Android application.



Figure 5.1 : Front-end Development

## 5.2 Application BackEnd Development

To design the application back-end, we used the open-source Node.JS framework for the website and mobile application.

### 2.1.5 Include Modules and Express JS

**Node JS** , is an open-source JavaScript runtime environment that enables programmers to run JavaScript code on servers ,and It enables programmers to create scalable, fast, and event-driven applications, non-blocking I/O. Event-driven programming is used, and the V8 JavaScript runtime engine powers it.

The most important features of application development provided by Node JS :

1. Easy : Node js is quite easy to write the corresponding server code.
2. Scalable : Node js provides vast scalability for applications features.
3. Speed : Node js is even faster and more efficient due to on-bloacking Thread execution.
4. Strong back-end : Node.js is written in C and C++ languages, which makes it speedy.

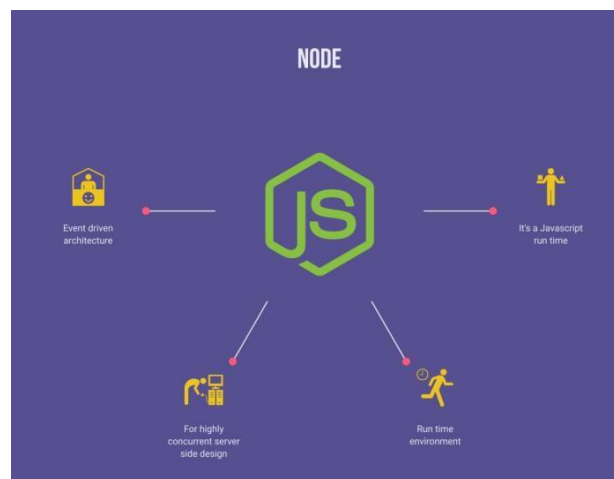


Figure 5.2 .1: back-end development

## Express JS

Express.js is a fast, flexible web framework for Node.js language. It's effectively a tool that simplifies building mobile and website applications and APIs request using JavaScript on the server side. Express is an open-source that is developed and maintained by the Node.js foundation.

A comprehensive feature set provided by Express.js helps you work more efficiently and optimize your online application. Using middleware and routing simplifies the process of organizing the functionality of your application. It makes rendering dynamic HTTP objects easier and adds useful tools to Node HTTP objects. It is developed and maintained as an open-source by the Node.js foundation.

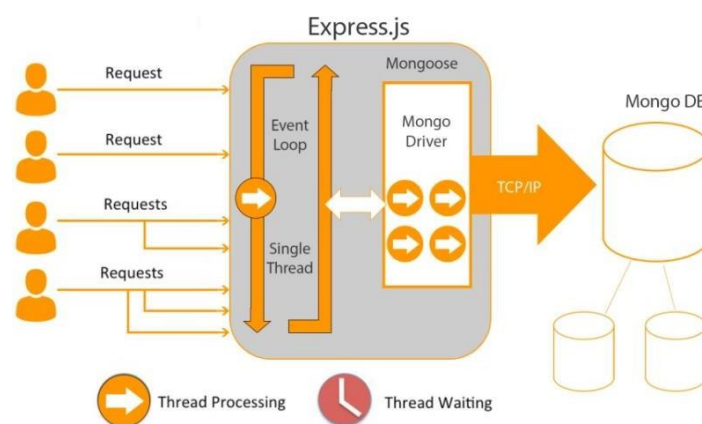


Figure 5.2 : Express js server side

## Express JS middleware

Middleware is software that enables one or more types of communication or connectivity between applications or components in a distributed network. With clever features that enable connections between platforms that were not intended to be connected, middleware simplifies application development and accelerates time to market.

It is mainly used to process requests that are sent by the user through the front end, modify them or add some commands to them, then send them to the back end, and then the back end does some processing on them and re-sends them as a response to the request that was sent.

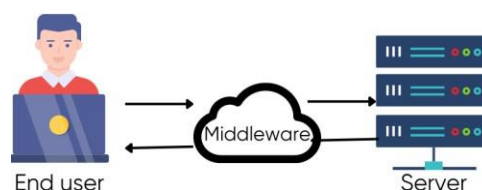


Figure 5.2 : Middleware server

## 5.3 Send Mail

Sending an emails using Nodemailer .library , placed on the Node Js package A module called Nodemailer makes sending emails from Node.js applications as simple as pie. Since there was no sensible way to send email messages when the project was founded in 2010, it has become the default solution for the majority of Node.js users.

```
import nodemailer from 'nodemailer'; 207.3k (gzipped: 56.4k)
import dotenv from "dotenv"; 6.8k (gzipped: 3k)
import multer from 'multer'; 228.3k (gzipped: 43.8k)
```

Figure 5.3 : send email

```
export const sendMail = async (req, res) => {
  try {
    const { to, subject, text } = req.body;
    let transporter = nodemailer.createTransport({
      host: "smtp.gmail.com", // SMTP server address
      port: 465,
      secure: true,
      auth: {
        user: "jaberdarawsheh@gmail.com",
        pass: "qqqgtutvqbqhtxde",
      },
    });
  });
```

Figure 5.3 : send email

```
let info = await transporter.sendMail({
  from: 'jaberdarawsheh@gmail.com',
  to,
  subject,
  text,
});

console.log('Email sent success:', info.messageId);
res.status(200).json({ message: 'Email sent successfully' });
} catch (error) {
  console.error('Error sending email:', error);
  res.status(500).json({ message: 'Error sending email' });
}
});

router.post('/sendEmail', Controller.sendMail);
```

Figure 5.3 :send Email

## 5.4 Client and Server

To designing our application back-end we also focused on these stages:

- **Client:** The user views a graphical user interface (GUI), through which they can send series of requests (APIs) to the back-end for processing and execution, which generates results that are then displayed to the user on the GUI.
- **Server:** On the back-and side, the user's requests are received, then processed as required, and finally sent as a response to the GUI.

This is a small overview of storing the user request in the backend and then the backend make some process on it according to the purpose of the request.

```
export const updateStudent = async (req, res) => {
  const { StudentId } = req.params;
  const updatedData = req.body;
  try {
    const updatedStudent = await StudentModel.findOne
```

Figure 5.4 : store api date

## 5.5 Application Database Design and Configuration

MongoDB is an open-source, document-oriented database designed to store large amounts of data and facilitate efficient use of that data. Since data in MongoDB is not stored and retrieved as a table, it falls into the NoSQL (Not only SQL) category.

Additionally, we utilized Mongoos as the database to generate user schemas and store the data. Requests (APIs) would access the database to carry out actions on the data.

We chose Mongo Database to complete our project for several reasons that make .Mongo Database attractive to use

1. **Document-based Schema:** MongoDB employs a flexible document-based schema in contrast to relational databases, which have fixed table structures. Documents are formats that resemble JSON and may hold many kinds of data, enabling rich, dynamic data models that change in response to demands. Dealing with data that doesn't fit neatly into established tables is made easier by this flexibility.

2. **Scalability** : By expanding your database cluster's number of commodity servers , when more users and information stores on the database.
3. **Performance** : Strong data retrieval and query performance.
4. **NoSQL database**:Flexible documents are used to store data using a schema-less (or schema-on-write) methodology. Documents can contain other documents and have a variety of structures.

This is an overview for connecting the MongoDB to the back-end side:

```
import mongoose from 'mongoose'; 841.4k (gzipped: 226.9k)
import dotenv from "dotenv"; 6.8k (gzipped: 3k)
dotenv.config();

const ConnectDB = async ()=>{
  try {
    const result = await mongoose.connect(`${process.env.DB}`);
    console.log("Connected Successfully to MongoDB");
  } catch (err) {
    console.log(`error to Connect MongoDB ${err}`);
  }
}
export default ConnectDB;
```

Figure 5.5 : MongoDB Connection

# **Chapter 6**

## **System Features and Implementation**

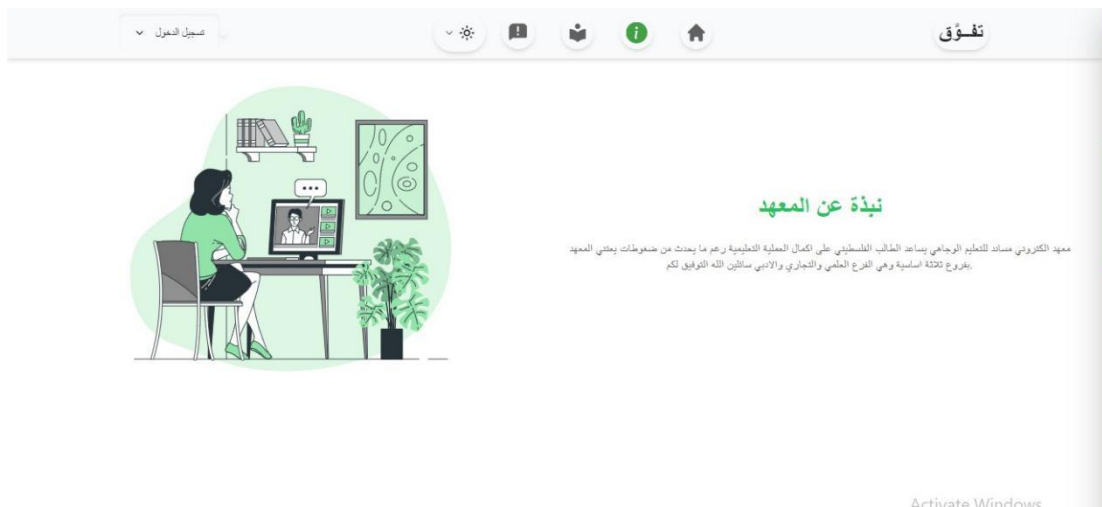
Through the website and mobile application, the Tafooq Institute tries to fulfill as much as possible the needs of high school students, teachers, parents, and the institute director with various goals, including meeting the student's need for courses, summaries, places for training, storing personal notes, and so on, and the teacher's need to follow up and test his students. In more than one way, such as electronic tasks and tests, sending feedback to parents, and so on. We try to achieve a smooth and easy scientific environment for high school students.

# Website

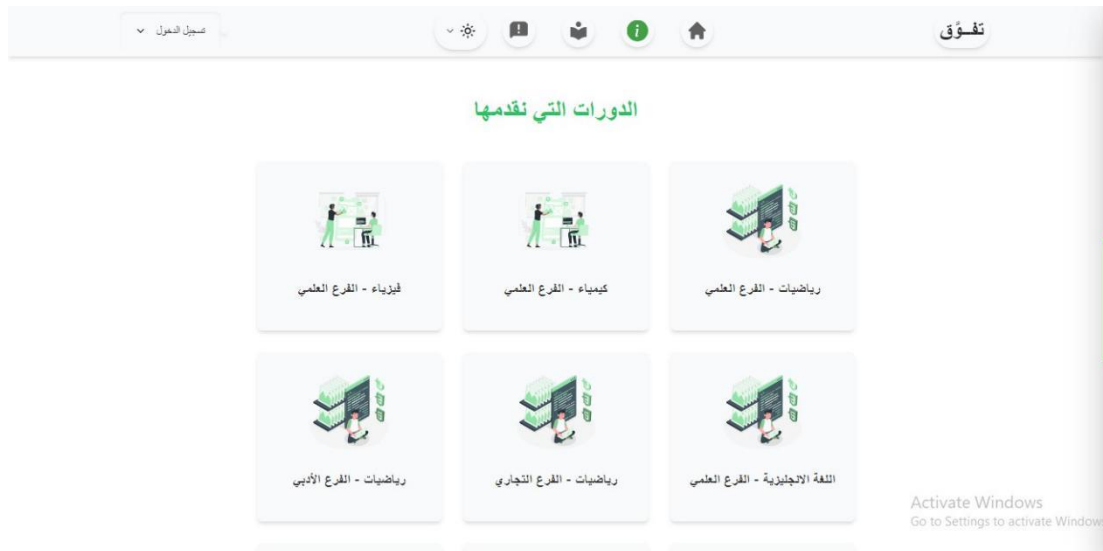
First of all there are homepage for all users:



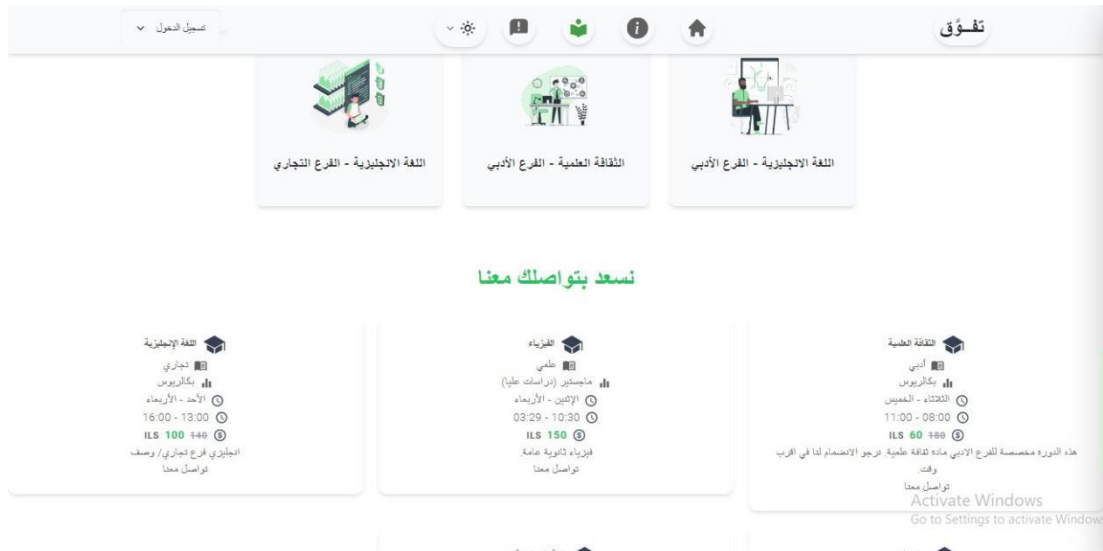
main homepage



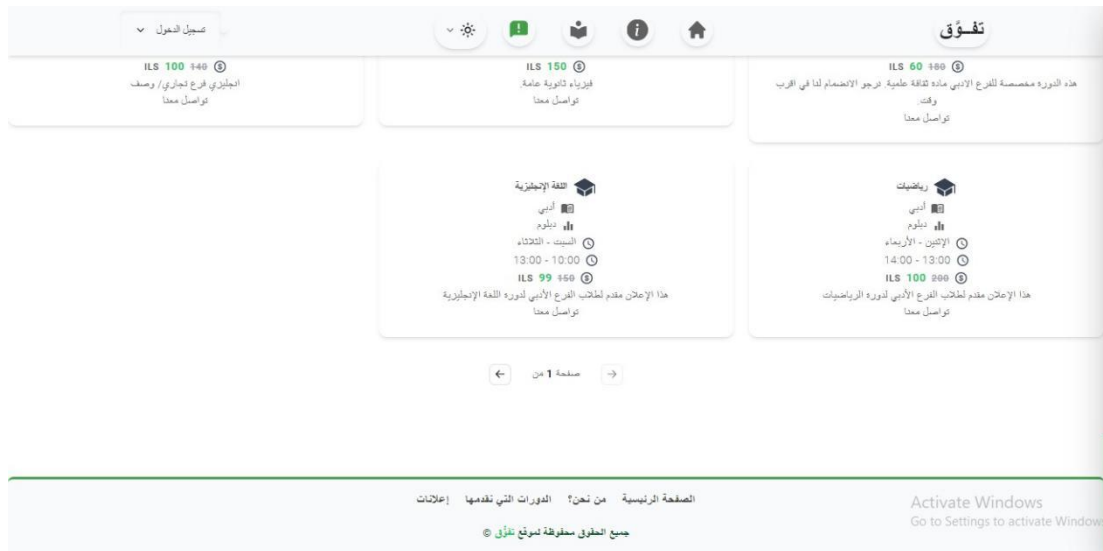
main homepage – about us



main homepage – courses.



main homepage – courses and advertisement.



main homepage – advertisement.

## 6.1 Admin

### 6.1.1 Administration Login

We have one administrator in the system who can log in using his ID number and password

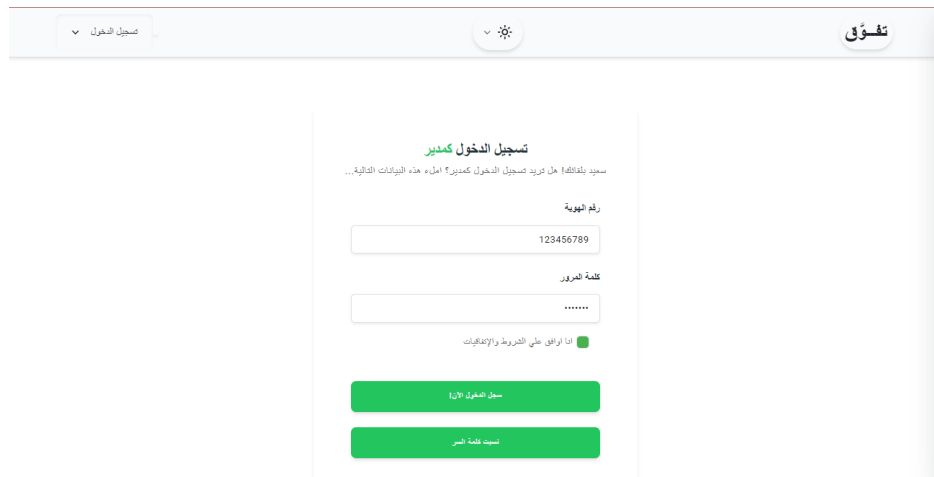


Figure 6.1.1: login administration page

### 6.1.2 Administration Homepage

Once the administrator logs in correctly, several charts appear on the home page, one of which shows the number of teachers who registered throughout the year as well as the number of students who registered throughout the year. It can be controlled, enlarged, minimized, and downloaded to the admin's device in various ways to understand and analyze it. It also shows the top five teachers they have Revenues which calculated by the number of students registered on a course given by the teacher, multiplied by the price of the course without administrative expenses, so that the director remains informed of the financial details. There is also a table called "قبول المعلمين" This is intended for teachers who apply through the advertisements on the home page for the purpose of employment, where the director reviews their information and is rejected and accepted based on that.



Figure 6.1.2: administration homepage 1



Figure 6.1.2: administration homepage 2



Figure 6.1.2: The possibility of displaying the chart in various ways 1

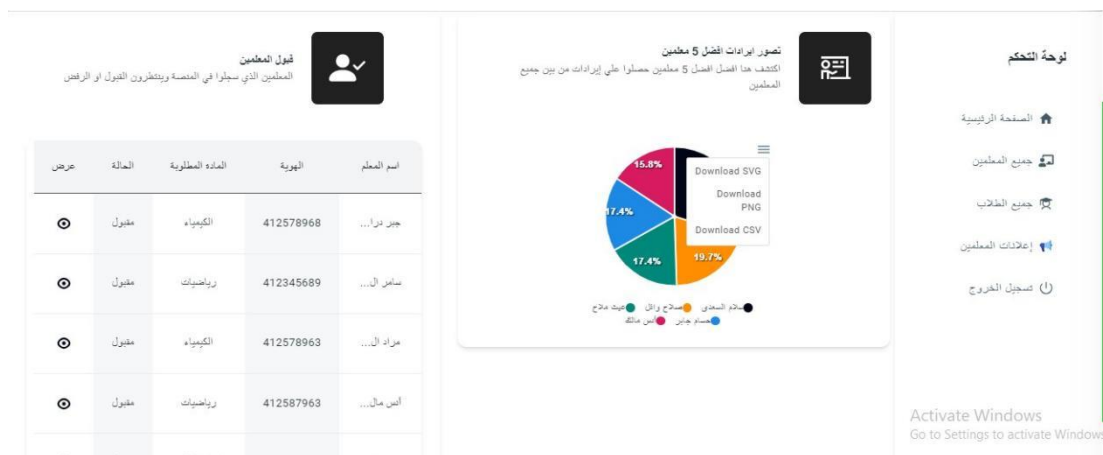


Figure 6.1.2: The possibility of displaying the chart in various ways 2

This table displays job applicants from newest to oldest, and when the admin clicks on the eye icon, it displays all their details.

It displays the teacher's photo, name, ID, email, mobile number, branch, course for which you are applying, the teacher's status (accepted, rejected, or on hold), gender, date of birth, and CV, then allows the admin to accept or reject him.

قبول المعلمين  
المعلمين الذي سجلوا في الفصصة ويتطرون القبول او الرفض



اسم المعلم	الهوية	المادة المطلوبة	الحالة	عرض
جنر درا...	412578968	الكيمياء	مقبول	👁️
سامن ال...	412345689	رياضيات	مقبول	👁️
مراد ال...	412578963	الكيمياء	مقبول	👁️
أس مال...	412587963	رياضيات	مقبول	👁️
فاح جاب...	123456611	الثقافة العلمية	مقبول	👁️


← صفحة 1 من 3 →

Figure 6.1.2: teacher status

تفاصيل المعلم

تفاصيل

سواء برؤيتك مجدداً أيها المدير، هذه تفاصيل حول هرين طوق



الإسم

هرين طوق

الهوية

123456789

البريد الإلكتروني

ateenaxxreen2019@gmail.com

Figure 6.1.2: details for a teacher in table (1)

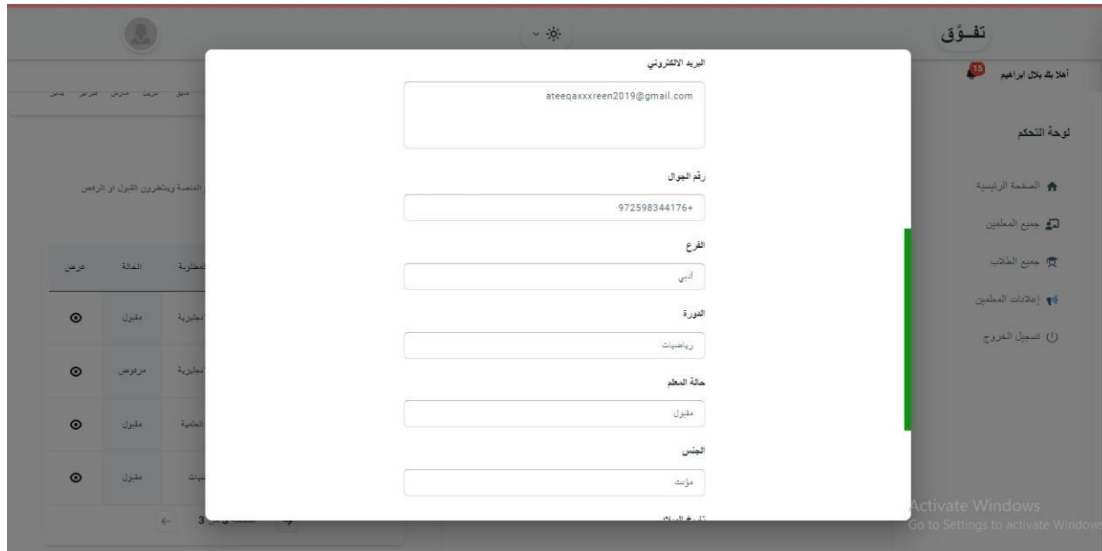


Figure 6.1.2: details for a teacher in table (2)

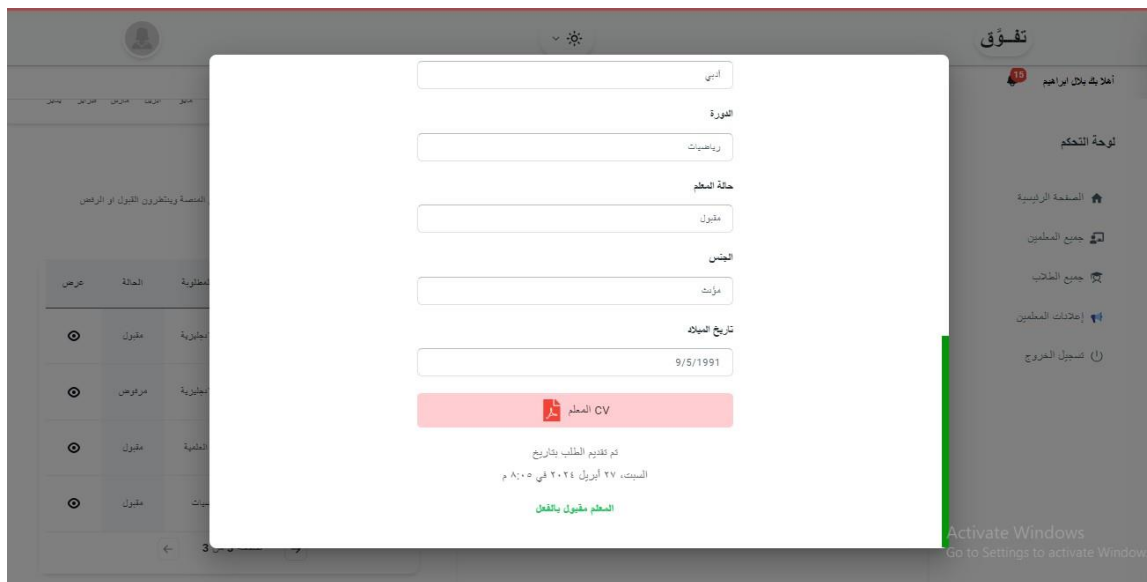


Figure 6.1.2: details for a teacher in table (status: accepted)



Figure 6.1.2: details for a teacher in table (status: rejected)

### 6.1.3 Notification

Real-time notification is provided to the admin, where the admin receives a notification if the student requests registration on our website and when he successfully verifies his email. Also, when students participate in a course, the name of the student and the course teacher appear. Likewise, when a teacher submits to register on our site and when he successfully sets his password to ensure that he can enter the site.



Figure 6.1.3: Admin notification

### 6.1.4 Teachers details

When the admin clicks on "جميع المعلمين", a chart is displayed showing the top five teachers who receive revenues, as I mentioned previously, in addition to the percentage that appears on the chart. At the bottom there is a search system for teachers in the institute, where the search is done by a number of fields or a single field, either by name, ID number, or Both of them can also be searched for teachers whose income is from 99 to 300 for example, or by the number of students in the classroom. For example, if the admin wants to know the classroom whose number of students ranges from 20 to 50, or through all of these criteria, our system provides a powerful filter system, which makes it easier for the manager investigated the details





تفوق

أعلنه بلال ابراهيم

بيانات المعلمين

جميع المعلمين هذا بارتفاع الهوية وارقام الهواتف وإيرادات كل واحد منهم  
مُحَوَّلَةٌ: يرجى العلم أن البيانات التي يُبيِّنُها ترتبطة بعضها ببعض بمعنى أنه إذا كانت بعض البيانات مسجومة والأخرى حاملة لأن تجد ما تبحث عنه

بحث بالاسم:  بحث برقم الهوية:  99  360  بحث بالبريد الإلكتروني:

بحث بالاسم:  بحث برقم الهوية:  0  0  بحث بالبريد الإلكتروني:

الاسم:  الجنس:  عدد الطلاب:  الفرع:  المادة:  البريد الإلكتروني:  الإيرادات:  رقم الهاتف:  رقم الهوية:

اسم المعلم	رقم الهوية	رقم الهاتف	الإيرادات	البريد الإلكتروني	المادة	الفرع	عدد الطلاب	الجنس
عمر عتيق	123456789	972598344176+	ILS 300	ateeqxxxreen2019@gmail.com	رياضيات	أبني	3	أنثى
نوران حمزة	852469587	0594721563	ILS 170	toton202020@gmail.com	اللغة الإنجليزية	تجاري	1	أنثى
فرح جابر	123456611	0587475163	ILS 99	tafkffuwq@gmail.com	اللغة العلمية	أبني	1	أنثى

Activate Windows  
Go to Settings to activate Window

Figure 6.1.4: Filtration table for teachers – search range revenue (3)

تفوق

أعلنه بلال ابراهيم

بيانات المعلمين

جميع المعلمين هذا بارتفاع الهوية وارقام الهواتف وإيرادات كل واحد منهم  
مُحَوَّلَةٌ: يرجى العلم أن البيانات التي يُبيِّنُها ترتبطة بعضها ببعض بمعنى أنه إذا كانت بعض البيانات مسجومة والأخرى حاملة لأن تجد ما تبحث عنه

بحث بالاسم:  بحث برقم الهوية:  99  360  بحث بالبريد الإلكتروني:

بحث بالاسم:  بحث برقم الهوية:  0  0  بحث بالبريد الإلكتروني:

الاسم:  الجنس:  عدد الطلاب:  الفرع:  المادة:  البريد الإلكتروني:  الإيرادات:  رقم الهاتف:  رقم الهوية:

اسم المعلم	رقم الهوية	رقم الهاتف	الإيرادات	البريد الإلكتروني	المادة	الفرع	عدد الطلاب	الجنس
عمر عتيق	123456789	972598344176+	ILS 300	ateeqxxxreen2019@gmail.com	رياضيات	أبني	3	أنثى
فرح جابر	123456611	0587475163	ILS 99	tafkffuwq@gmail.com	اللغة العلمية	أبني	1	أنثى

Activate Windows  
Go to Settings to activate Window

Figure 6.1.4: Filtration table for teachers – search range revenue (4)

تفوق

أعلنه بلال ابراهيم

بيانات المعلمين

جميع المعلمين هذا بارتفاع الهوية وارقام الهواتف وإيرادات كل واحد منهم  
مُحَوَّلَةٌ: يرجى العلم أن البيانات التي يُبيِّنُها ترتبطة بعضها ببعض بمعنى أنه إذا كانت بعض البيانات مسجومة والأخرى حاملة لأن تجد ما تبحث عنه

بحث بالاسم:  بحث برقم الهوية:  99  360  بحث بالبريد الإلكتروني:

بحث بالاسم:  بحث برقم الهوية:  3  2  بحث بالبريد الإلكتروني:

الاسم:  الجنس:  عدد الطلاب:  الفرع:  المادة:  البريد الإلكتروني:  الإيرادات:  رقم الهاتف:  رقم الهوية:

اسم المعلم	رقم الهوية	رقم الهاتف	الإيرادات	البريد الإلكتروني	المادة	الفرع	عدد الطلاب	الجنس
عمر عتيق	123456789	972598344176+	ILS 300	ateeqxxxreen2019@gmail.com	رياضيات	أبني	3	أنثى

Activate Windows  
Go to Settings to activate Window

Figure 6.1.4: Filtration table for teachers – search range revenue and students

### 6.1.5 Students details

When the admin clicks on "جميع الطالب", a chart is displayed showing the number of students enrolled in the institute throughout the year, by indicating their number in each month. Below is a search system for students at the institute, where the search is done through a few fields or one field, either by name, ID number, school name, and so on.



Figure 6.1.5: Chart for teachers

The figure shows a filtration table for students. The table has the following columns: "اسم الطالب" (Student name), "البريد الإلكتروني" (Email), "الفروع" (Branch), "اسم المدرسة" (School name), "العمر" (Age), "رقم الهوية" (ID number), "الجنس" (Gender), and "رقم الهاتف" (Phone number). The table contains three rows of student data:

اسم الطالب	البريد الإلكتروني	الفروع	اسم المدرسة	العمر	رقم الهوية	الجنس	رقم الهاتف
رانيا السعد	areen@gmail.com	أنثى	الصفحة	21	123456798	أنثى	972559662396+
سماسي جبر	taffuw11q@gmail.com	أنثى	مدرسة حطين الثانوية	22	421598745	ذكر	972598744185+
رهنه العمري	ateeqareen2222019@gmail.com	أنثى	مدرسة حطين الثانوية للبنات	22	147852369	أنثى	972598655128+

Figure 6.1.5: Filtration table for students

بيانات الطلاب  
جمع الطلاب هنا بياناتهم الأساسية  
ملاحظة: يرجى العلم أن البيانات التي يكتب بها مرتبطة بعضها ببعض أي إذا كانت بعض البيانات ضخمة والأخرى خفيفة فإن تجد ما تبحث عنه

بحث بالاسم Q  
بحث بالبريد الإلكتروني  
علمي  
بحث باسم المدرسة  
بحث بالعميل  
بحث برقم الهوية  
ذكر  
بحث في الطلاب  
العلمي البحث

اسم الطالب	البريد الإلكتروني	الفرع	اسم المدرسة	العمر	رقم الهوية	الجنس	رقم الهاتف
انيس هالا	nutricoch999@gmail.com	علمي	مدرسة الثانوية	21	111444555	ذكر	0594721563
مستور احمد	taffnuwq@gmail.com	علمي	مدرسة الثانوية	18	258746188	ذكر	0588477165
سيف فريد	tafxcfuwq@gmail.com	علمي	مدرسة الثانوية	21	123587419	ذكر	0597411586

Figure 6.1.5: Filtration table for students (gender and branch)

### 6.1.6 advertisements

Here comes the job of the institute director, mainly in advertisements. This table shows all the advertisements that the director added to employ applicants as teachers at the institute. The advertisement can be deleted, for example, if a certain course has enough class or the advertisement becomes too old, and a previous advertisement can be modified and used to receive new applications, as the advertisement represents a portal for employment. A new ad can be added! All advertisements appear on the home page of the entire site.

إعلانات المعلمين  
هذا يمكنك إضافة إعلانات للمعلمين بحيث تظهر لهم في الصفحة الرئيسية للتسجيل بها

كل الصفحات اعلان

الفرع	الدورة	الوقت	اليوم	مخبرات
ادبي	الثقافة الطموية	11:00 - 08:00	الثلاثاء - الخميس	🗑️ ✎️
علمي	التربية	09:29 - 10:30	الاثنين - الأربعاء	🗑️ ✎️
تجاري	اللغة الإنجليزية	16:00 - 13:00	الأحد - الأربعاء	🗑️ ✎️
ادبي	رياضيات	14:00 - 13:00	الاثنين - الأربعاء	🗑️ ✎️
ادبي	اللغة الإيطالية	13:00 - 10:00	الثلاثاء	🗑️ ✎️

Figure 6.1.6: advertisements table

الخيارات	اليوم	الوقت	الدورة	الفرع
تعديل الإعلان	الثلاثاء - الخميس	11:00 - 08:00	الثقافة العلمية	أنبي
	الاثنين - الأربعاء	03:29 - 10:30	الغرياء	عظي

Figure 6.1.6: edit an advertisement

Figure 6.1.6: details of edit an advertisement (1)

Figure 6.1.6: details of edit an advertisement (2)

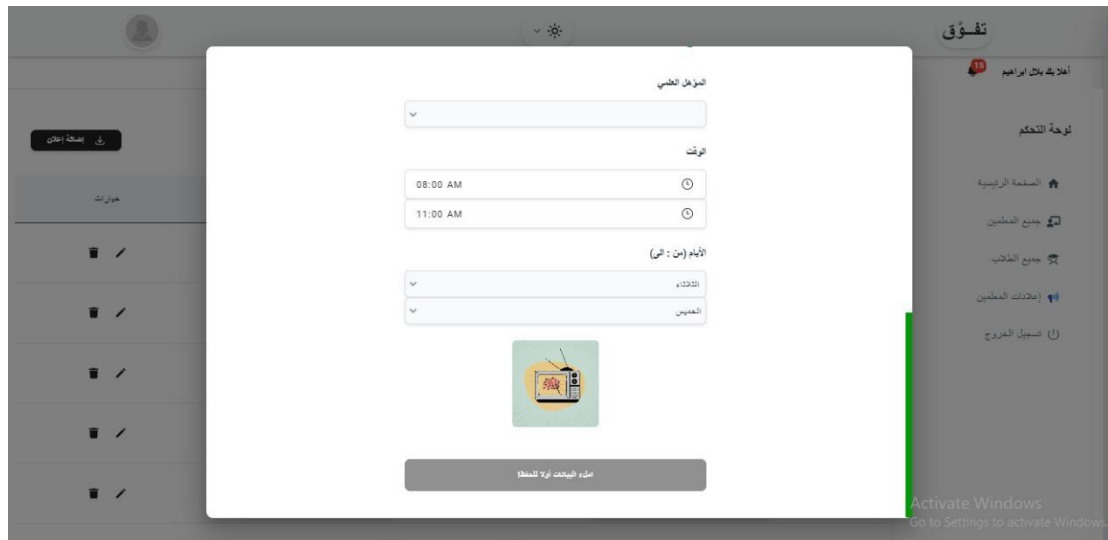


Figure 6.1.6: details of edit an advertisement (3)



Figure 6.1.6: ability to delete advertisement

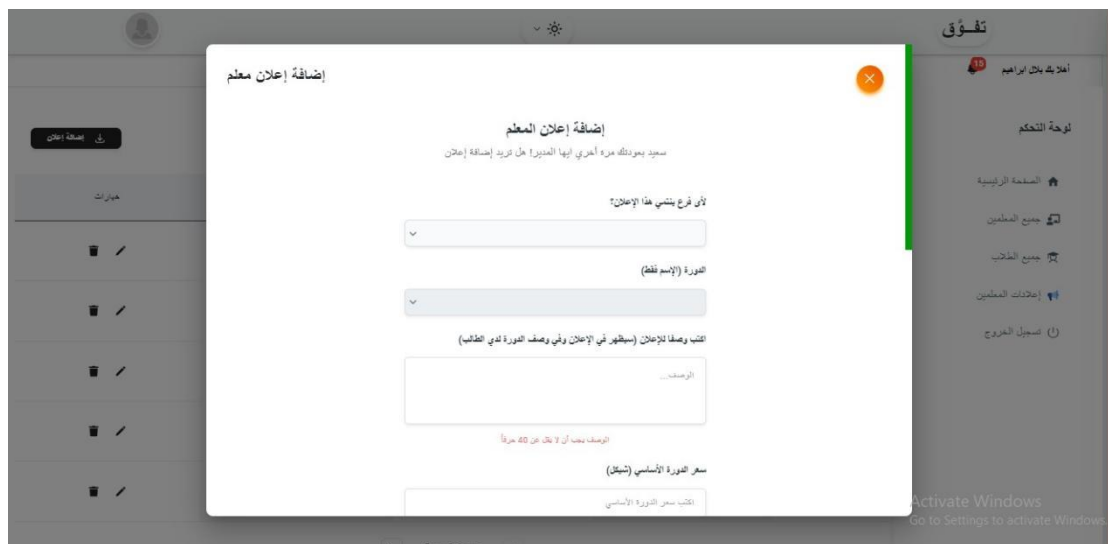


Figure 6.1.6: Add advertisement (1)

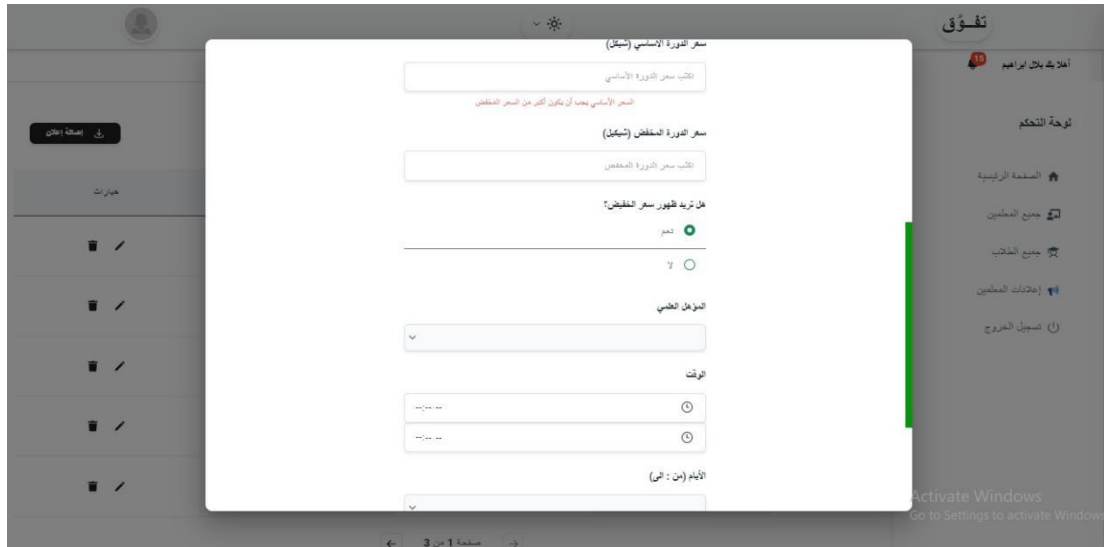


Figure 6.1.6: Add advertisement (2)

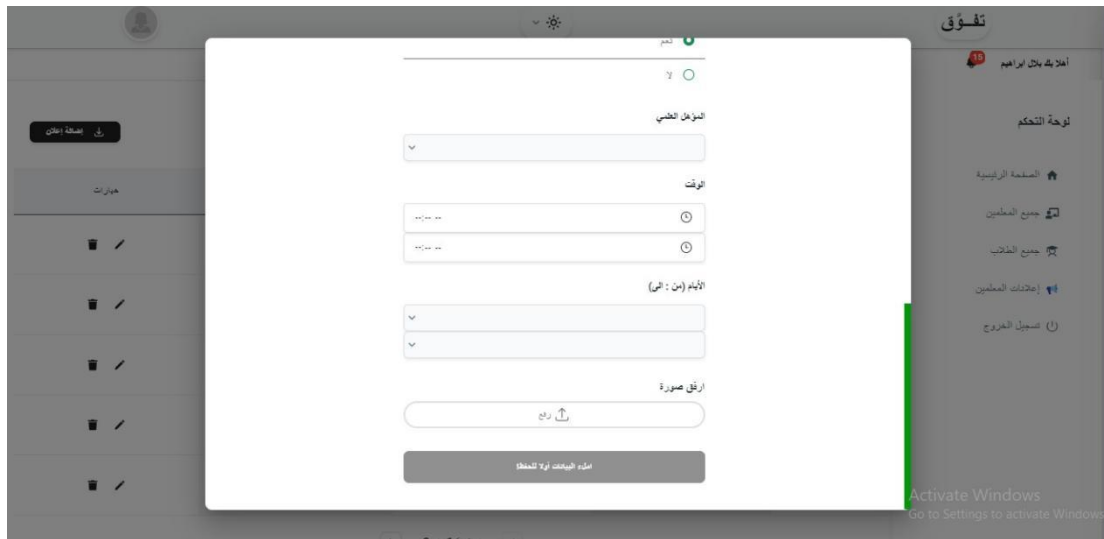


Figure 6.1.6: Add advertisement (3)

## 6.2 Teacher.

### 6.2.1 Teacher Login and Register

The teacher registered in the institute (whose request has been previously approved by the admin) can log into the website using his ID number and password.

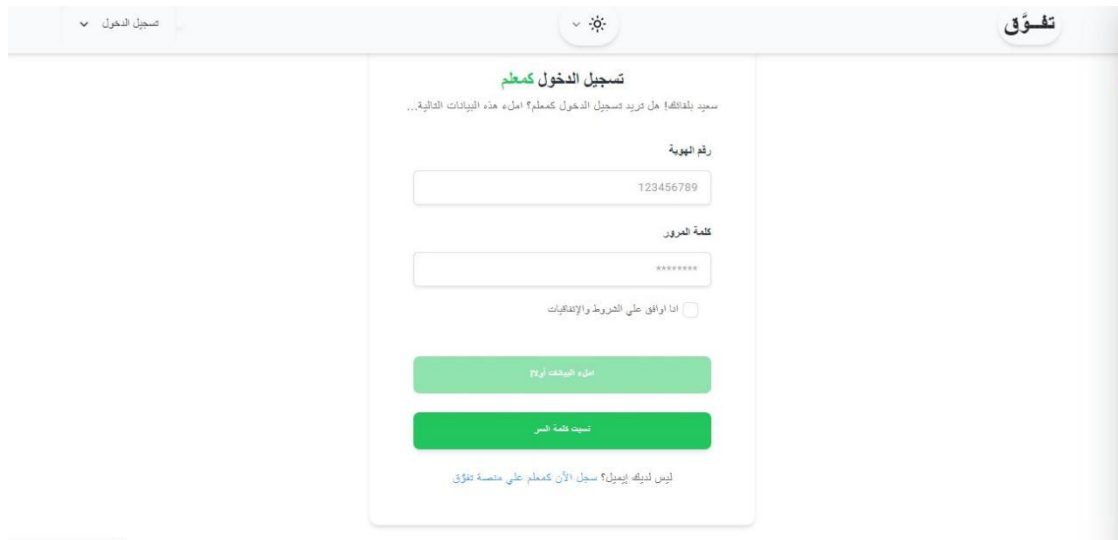


Figure 6.2.1: Teacher login page.

About register: at the bottom of the home page are cards that represent advertisements, which can be used as a request for a job that then goes to the admin until acceptance or rejection is made based on the information entered. For example, if the applicant is an English language teacher and wants to teach the English language, and there is an announcement from the institute that they want an English language teacher at a specific time and days, and he sees that the announcement suits him, he clicks on "تواصل معنا" and then goes to the registry page where some basic data is filled out and the CV is attached.



Figure 6.2.1: advertisements

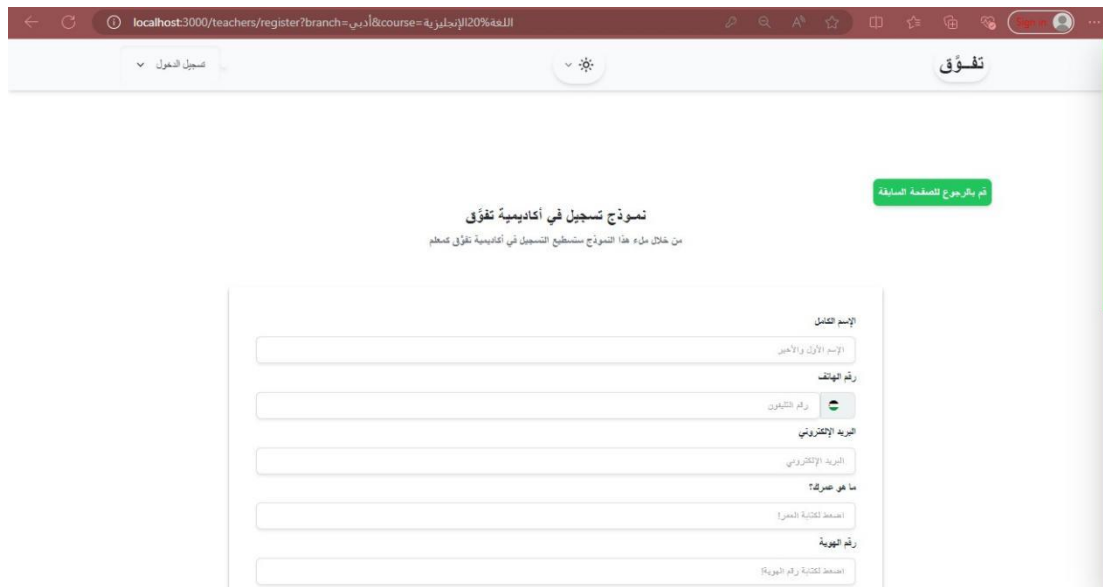


Figure 6.2.1: Teacher register page (1)

The screenshot shows a web browser window with the URL `localhost:3000/teachers/register?branch=أدبي&course=اللغة%20الإنجليزية`. The page title is "تفوق" (Tafuq). The registration form includes the following fields and options:

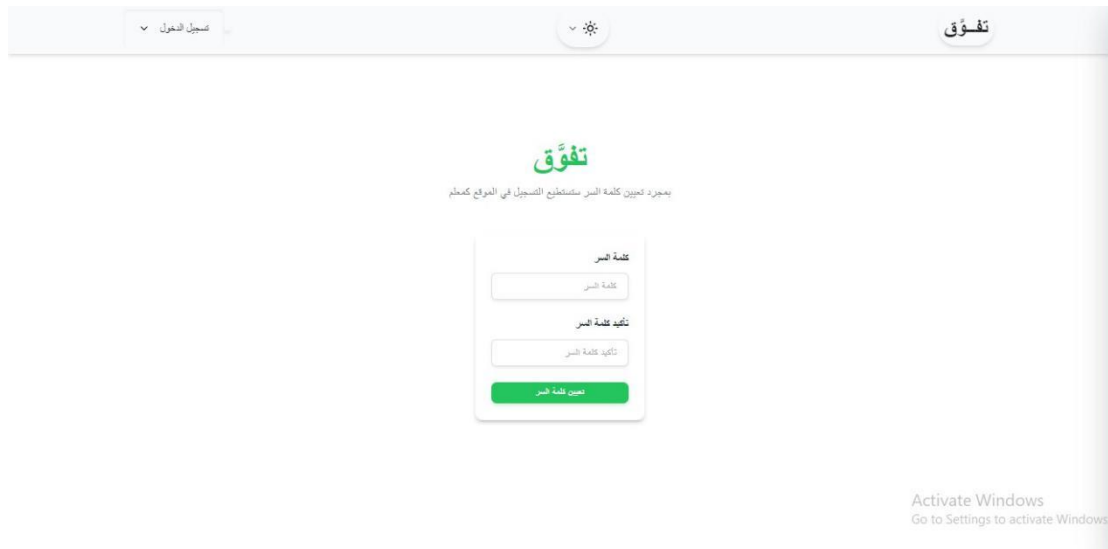
- اسمك لثابتة المزمرة (Permanent Name)
- رقم الهوية (ID Number)
- اسمك لثابتة رقم الهوية (Permanent ID Number)
- الفرع (Branch)
- الجنس (Gender):
  - ذكر (Male)
  - أنثى (Female)
- تاريخ الميلاد (Date of Birth):
- ارفع صورة شخصية لك (Upload your profile picture):
- ارفع الصورة الثانية (Upload the second picture):
- إرسال (Submit) button

**Figure 6.2.1: Teacher register page (2)**

When the teacher is accepted by the admin, an email is sent to him informing him of his acceptance into the institute, and when he clicks “هنا” it allows him to set the password and then act on the site as a teacher.

السلام عليكم، لقد تم قبولكم في أكاديمية تفوق كاستاذ للفرع تجاري لدوره رياضيات.  
الرجاء إكمال عملية التسجيل حتى تتمكن من الدخول إلى الموقع  
لإكمال عملية التسجيل وضبط كلمة السر الخاصة بكم الرجاء الضغط [هنا](#)

**Figure 6.2.1: Email to accepted teacher**



**Figure 6.2.1: Teacher set password**

Also, when the teacher is rejected, the institute sends him an email in which it wishes him a happy professional life.



**Figure 6.2.1: Email to a rejected teacher**

## 6.2.2 Teacher Homepage

By clicking on "الصفحة الرئيسية" the number of participating students and total revenues are displayed, as well as the number of assignments submitted by the teacher and exams, and a chart shows the number of students who registered throughout the year. Also, a table shows the recent activities performed by the teacher. If the teacher responded to the student, the color of the hover appears green, while others are red. If the teacher responds, the color becomes green.



Figure 6.2.2: Teacher homepage (1)



Figure 6.2.2: Teacher homepage(2)



Figure 6.2.2: Teacher homepage (3)



Figure 6.2.2: Teacher homepage (4)



Figure 6.2.2: number of homework 4 and the last homework the teacher not reply to it so the hover red in homepage table.

### 6.2.3 Teacher homework check

By clicking on "فحص الواجبات" a list of students to whom an assignment has been sent will appear, where the student's name and assignment title will appear on the cards. They will be in green if the teacher has completed reviewing them and sending the correct solution and evaluation to the student. However, if they have not been reviewed, they will be in the red for the teacher to pay attention to.

When the teacher clicks on one of the cards, the details of the assignment appear, including the title, description, and duration, as well as the file sent for the student to solve.

If the card is green, it means that the student sent his solution. The teacher also corrected his file and sent him another file with the evaluation.

If the card is red, it means that the student sent the solution, but the teacher has not responded yet. The teacher can respond by sending a comment bearing the mark, and if he wishes, a note will be added to the file containing corrections to the student's answers, and the card will change to green.

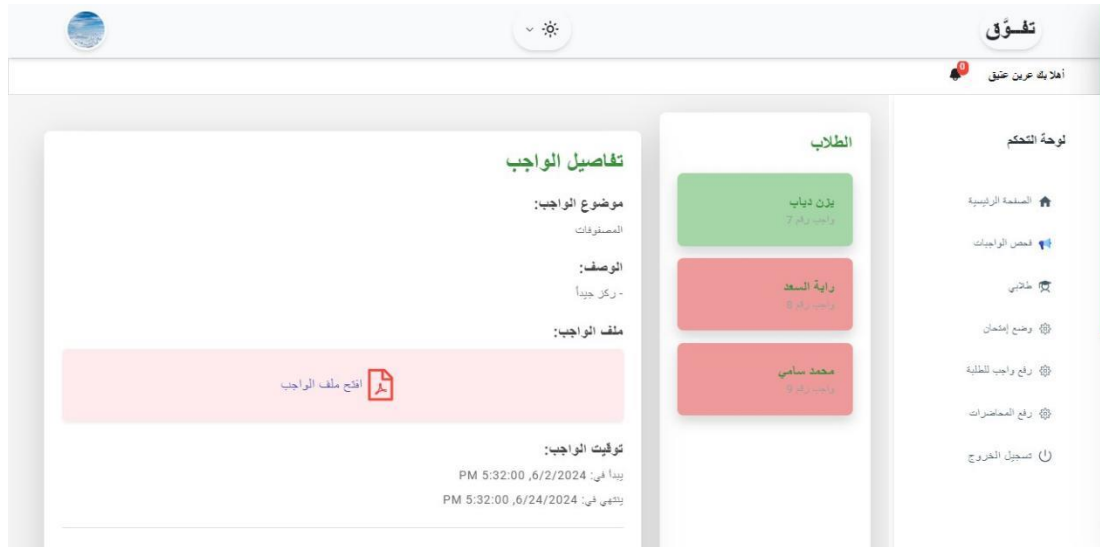


Figure 6.2.3: Teacher homework check (general view)

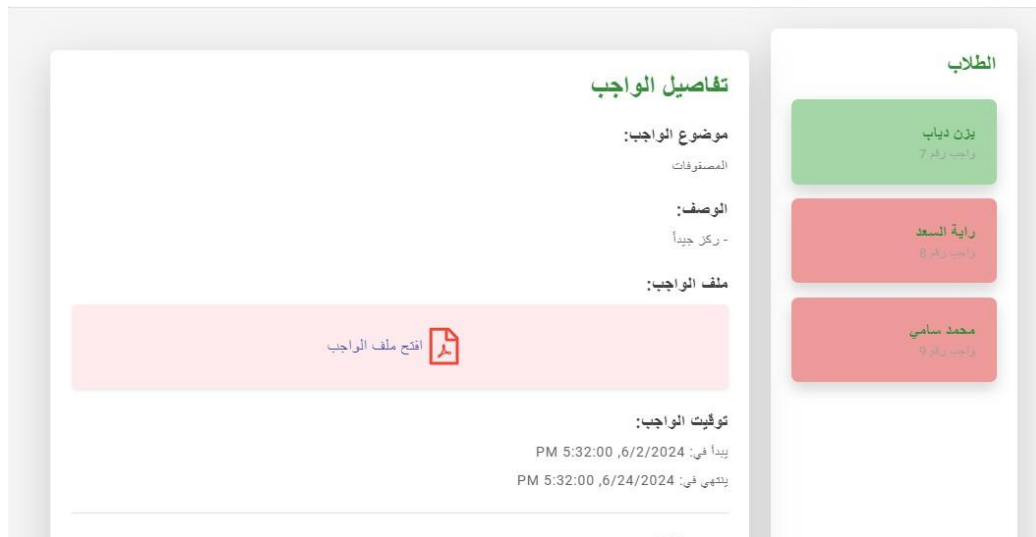


Figure 6.2.3: Teacher homework check (An assignment submitted by the student and reviewed -1)



Figure 6.2.3: Teacher homework check (An assignment submitted by the student and reviewed -2)



Figure 6.2.3: Example of a student turned in an assignment, but it was not reviewed by the teacher (red card)

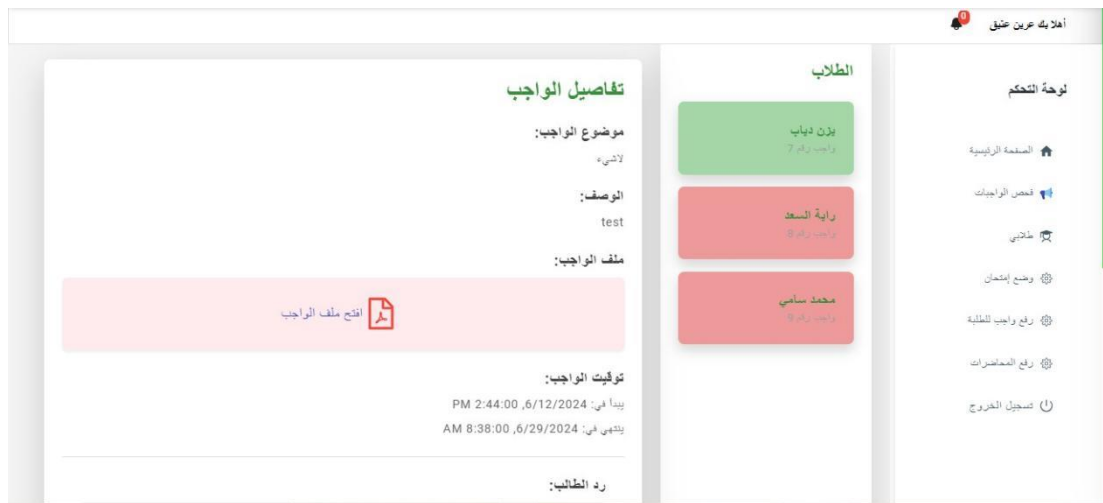


Figure 6.2.3: Example of a student turned in an assignment, but it was not reviewed by the teacher – details -

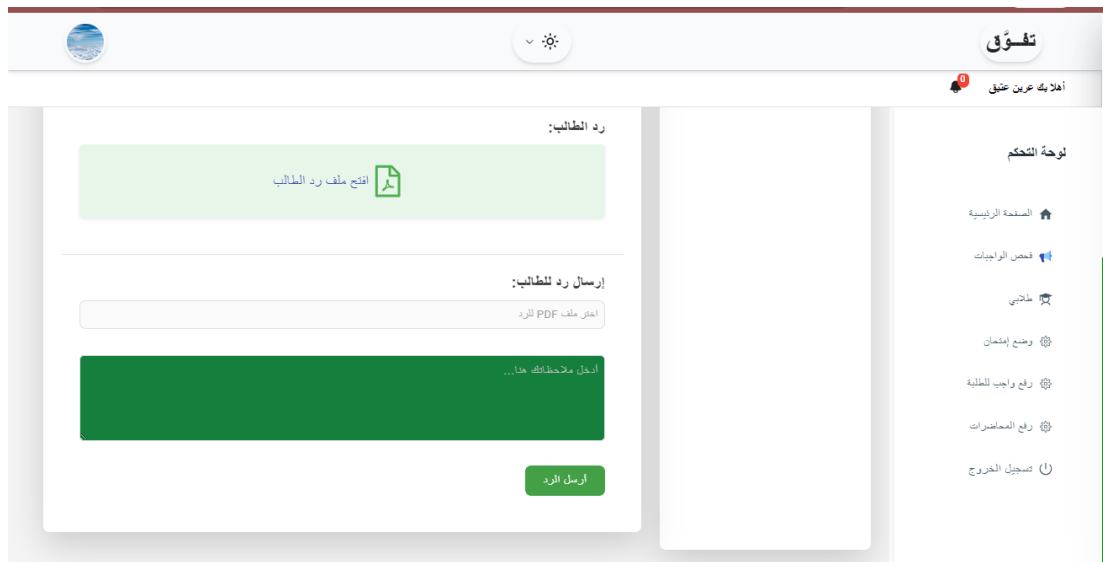


Figure 6.2.3: Example of a student turned in an assignment, and the teacher will send reply

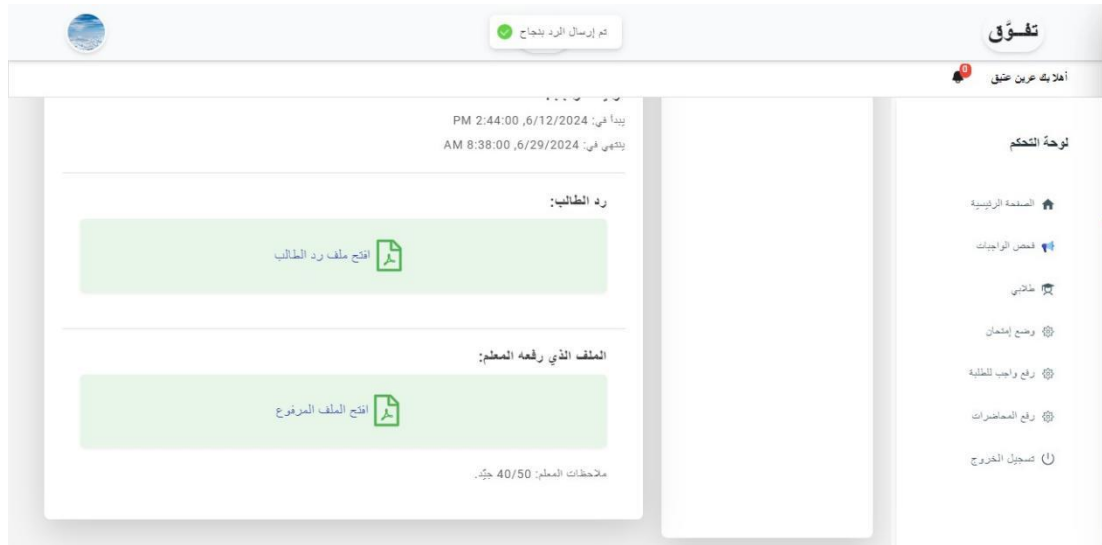


Figure 6.2.3: after teacher send reply.



Figure 6.2.3: The card turned green.

#### 6.2.4 Creating an exam for students

When the teacher presses "وضع امتحان" (Set Exam) A page appears for him to fill in the data for the short test that will be presented to the students in his class. He gives the title and description of the test, the number of questions, and the total grades. The mark for the individual question is calculated, as it appears in green. For example, if the number of questions is 2 and the total mark is 7, the mark for one question is 3.5, as well as the date of the exam and the duration in minutes. Then he begins adding questions, where he puts the title and description of the question (the description is optional). He can also attach a picture to the question, allowing him to set options and add pictures to each of the options (this is also optional), then choose the correct option, which allows the

system to make autocorrect on the student side, which gives the teacher flexibility in achieving the goal of the test and testing the students' abilities.

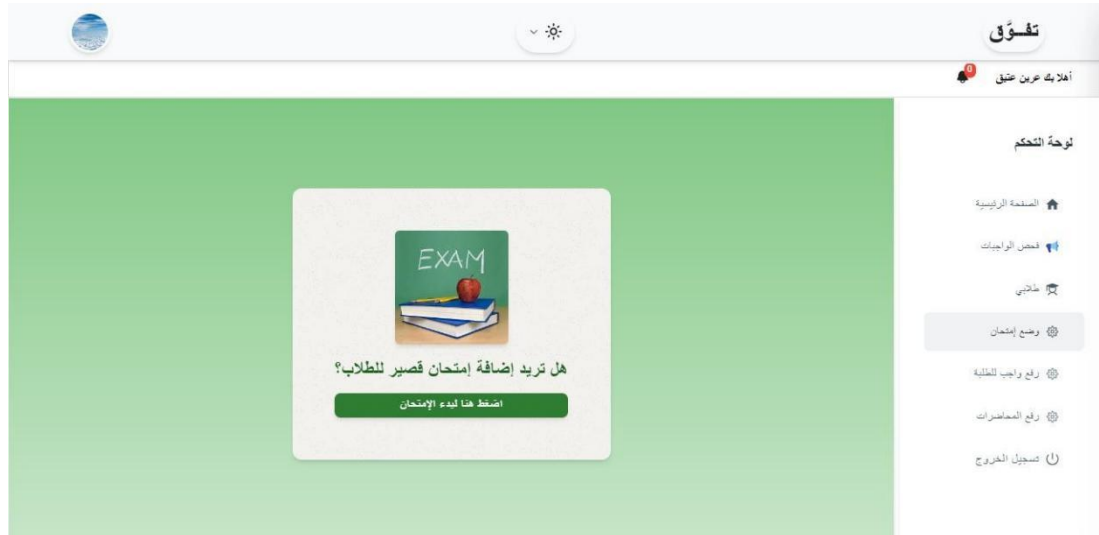


Figure 6.2.4: Exam homepage.

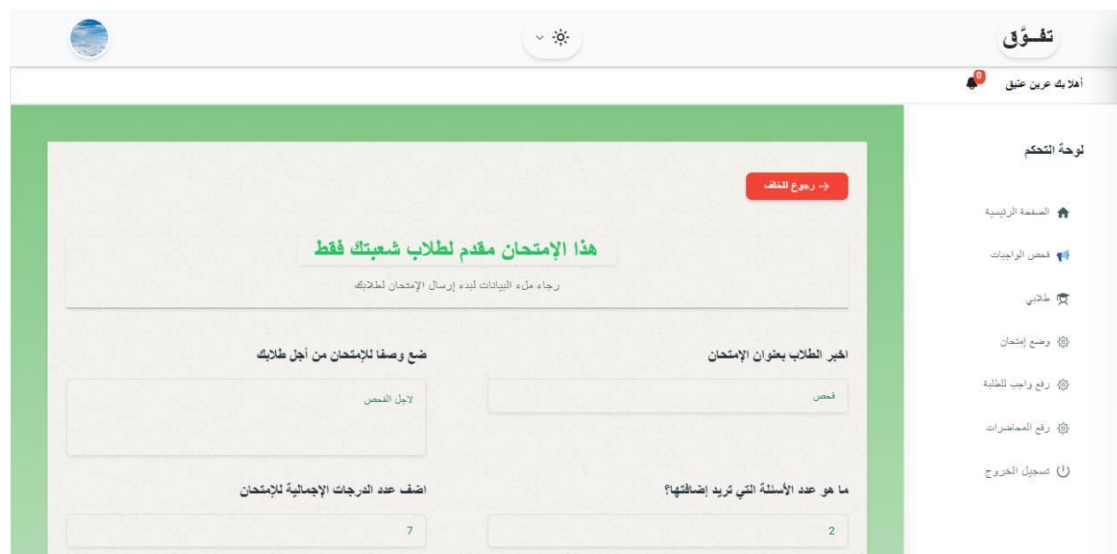


Figure 6.2.4: Write the exam details (1)

Figure 6.2.4: Write the exam details (2)

Figure 6.2.4: Write the first question and its options (1)

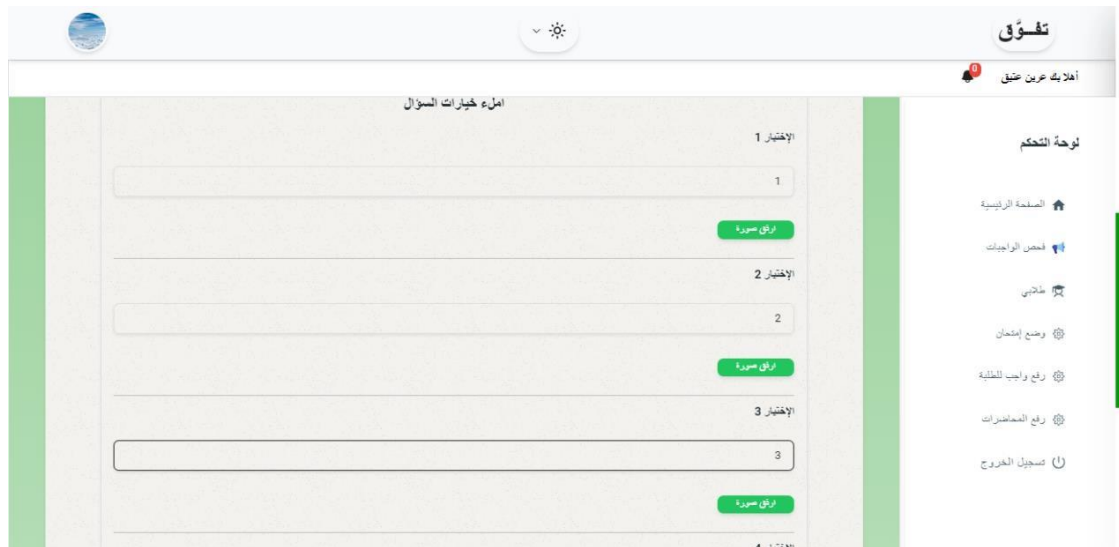


Figure 6.2.4: Write the first three options



Figure 6.2.4: Write the fourth option

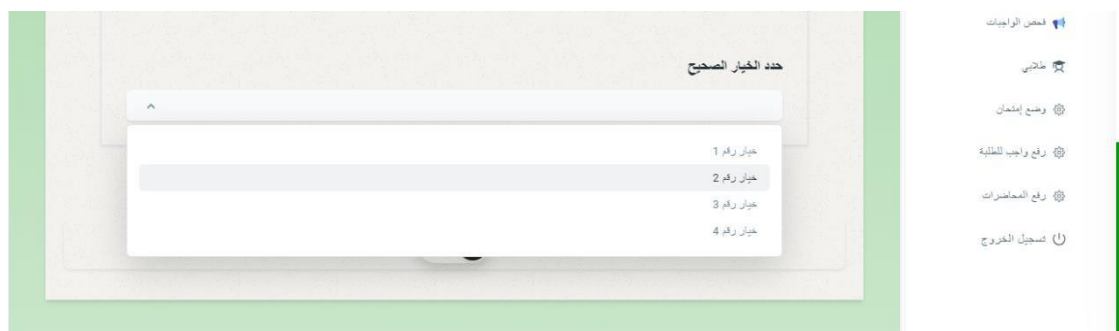


Figure 6.2.4: Choose correct option.

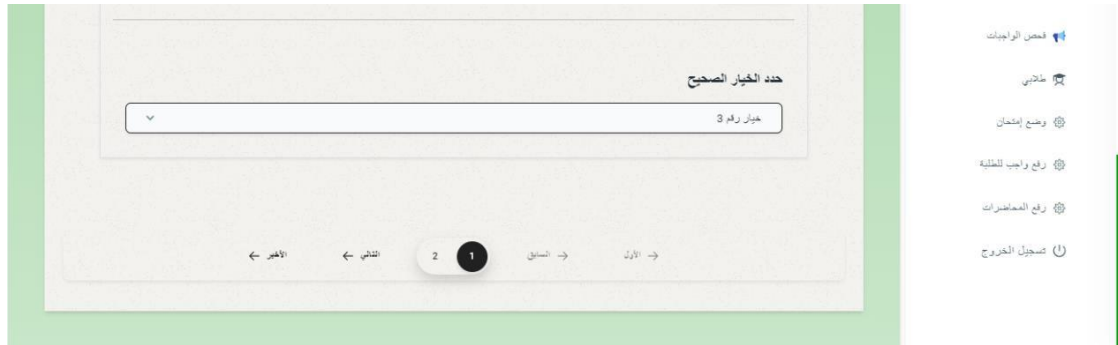


Figure 6.2.4: Moving on to the second question

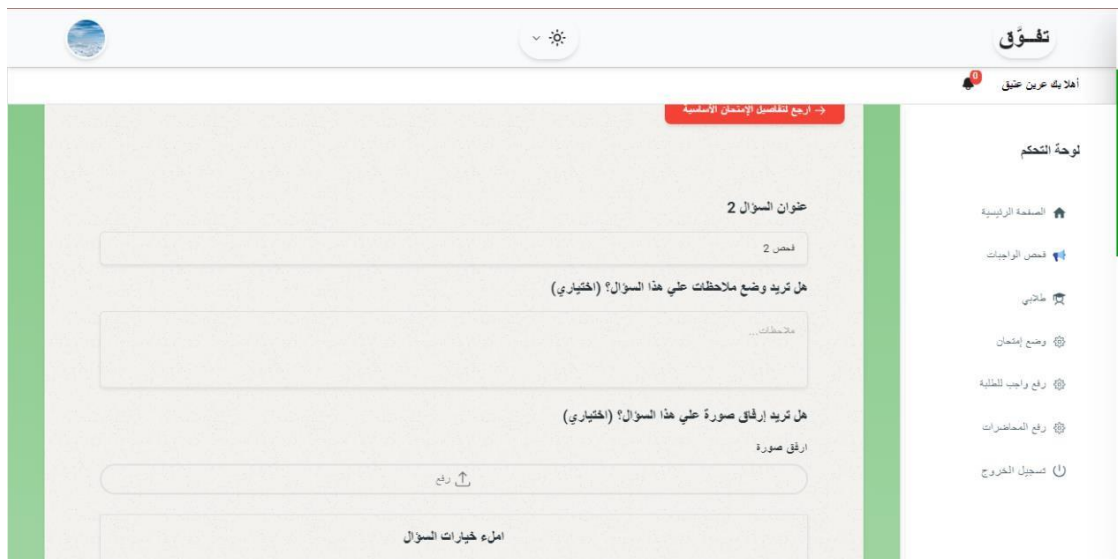


Figure 6.2.4: Second question (1)

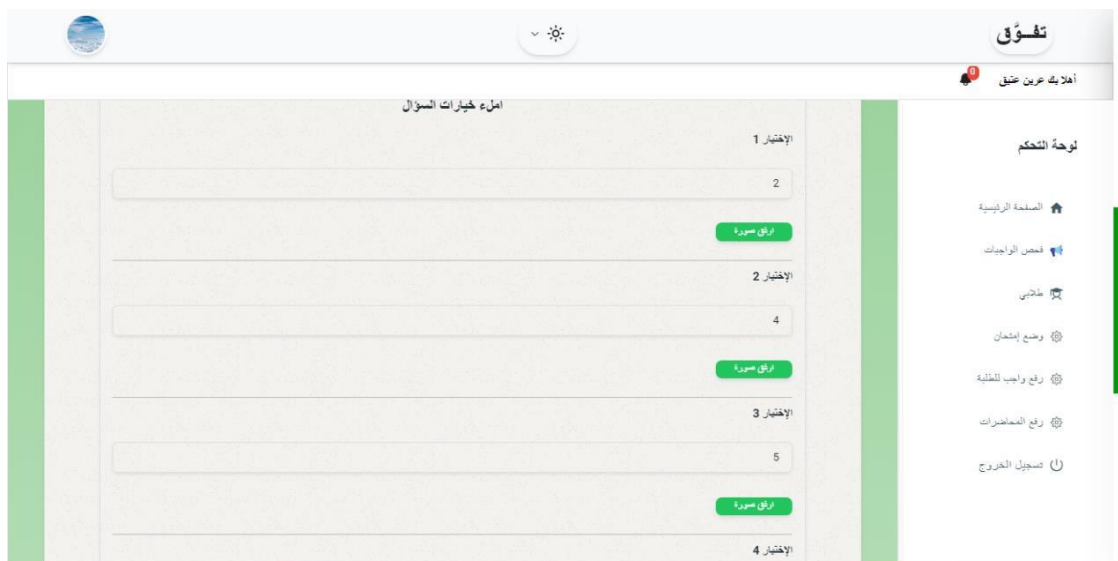
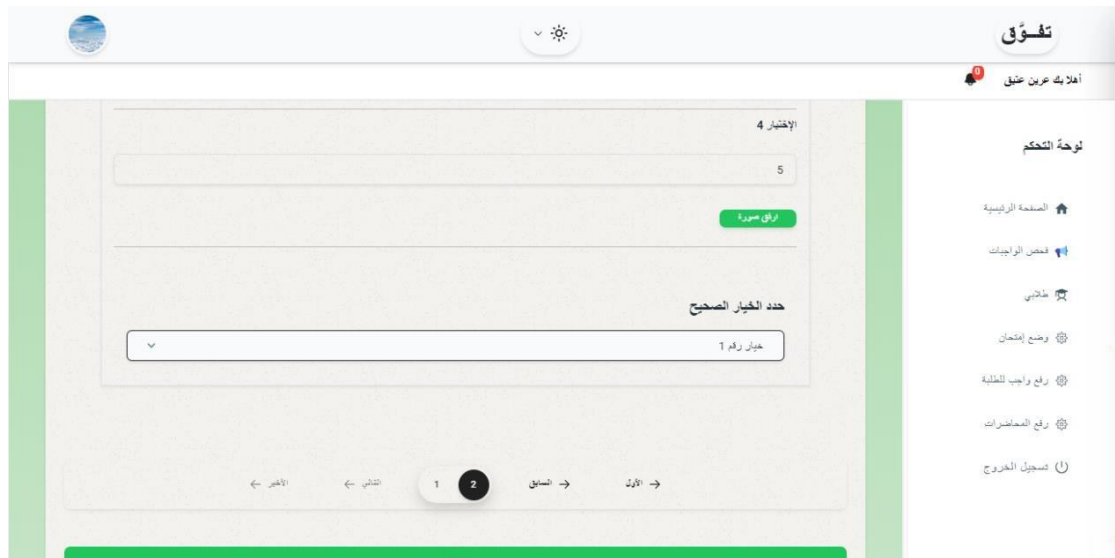


Figure 6.2.4: Second question (2)



**Figure 6.2.4: Second question (3)**



**Figure 6.2.4: wait for send exam**



**Figure 6.2.4: Send exam successful**

### 6.2.5 Creating homework for students

By pressing "رفع واجب للطلبة" The teacher can add an assignment for students registered in the course by adding the subject of the assignment, its description, its start and end dates, and the assignment file, which can be an image or a pdf file.

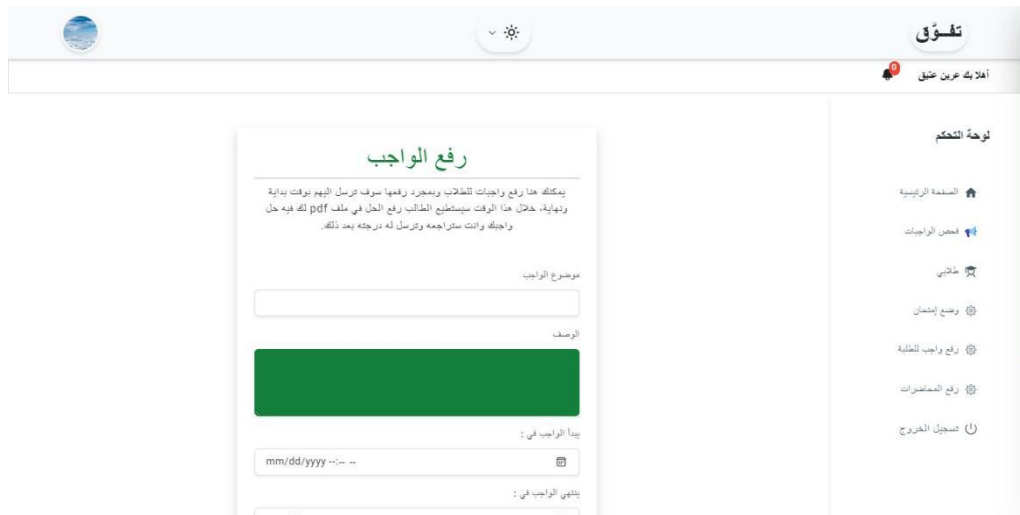


Figure 6.2.5: send homework page (1)

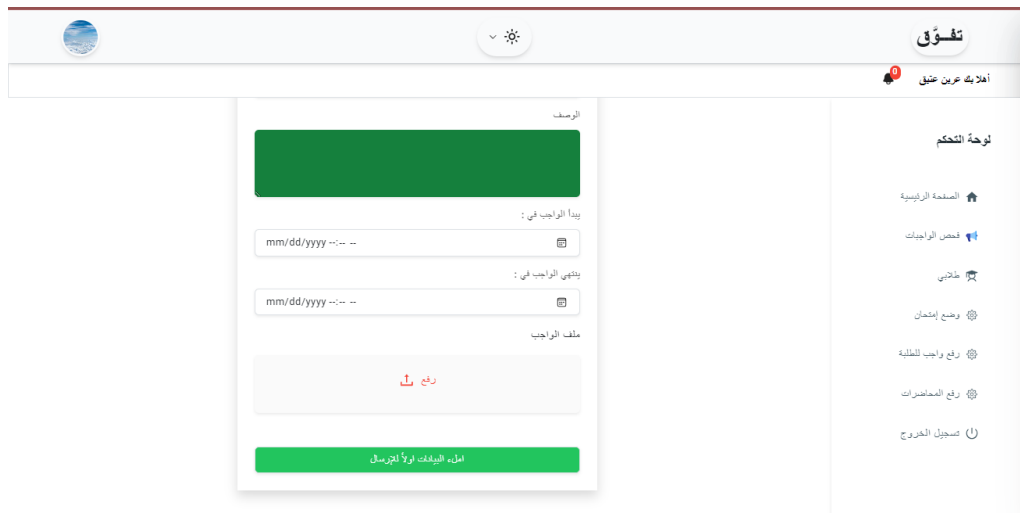


Figure 6.2.5: send homework page (2)

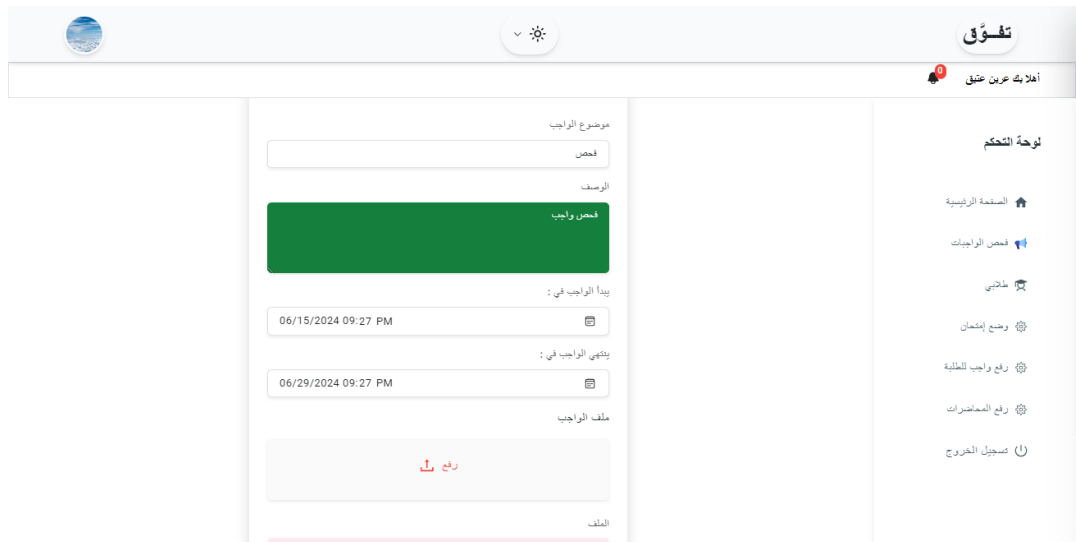


Figure 6.2.5: homework example (1)

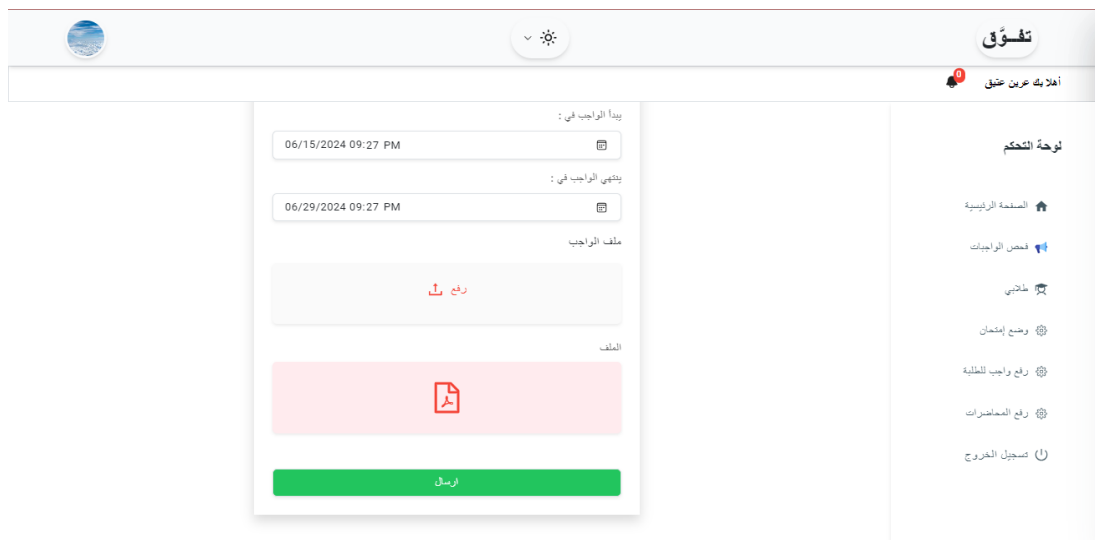


Figure 6.2.5: homework example (2)

After pressing “ارسال”

Figure 6.2.5: Send homework successfully

#### 6.2.6 upload lectures for students

By pressing "رفع المحاضرات" The teacher can add a class for students registered with him in the same course by setting a title for the class, then describing it, and uploading an explanatory video. Several PDF files can be attached by clicking on “اضف المزيد” and a description of these attachments so that the student can understand the class.

Figure 6.2.6: send lecture page (1)

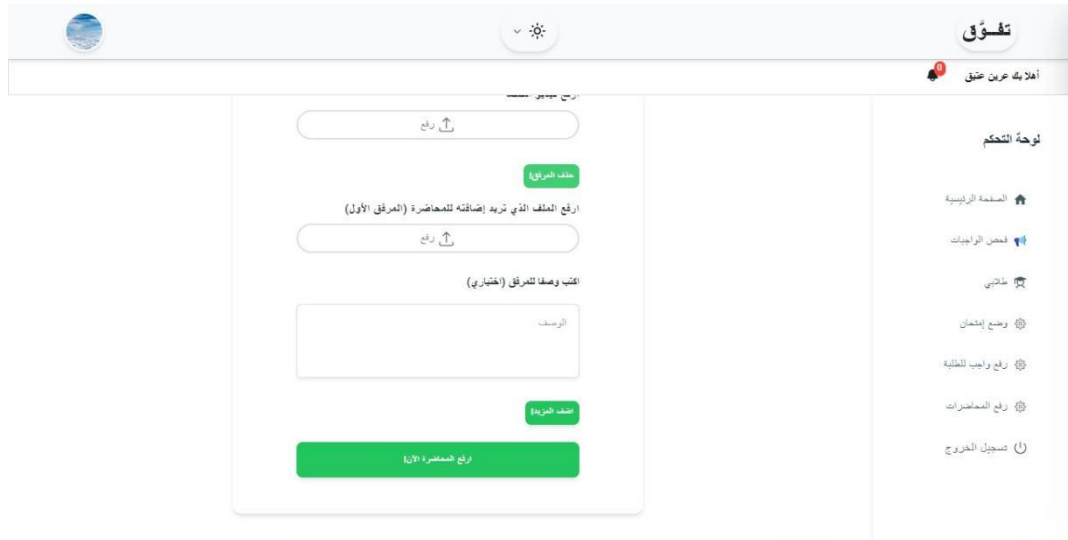


Figure 6.2.6: send lecture page (2)

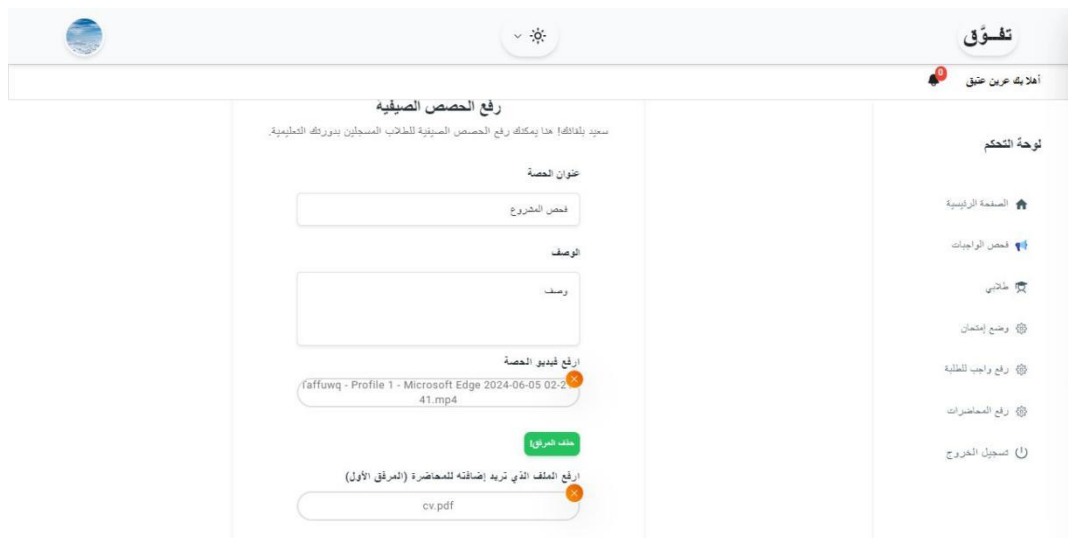


Figure 6.2.6: send lecture example

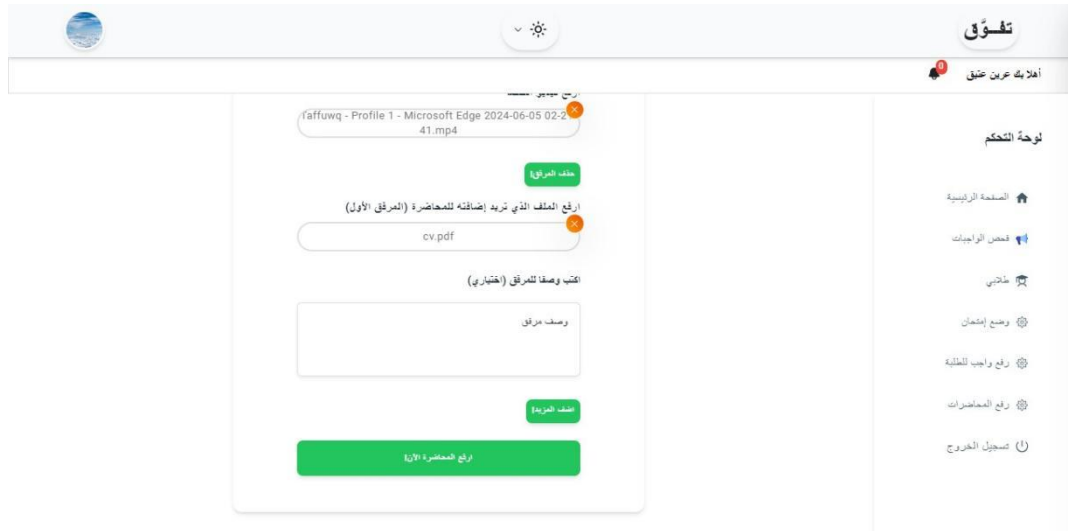


Figure 6.2.6: send lecture example with pdf files.

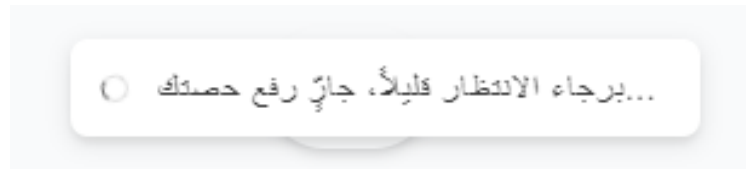


Figure 6.2.6: wait for upload lecture



Figure 6.2.6: Uploaded lecture successfully

### 6.2.7 Show students

By pressing "طالبي" The teacher can see the number of students registered with him during the year for each month through a chart that the teacher can download as an image or as an Excel file to clarify the details.



Figure 6.2.7: Chart of students enrolled during the year (1)



Figure 6.2.7: Chart of students enrolled during the year (2)



Figure 6.2.7: Possibility of downloading the chart in different ways

cdn.fsbx.com

category	المعلمون المسجلون
يناير	0
فبراير	0
مارس	0
أبريل	1
مايو	1
يونيو	10
يوليو	0
أغسطس	0
سبتمبر	0
أكتوبر	0
نوفمبر	0
ديسمبر	0

Figure 6.2.7: download as excel sheet

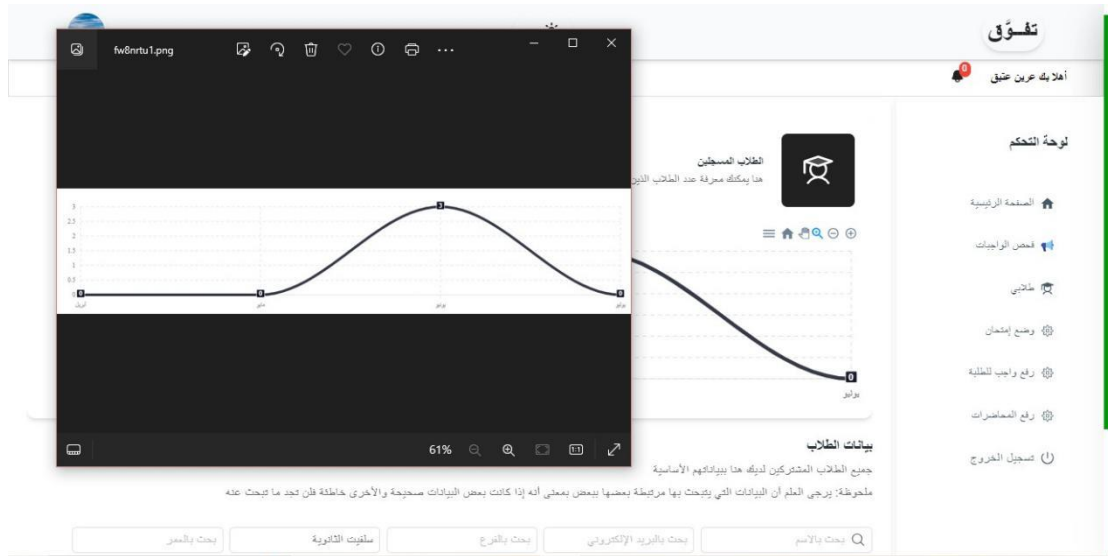


Figure 6.2.7: download as image.

Below is a table showing the data of the students registered with the teacher and a powerful search system where he can search through one piece of information or several pieces of information to verify accuracy.

اسم الطالب	البريد الإلكتروني	الفرع	اسم المدرسة	العمر	رقم الهوية	الجنس	رقم الهاتف
راية السعد	areen@gmail.com	أبني	الحنفة	21	123456798	أنثى	972559662396+
محمد سامي	taffmdddwq@gmail.com	أبني	سليبت الثانوية	20	221155978	ذكر	972598411765+
محمد	taffiwnz2222222@nmail.com	أبند	بنفس الثانوية	22	458963123	ذكر	0598455168

Figure 6.2.7: table of students registered with the teacher

**بيانات الطلاب**

جميع الطلاب المشتركين لديك هنا بياناتهم الأساسية  
ملحوظة: يرجى العلم أن البيانات التي يبحث بها مرتبطة بعضها ببعض بمعنى أنه إذا كانت بعض البيانات صحيحة والأخرى خاطئة فلن تجد ما تبحث عنه

اسم الطالب	البريد الإلكتروني	الفرع	اسم المدرسة	العمر	رقم الهوية	الجنس	رقم الهاتف
محمد سامي	taffmdddwq@gmail.com	أديبي	سلفيت الثانوية	20	221155978	ذكر	972598411765+
بزن مهاب	taffuwqzzzzzz@gmail.com	أديبي	دابلس الثانوية	22	458963123	ذكر	0598455168

**Figure 6.2.7: search depend on gender (example)**

**بيانات الطلاب**

جميع الطلاب المشتركين لديك هنا بياناتهم الأساسية  
ملحوظة: يرجى العلم أن البيانات التي يبحث بها مرتبطة بعضها ببعض بمعنى أنه إذا كانت بعض البيانات صحيحة والأخرى خاطئة فلن تجد ما تبحث عنه

اسم الطالب	البريد الإلكتروني	الفرع	اسم المدرسة	العمر	رقم الهوية	الجنس	رقم الهاتف
محمد سامي	taffmdddwq@gmail.com	أديبي	سلفيت الثانوية	20	221155978	ذكر	972598411765+

**Figure 6.2.7: search depend on gender and school name (example)**

يناير فبراير مارس أبريل مايو يونيو يوليو أغسطس سبتمبر أكتوبر نوفمبر ديسمبر

**بيانات الطلاب**

جميع الطلاب المشتركين لديك هنا بياناتهم الأساسية  
ملحوظة: يرجى العلم أن البيانات التي يبحث بها مرتبطة بعضها ببعض بمعنى أنه إذا كانت بعض البيانات صحيحة والأخرى خاطئة فلن تجد ما تبحث عنه

اسم الطالب	البريد الإلكتروني	الفرع	اسم المدرسة	العمر	رقم الهوية	الجنس	رقم الهاتف
------------	-------------------	-------	-------------	-------	------------	-------	------------

**Figure 6.2.7: search on data does not exist.**

## 6.2.8 Notification

The teacher receives a notification whenever a student joins his course.



Figure 6.2.8: Teacher notification.

## 6.3 Student.

### 6.3.1 Student login

A student previously registered in the system can access the website using his ID number and password

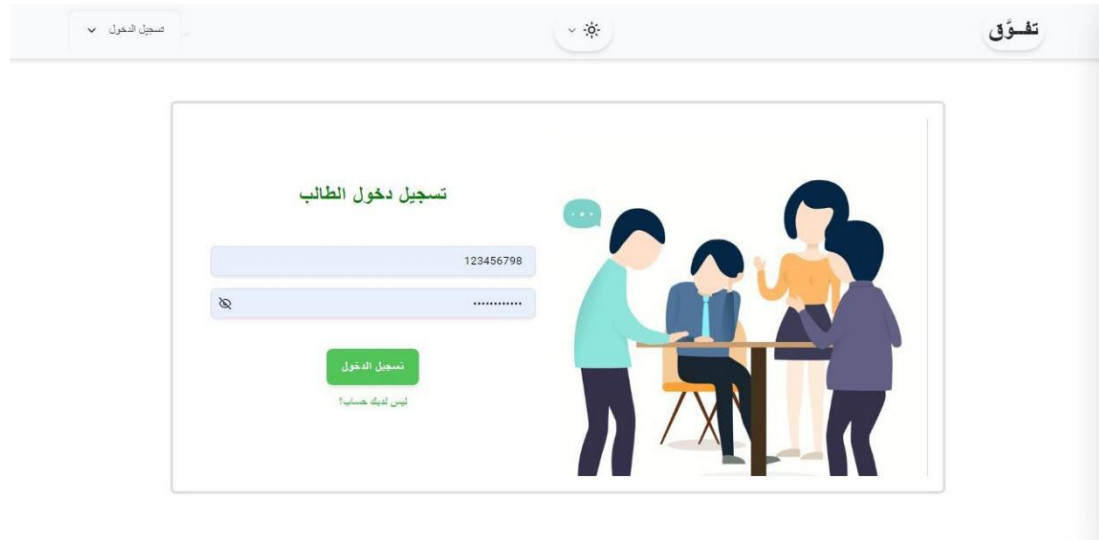


Figure 6.3.1: Student login

Here, the password is verified and its compliance with the conditions is confirmed



Figure 6.3.1: Password validation

### 6.3.2 Student Register

If the student wants to register with us, he must enter several basic data, in addition to the branch to which he belongs and his password. To authenticate the user, a verification code is sent to Gmail.

The screenshot shows the top navigation bar with a dropdown menu for 'تسجيل النعمول', a search icon, and the word 'تفوق'. Below the navigation bar, there is a green button labeled 'رجوع للصفحة السابقة'. The main heading is 'نموذج التسجيل كطالب في أكاديمية تفوق' with a subtitle 'من خلال ملء هذا النموذج يستطيع التسجيل في أكاديمية تفوق كطالب'. The registration form includes the following fields:

- الإسم الكامل (Full Name)
- الإسم الأول والأخير (First and Last Name)
- رقم الهاتف (Phone Number)
- رقم التليفون (Phone Number)
- البريد الإلكتروني (Email)
- البريد الإلكتروني (Email)
- رقم الهوية (ID Number)
- اصنع لكلمة رقم الهوية (Create ID Number)
- الإسم الكامل لولي الأمر (Full Name of Guardian)
- الإسم الأول والأخير لولي الأمر (First and Last Name of Guardian)

Figure 6.3.2: Student register page (1)

The screenshot shows the second set of registration fields:

- اصنع لكلمة رقم الهوية (Create ID Number)
- الإسم الكامل لولي الأمر (Full Name of Guardian)
- الإسم الأول والأخير لولي الأمر (First and Last Name of Guardian)
- رقم هوية ولي الأمر (Guardian ID Number)
- اصنع لكلمة رقم الهوية (Create ID Number)
- كلمة المرور (Password)
- اصنع لكلمة كلمة المرور (Create Password)
- ما هي صورك؟ (What is your picture?)
- اصنع لكلمة العمر (Create Age)
- الفرع (Branch)
- اسم المدرسة (School Name)
- اصنع لكلمة اسم المدرسة (Create School Name)
- الجنس (Gender)
- ذكر (Male)
- أنثى (Female)
- تاريخ الميلاد (Date of Birth)
- /--

Figure 6.3.2: Student register page (2)

**Figure 6.2.1: Student register page (3)**

**Figure 6.3.2: verify email.**

**Figure 6.3.2: The institute sends a code to the email**



Figure 6.3.2: student put code in place.

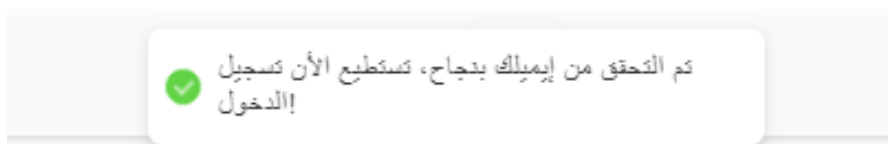


Figure 6.3.2: The email verification process is correct and student login using id number and password

### 6.3.3 Student Homepage

The student's personal information, such as his phone number, email address, and photo, is displayed on his home page. In addition to the side bar, it includes general information for student that doesn't belong to a to a course-specific

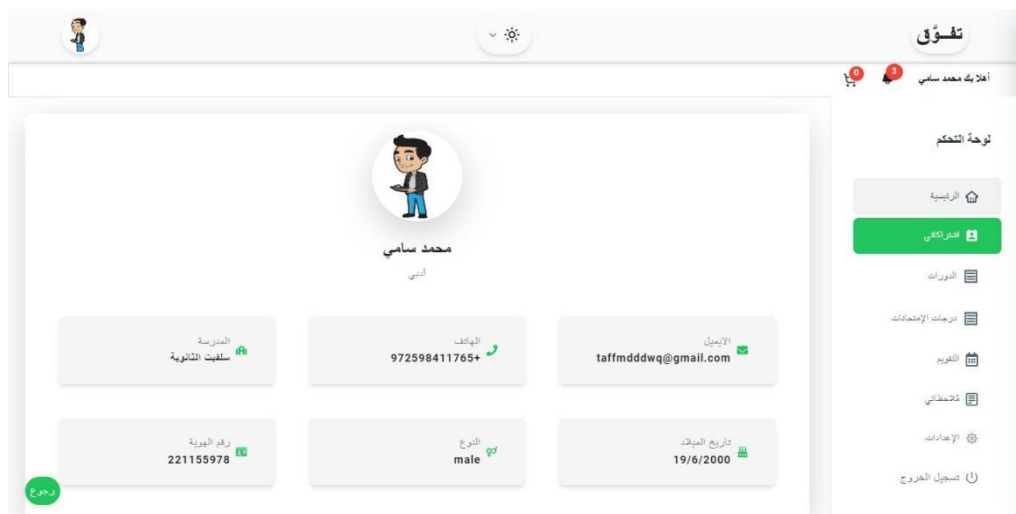


Figure 6.3.3: Student Homepage

### 6.3.4 Student Courses and payment process

The page "الدورات" Contains all the courses that can be displayed for the branch to which the student belongs. It displays all the courses with their details from the teacher, including the time and days of the course, in addition to the number of participating students. This allows the student to choose according to several factors. The student can also search according to the course or teacher's name to ensure faster access to the required course. It also shows the price of the course and if there is a discount on it from the administrator. There is the possibility of adding several courses to the shopping cart and purchasing them all at once or purchasing them individually.

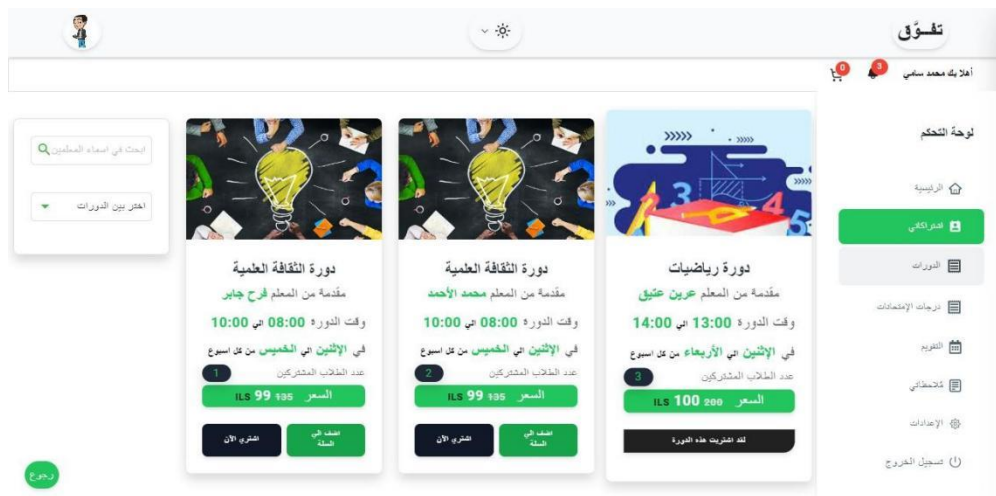


Figure 6.3.4: Courses exist in student branch

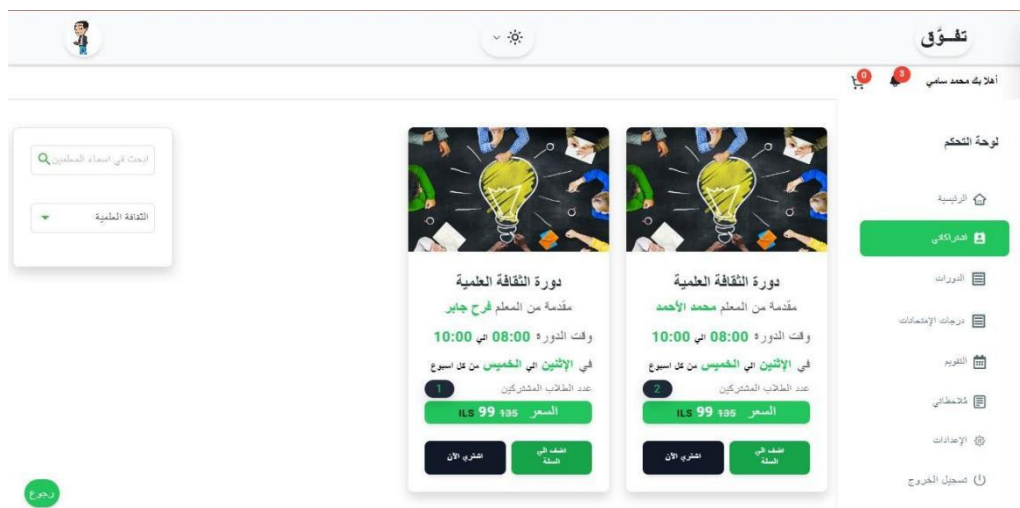


Figure 6.3.4: Search on name of course

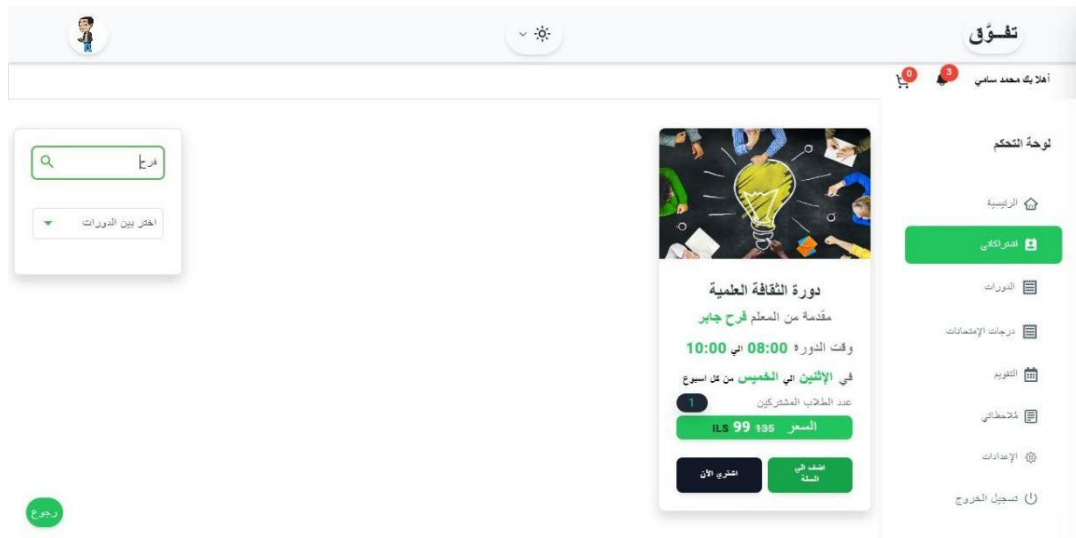


Figure 6.3.4: Search on name of teacher

When a course is added, a notification appears in the cart icon, indicating that it has been added to the shopping cart.

On the page that displays the shopping cart, the details of the courses are displayed on a table. There is the possibility of deleting all courses by pressing Reset Card or by deleting them individually through the delete icon next to the image for each course.

Below are the details of the basket, where it calculates the costs of all the selected courses and then adds an amount of 20 shekels as an additional fee to the center.



Figure 6.3.4: Add course to cart.

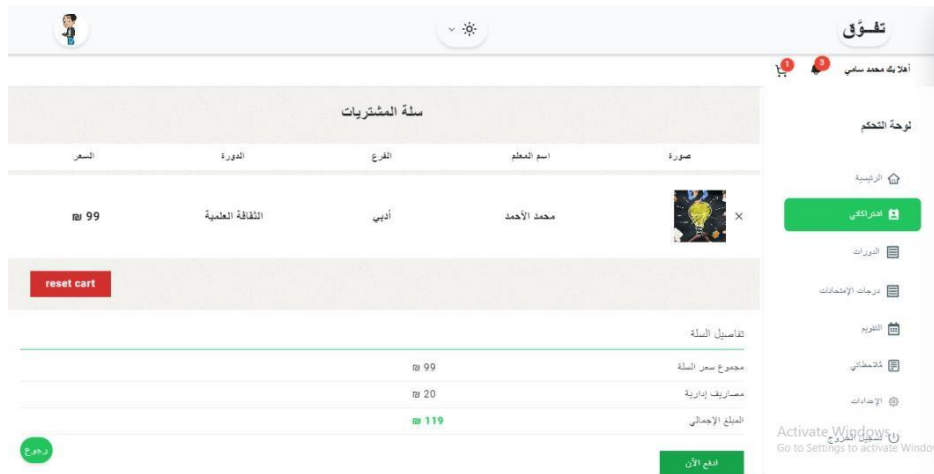


Figure 6.3.4: reset it using button reset card.

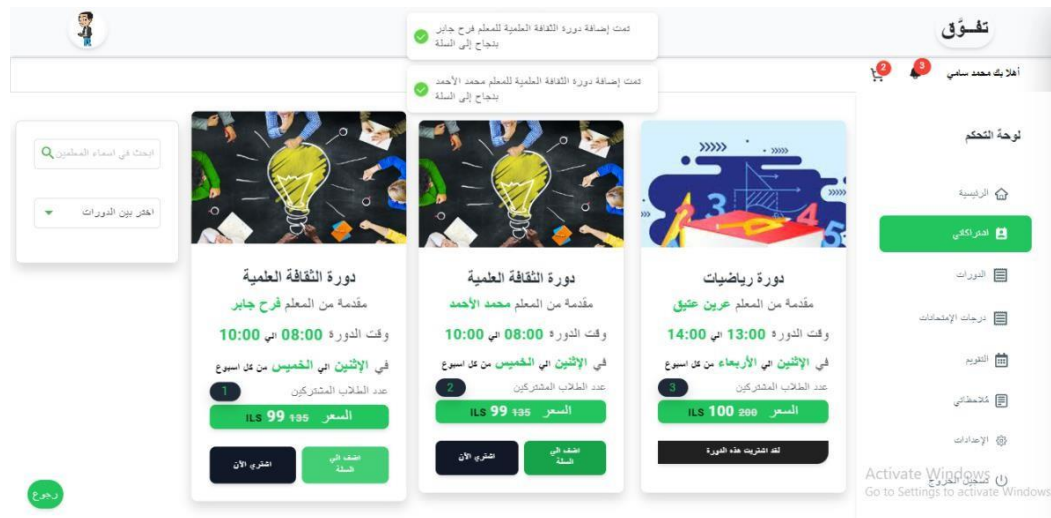


Figure 6.3.4: Add two courses to cart.

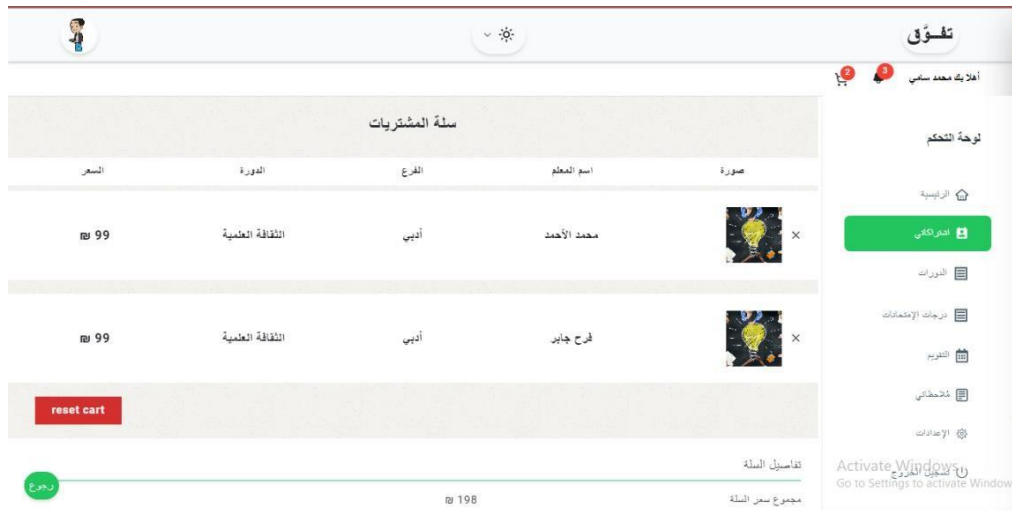


Figure 6.3.4: Cart details.

Can delete one or more course from cart

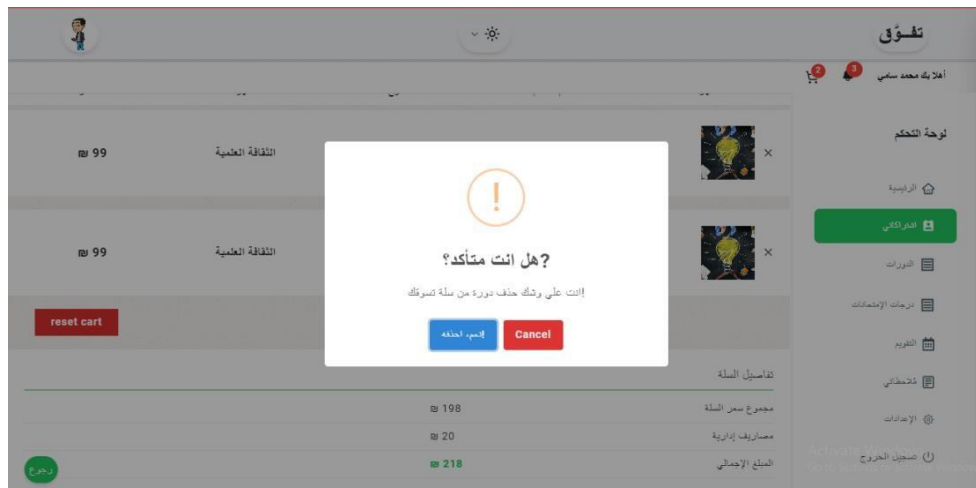


Figure 6.3.4: delete one using delete icon (1)

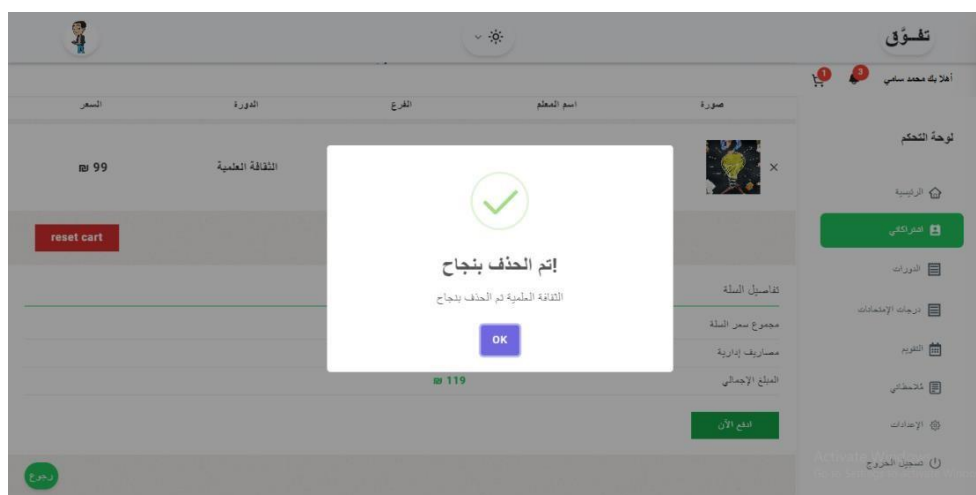


Figure 6.3.4: delete one using delete icon (2)

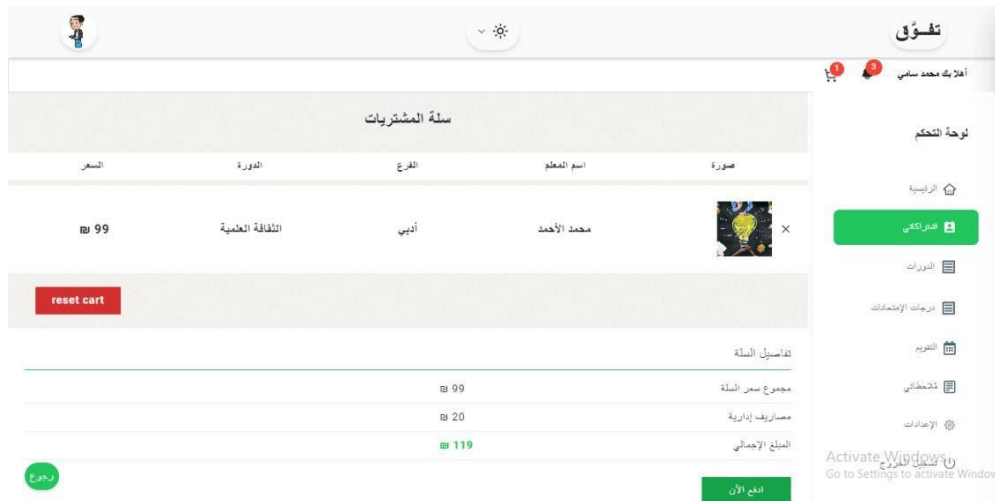


Figure 6.3.4: after deleting course.

On click on " ادفع الآن " the notification appears to tell user to wait:

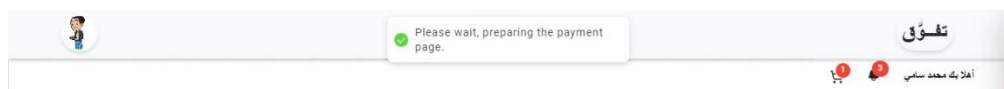


Figure 6.3.4: wait payment page.

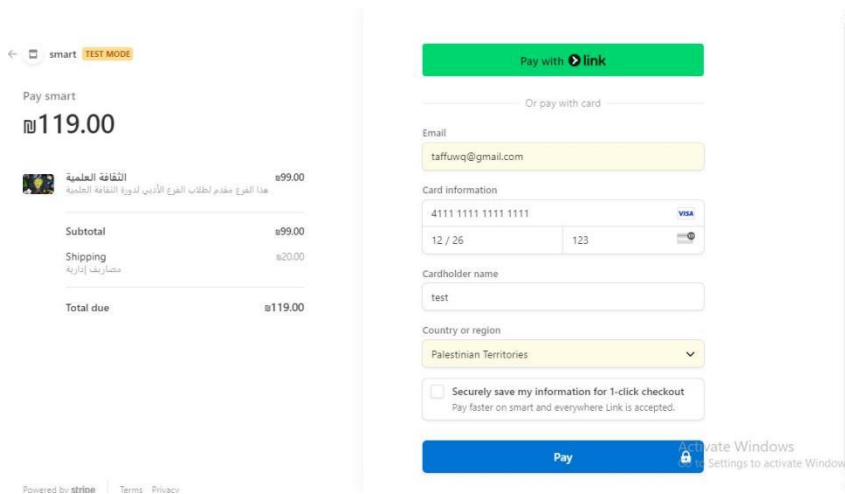
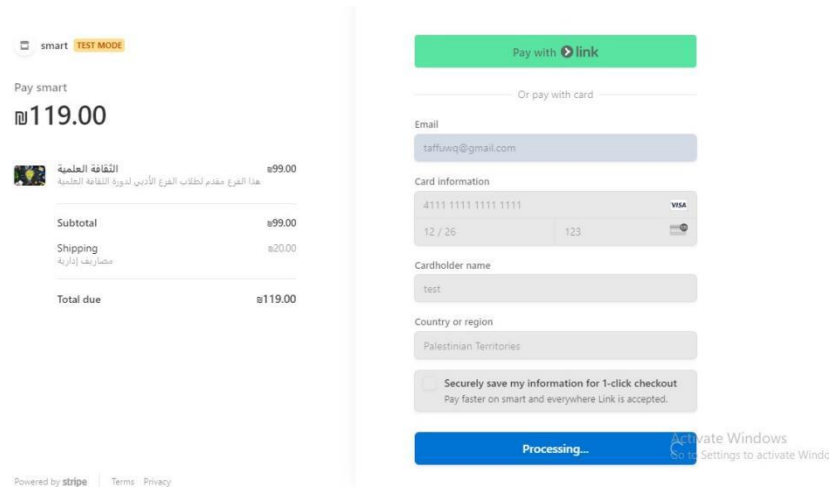
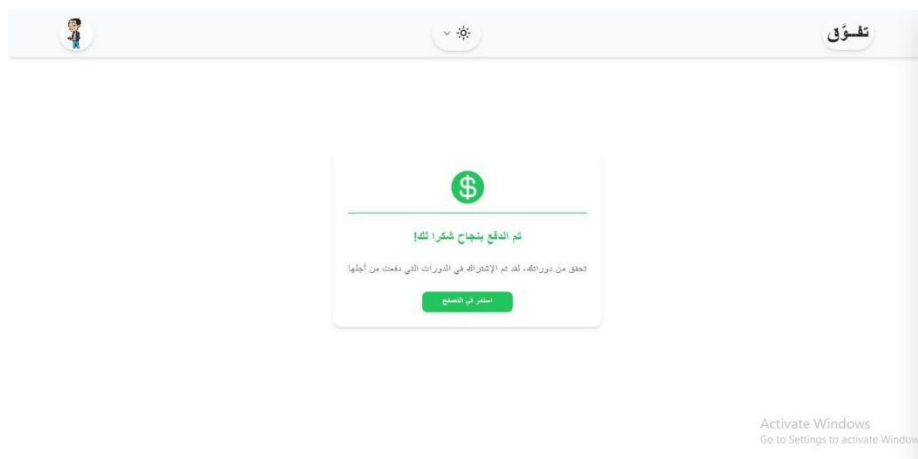


Figure 6.3.4: Payment page



**Figure 6.3.4: Payment page (after pay)**

When the payment process is completed, the student will be transferred to this page, notifying them that the payment process has been completed. He can also browse the site and enter the courses.



**Figure 6.3.4: The page to which the student is transferred when completing the payment process**

The notification list increases by one when a student purchases a course, and the content of the notification varies depending on the purchase mechanism (directly or through the card). This concerns purchases and notifications.

When a course is purchased, you will receive all notifications about what the teacher is doing for you, whether it is an exam or an uploaded lecture, and so on.

The notification can be deleted individually or by pressing the top button “تمييز الكل كمقروء” or marking all as read “حذف جميع الإشعارات”.



Figure 6.3.4: Student notification

After successful payment:

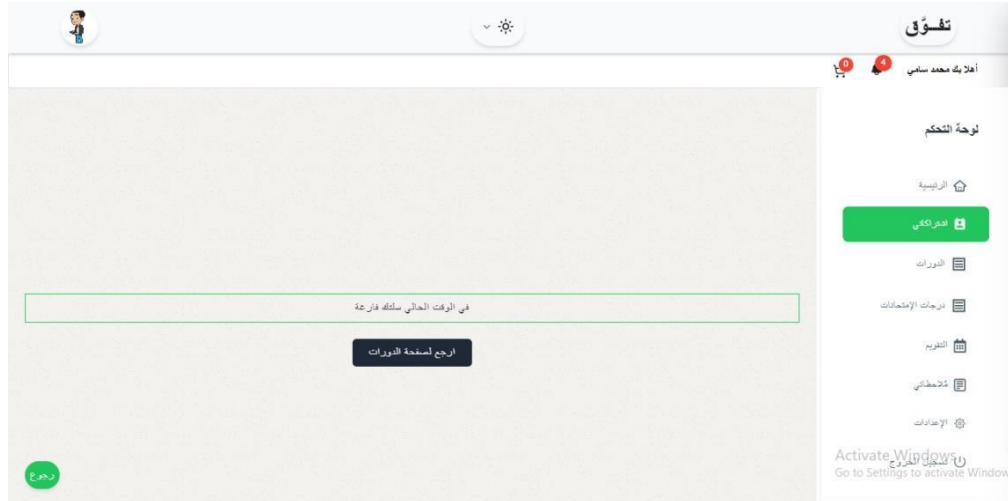


Figure 6.3.4: card will empty after payment process.

”The status of course card change from “اضف الى السلة / اشترى الآن” to “اشتريت هذه الدورة”

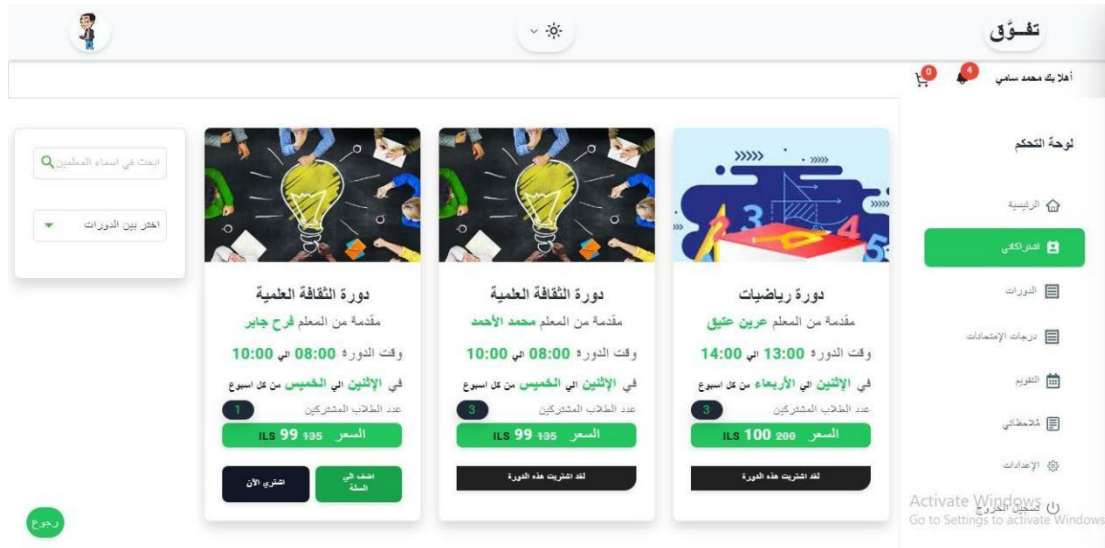


Figure 6.3.4: change status of course card after payment.

### 6.3.5 Student Calendar

The calendar is empty, and once you purchase our courses, the tasks in the courses appear automatically, from the start and end dates to the name of the assignment or exam, as well as the course instructor. The calendar is practical and colorful and makes it easy for students to control their time in proportion to the required tasks.

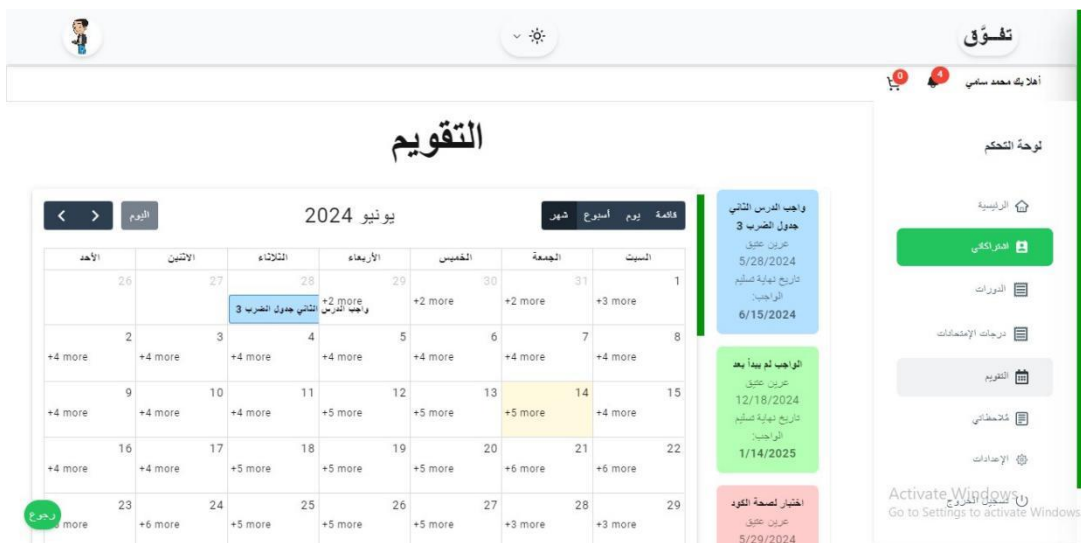


Figure 6.3.5: calendar after student join course (1).

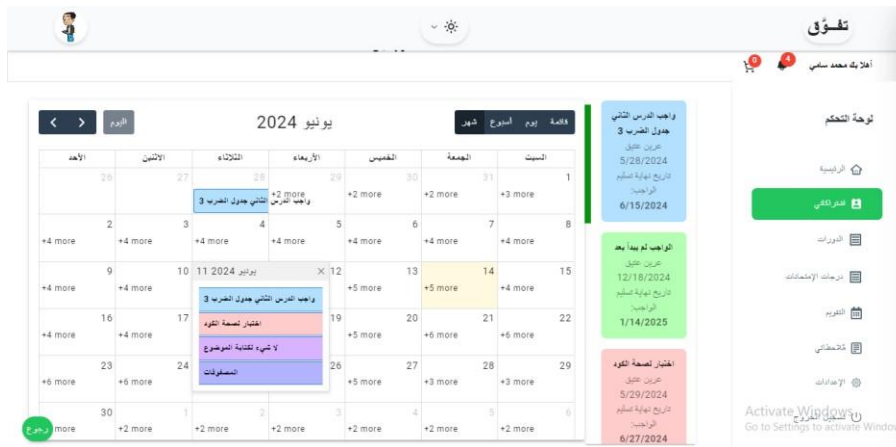


Figure 6.3.5: calendar after student join course (2 - details).



Figure 6.3.5: calendar after student join course (3 - details).

### 6.3.6 Student Notes

This page is intended for the student's notes, where he can write a note by choosing a title, details, and date. The date has been added for the purpose of research. On the right of the screen, you can notice that the student can search through the content of the note or search through all notes within a specific period.

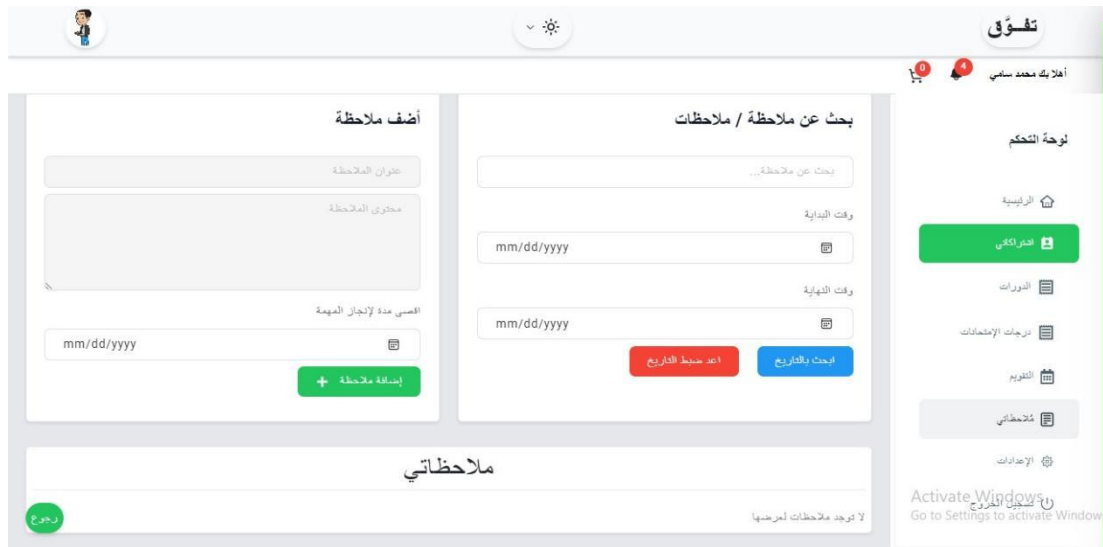


Figure 6.3.6: Notes page.



Figure 6.3.6: add Note.

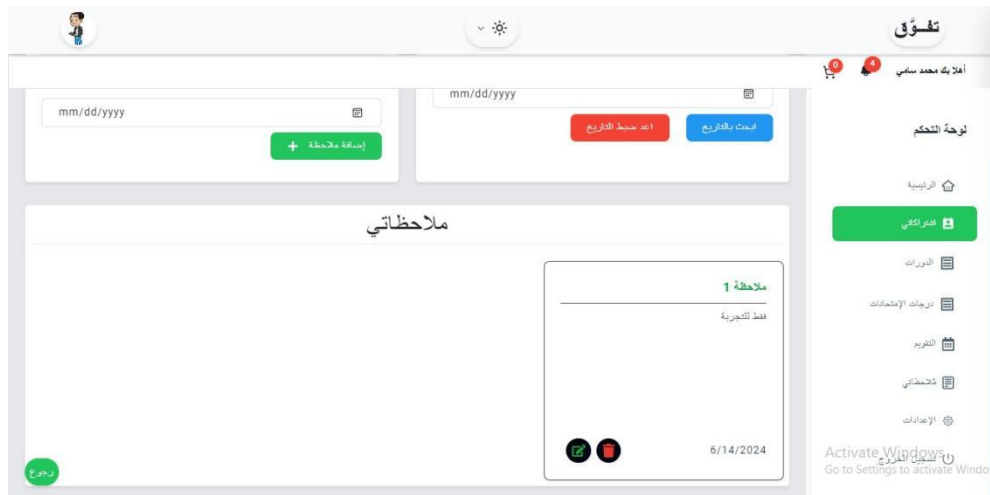


Figure 6.3.6: after add note.

Also, the student can modify it:

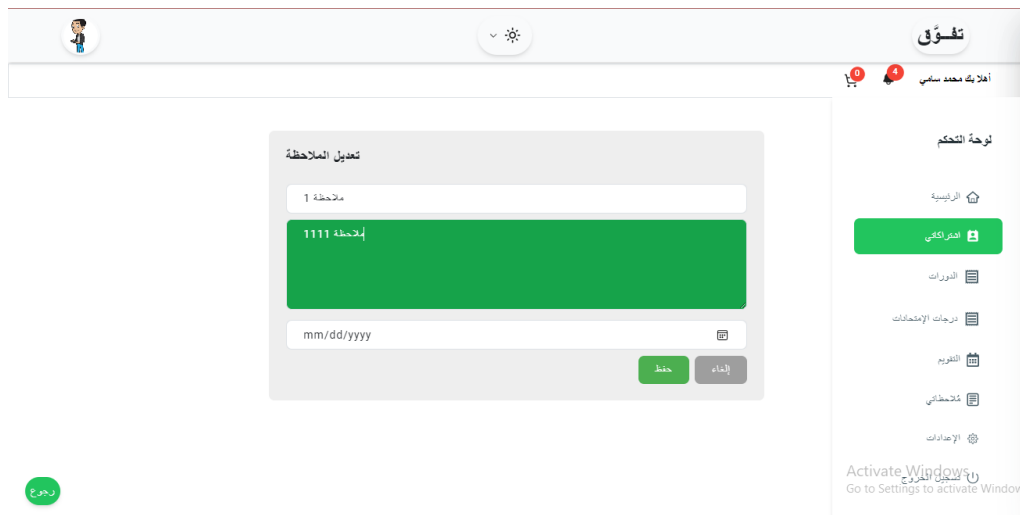


Figure 6.3.6: edit note.

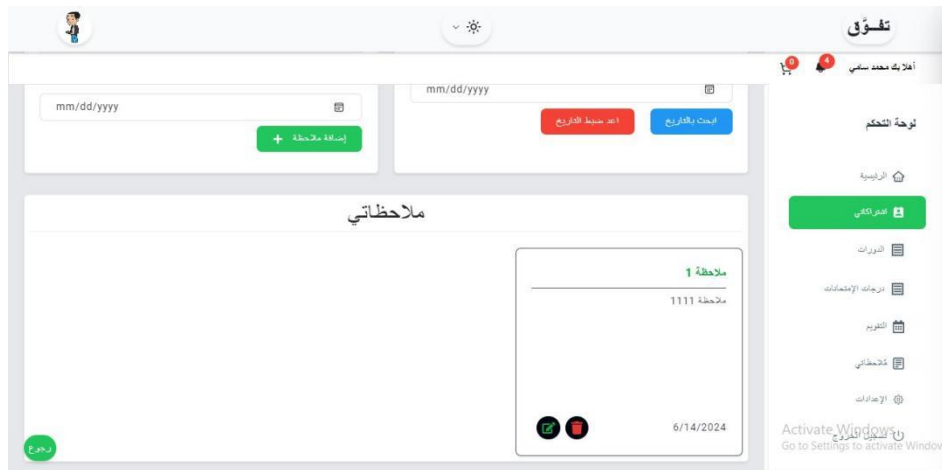


Figure 6.3.6: after edit note.

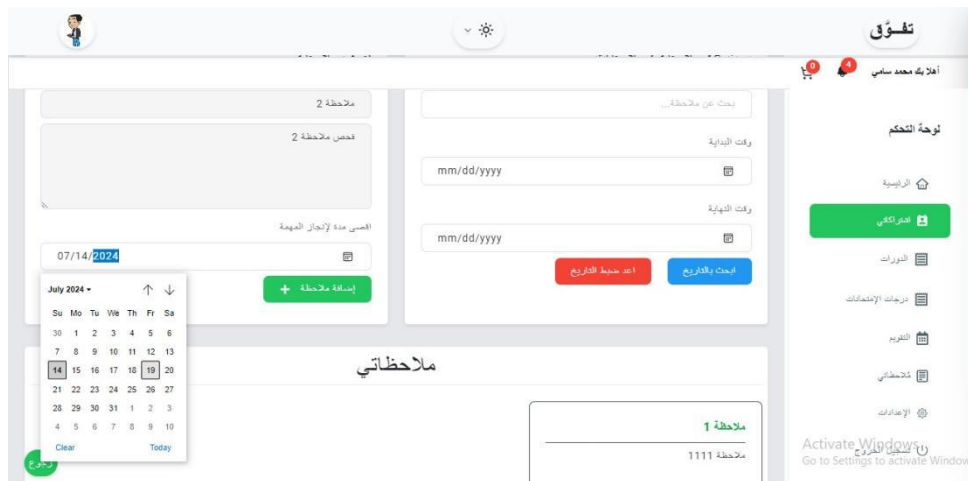


Figure 6.3.6: add second note.

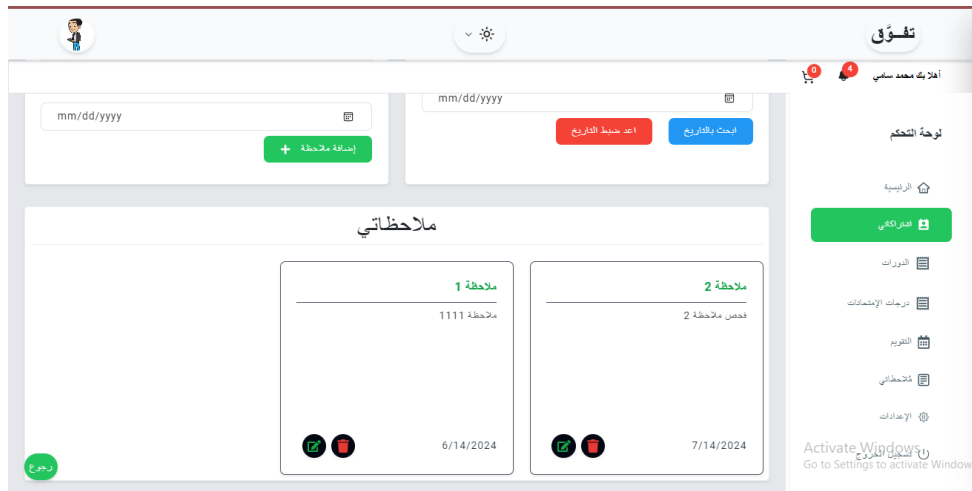


Figure 6.3.6: After adding second note.

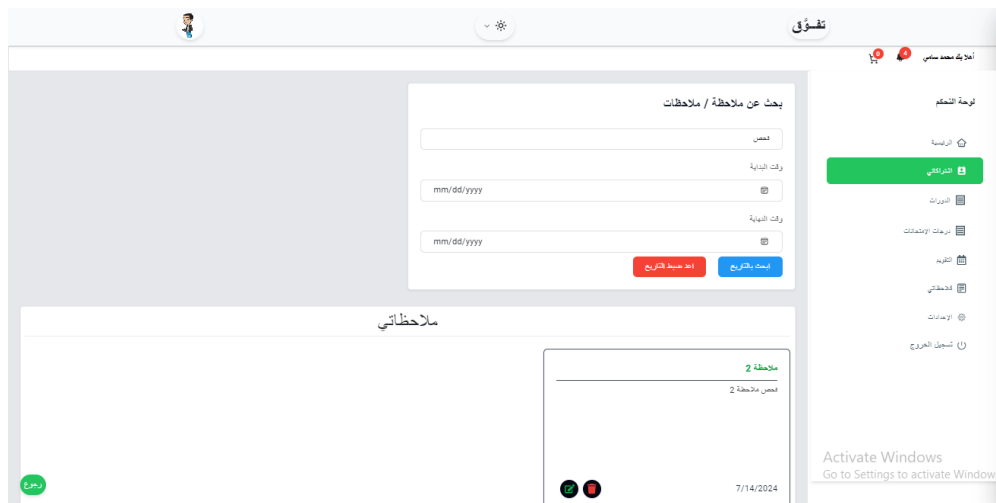


Figure 6.3.6: search by note name.

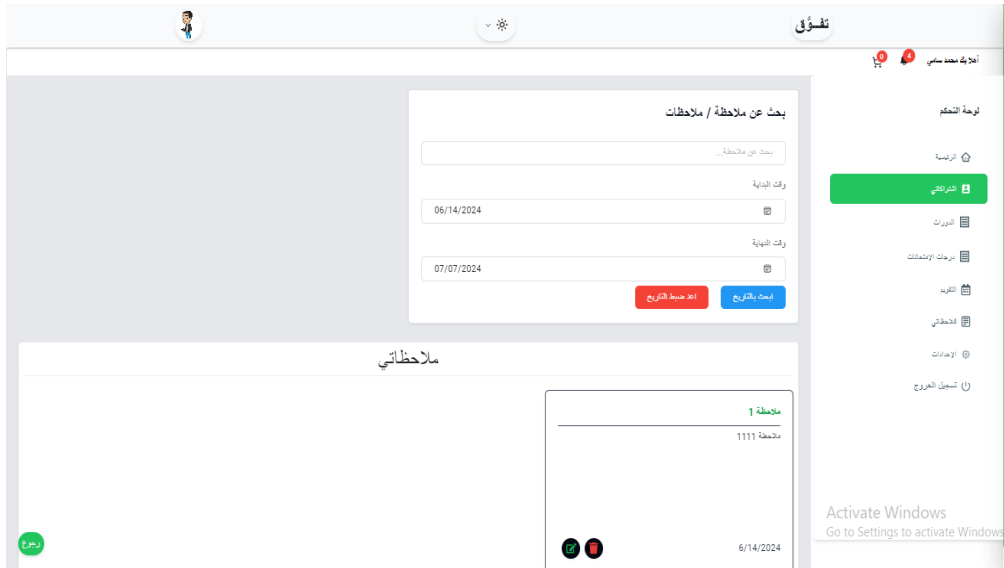


Figure 6.3.6: search by notes period.

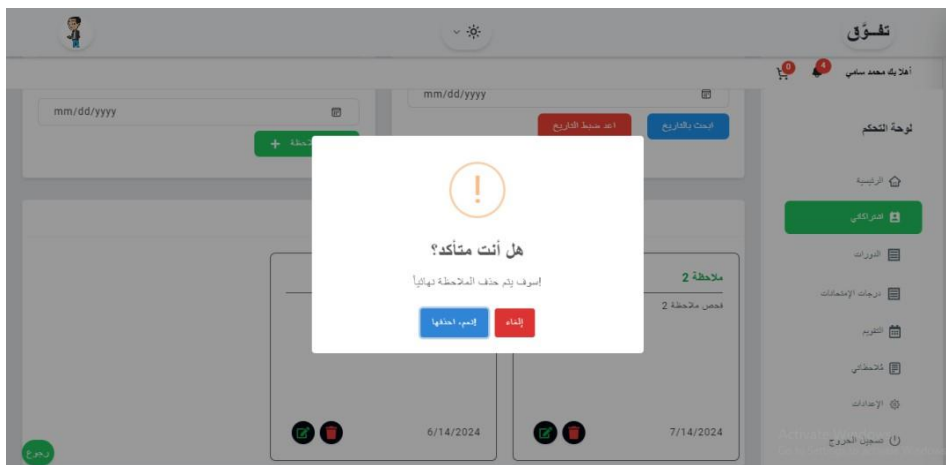


Figure 6.3.6: delete a note (1)

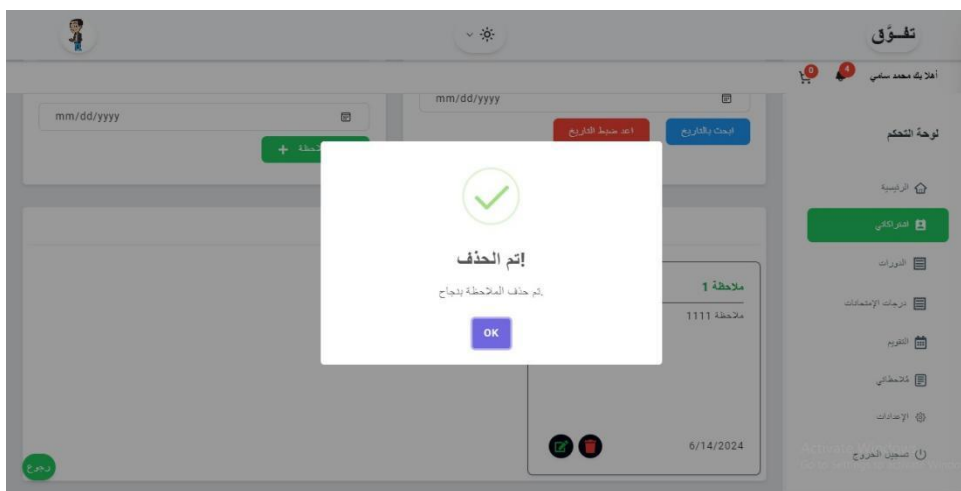


Figure 6.3.6: delete a note (2)

### 6.3.7 Courses in which the student is registered

When you click on “اشتر اكاتي” all the courses that the student has subscribed to appear, and he can enter the course by clicking on them.

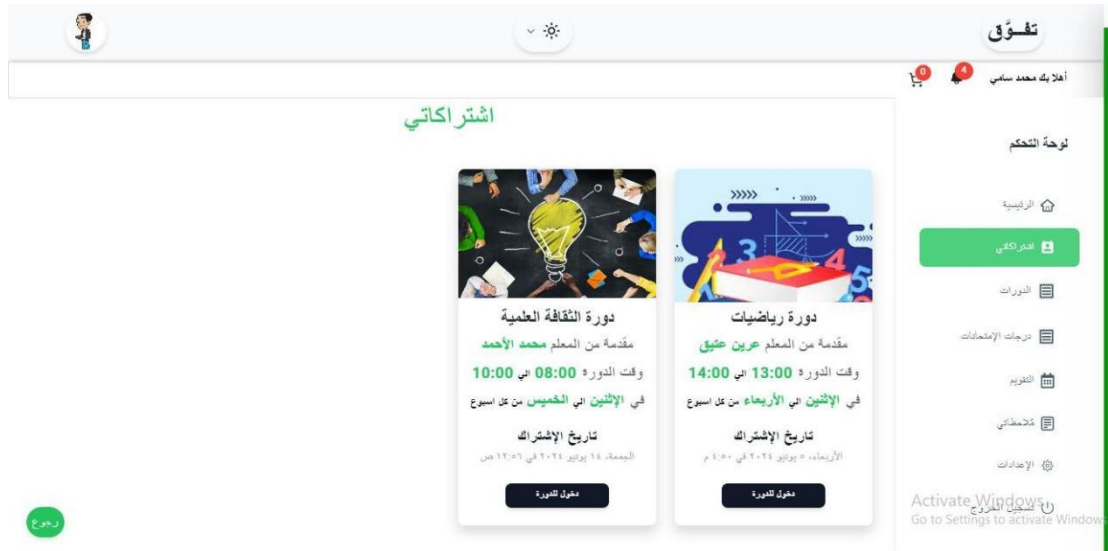


Figure 6.3.7: Courses in which the student is registered

### 6.3.8 Study for a specific course

When you press "دخول الدورة" Special in "دورة رياضيات" The course control panel opens with a sidebar containing information about the course itself, and the main page contains details about the course instructor.

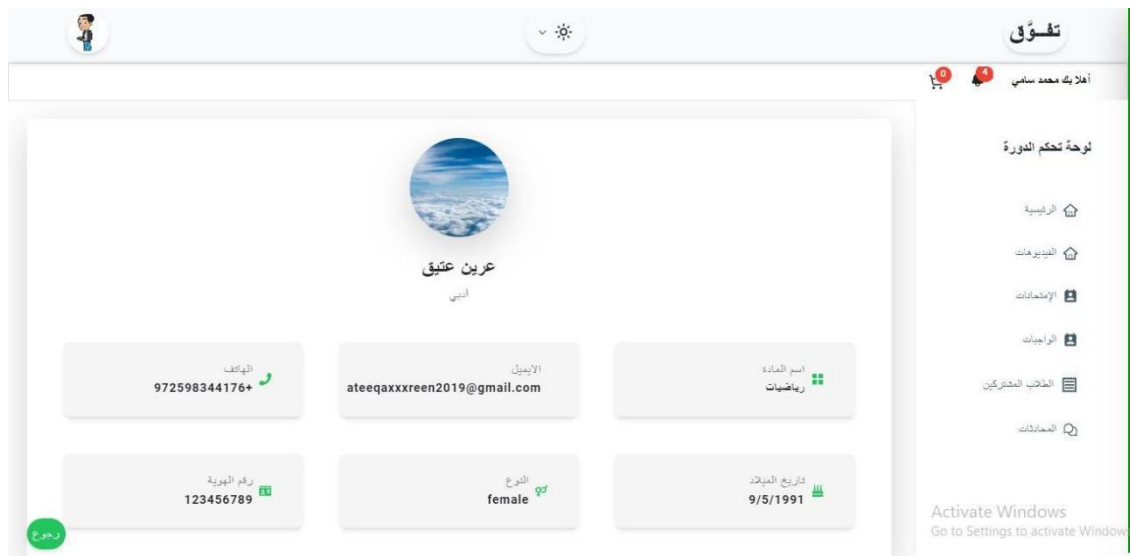


Figure 6.3.8: Course Homepage.

### 6.3.8.1 lectures.

When the student clicks on “الفيديوهات” in the sidebar, all the videos uploaded by the teacher are displayed, accompanied by the name of the lecture and a description of it, in addition to attachments (one or more) that provide theoretical information that the student will benefit from.

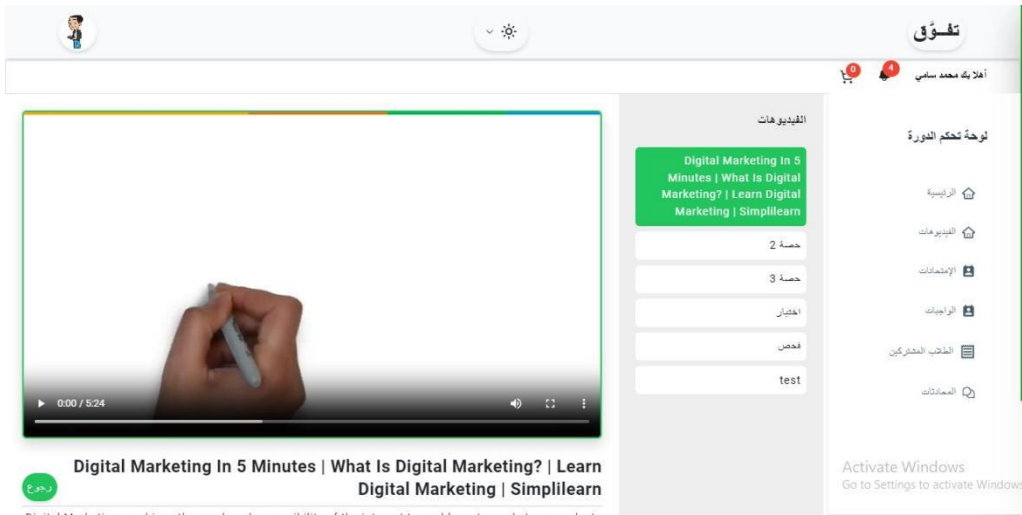


Figure 6.3.8.1: Show the first lecture

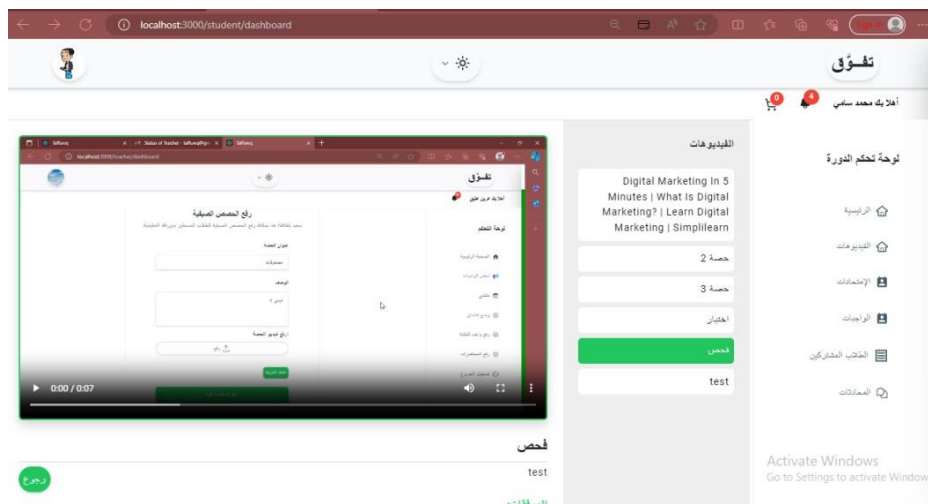


Figure 6.3.8.1: View video lecture and attached files (1)

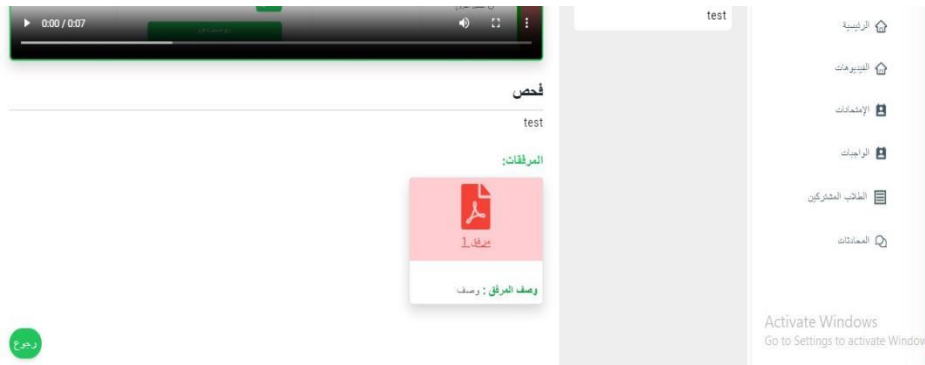


Figure 6.3.8.1: View video lecture and attached files (2)

Teacher uploaded new one:

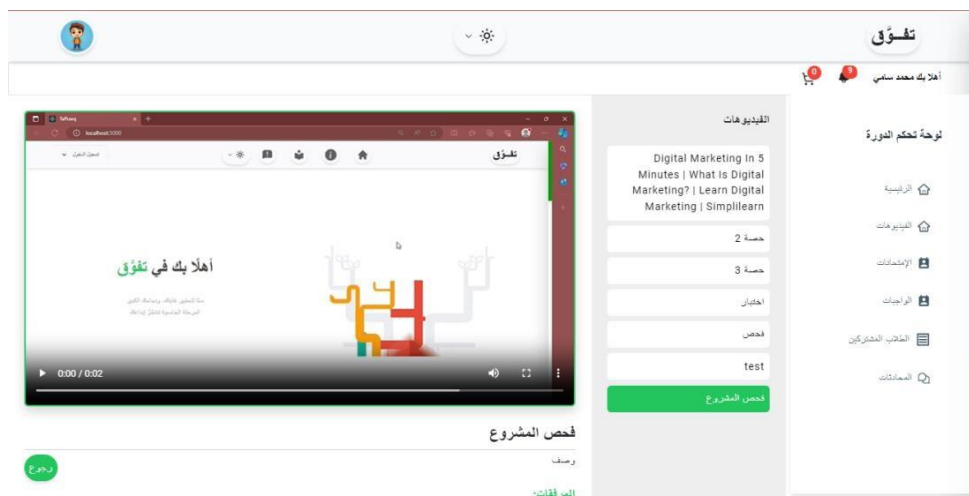


Figure 6.3.8.1: After teacher adds new lecture.

### 6.3.8.2 Homeworks.

when the student clicks on "الواجبات", all assignments are displayed (their name and description) as a list, and when clicked on any of them, its title and a description of its content appear for clarification, and the assignment file can be an image or a file, along with the start and end dates of the assignment.

There are three states about assignment methods assignment methods:

If the assignment has not started, a note will appear to explain it.

If the assignment date begins but the end date does not come, the student is allowed to upload a file for the solution.

When the student uploads the file and it is stored in the system, a note appears that it has been sent.

If the deadline expires without the student submitting his file, a note will also appear, and the student cannot submit.

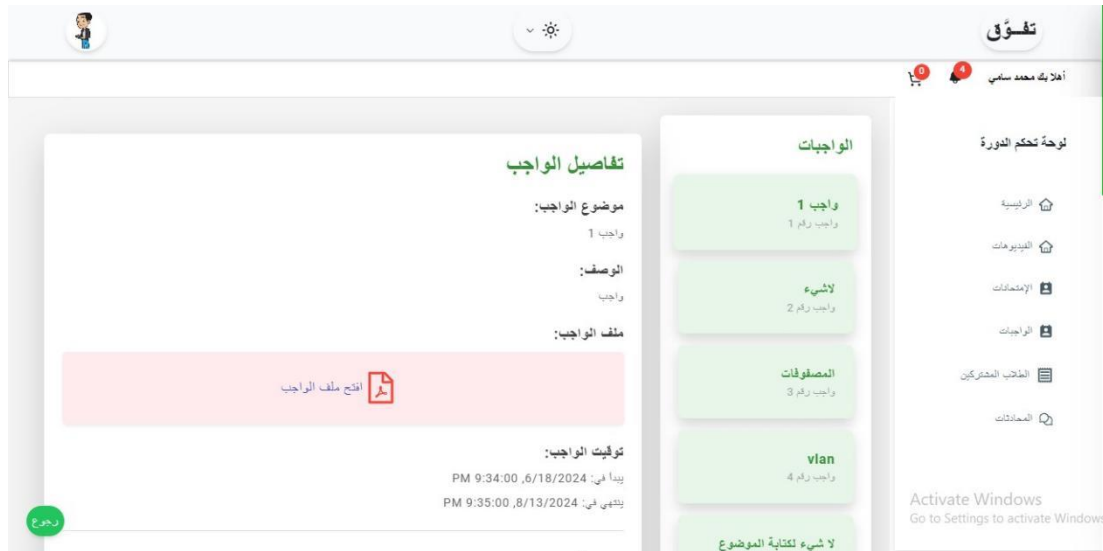


Figure 6.3.8.2: The first case the task did not start (1)

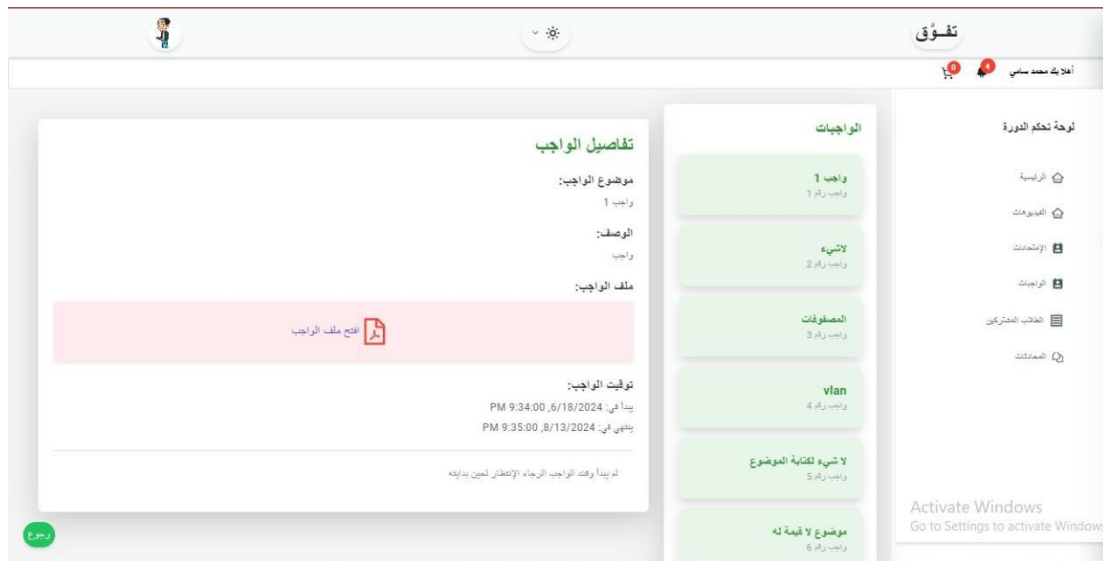


Figure 6.3.8.2: The first case the task did not start (2)

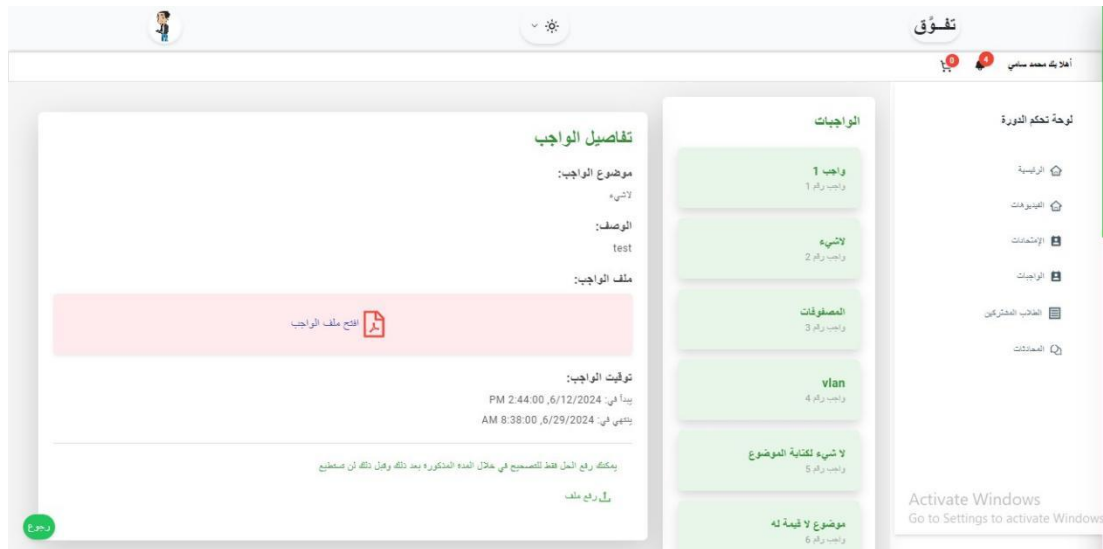


Figure 6.3.8.2: The second case is that the student can upload his file as the allowed time has not expired (1)

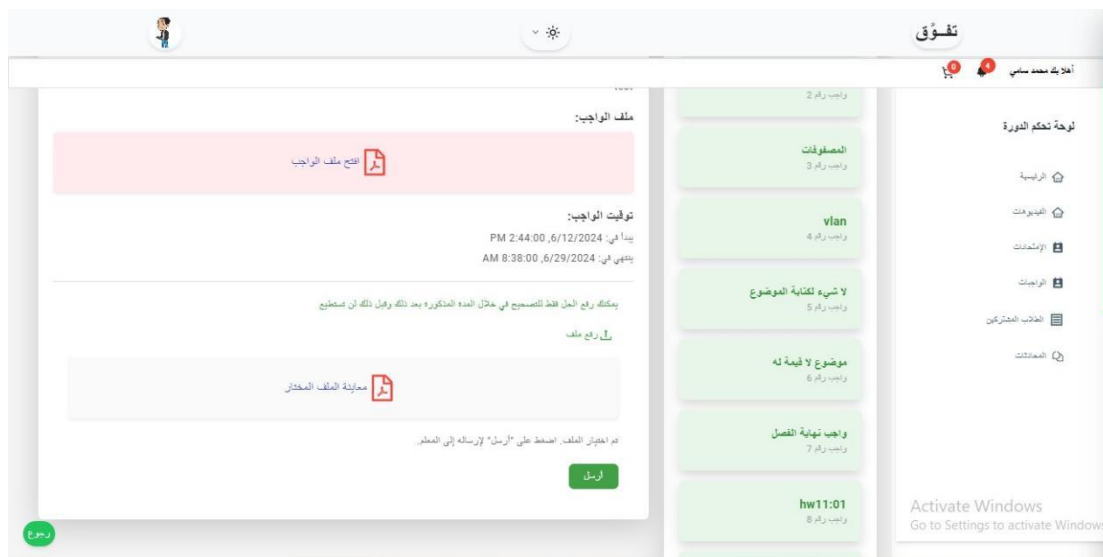


Figure 6.3.8.2: The second case is that the student can upload his file as the allowed time has not expired (2)

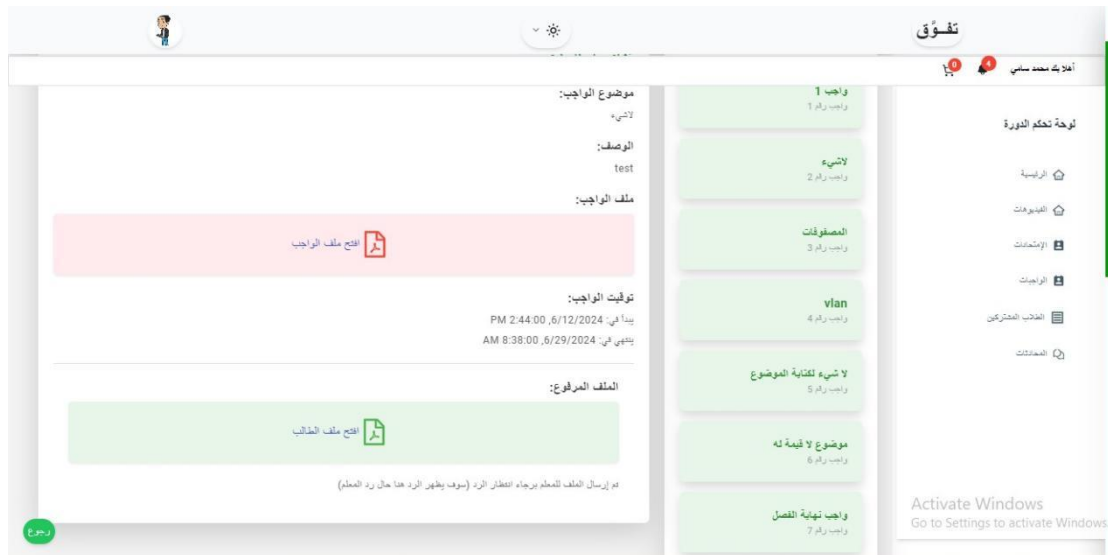


Figure 6.3.8.2: Note to the student that the file has been uploaded

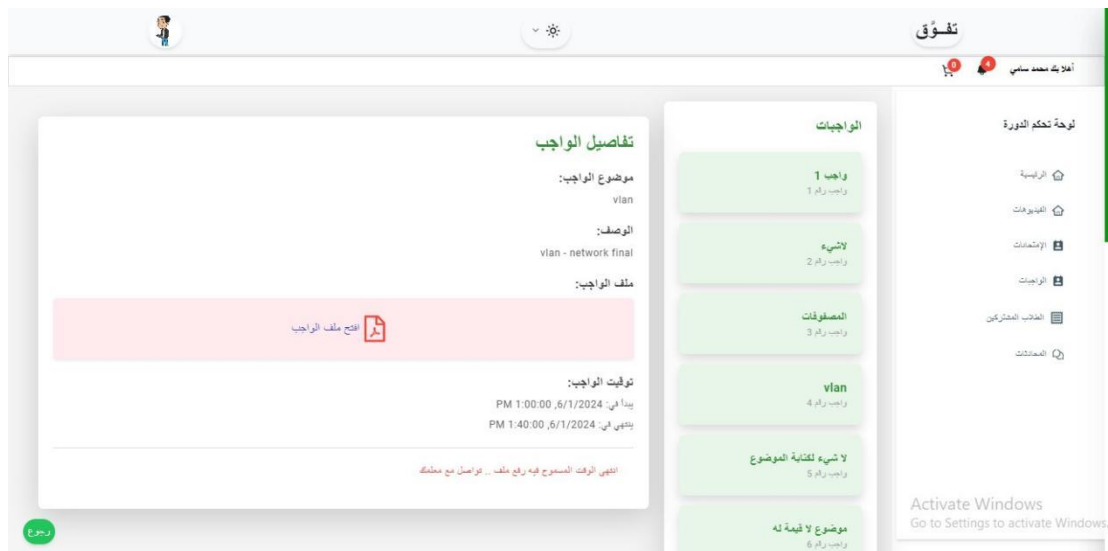


Figure 6.3.8.2: The last case is that the student did not submit the assignment within the permitted period.

After teacher uploaded new one:

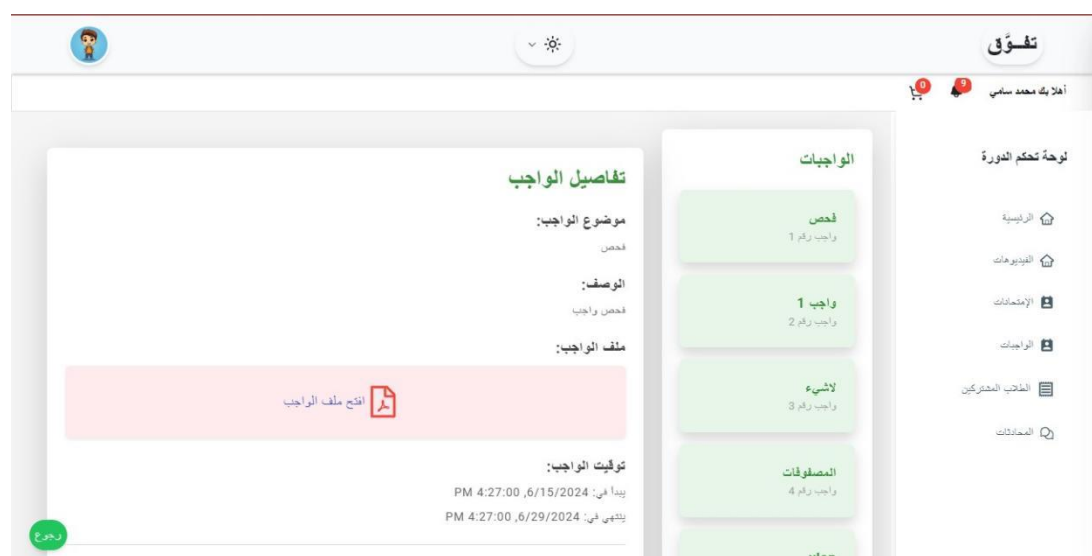


Figure 6.3.8.2: Teacher adds new homework, and it appears at top of list.

### 6.3.8.3 Exams.

When you click on “المتحانات” the record of the exams that were set for the student appears, whether he took them or not. The details of the exam announcement appear from the date of its creation to the period of submission, as well as the important notes that the student must adhere to. There are rules for the exam. If the time expires, the student is not allowed to enter, and his grade is zero, which is shown to him. If he misses the exam, a note will also appear and indicate that his grade is zero. Also, if he has a test and the time to submit the test has expired, his grade will be shown to him, but if the time has not expired, the “بدء المتحان” box will remain visible, but he will not be able to enter.

In this image, there is an exam, and the student opens it at the specified time.

It has a timer to see how much time passes during the test. In addition, once the test is completed, the questions and details about them are shown to him so that he knows his performance, grade, and answer to each question, in addition to the correct answer.

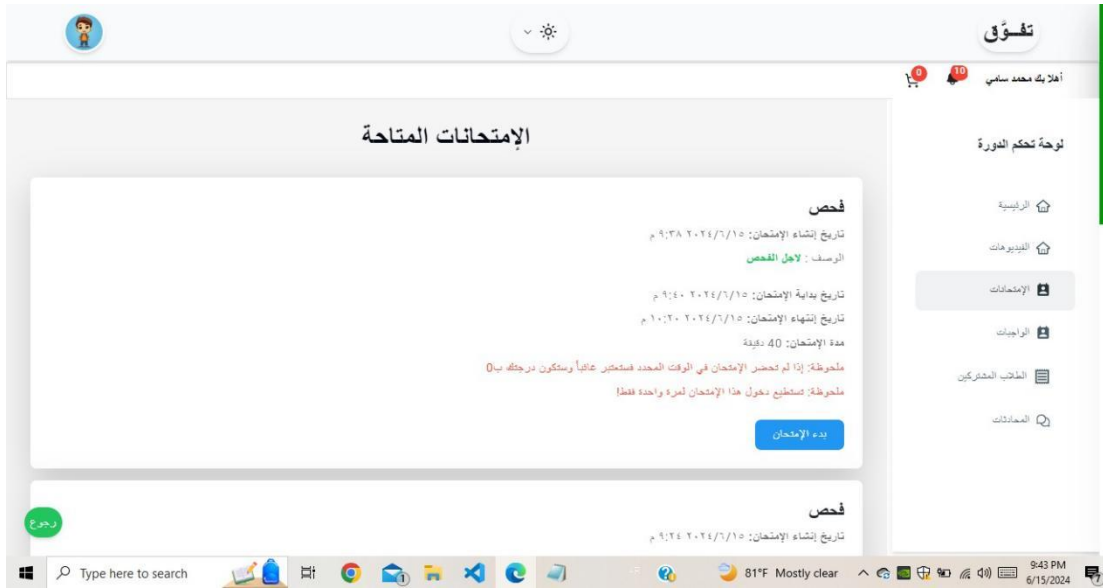


Figure 6.3.8.3: There is an exam available, and the student can start with it

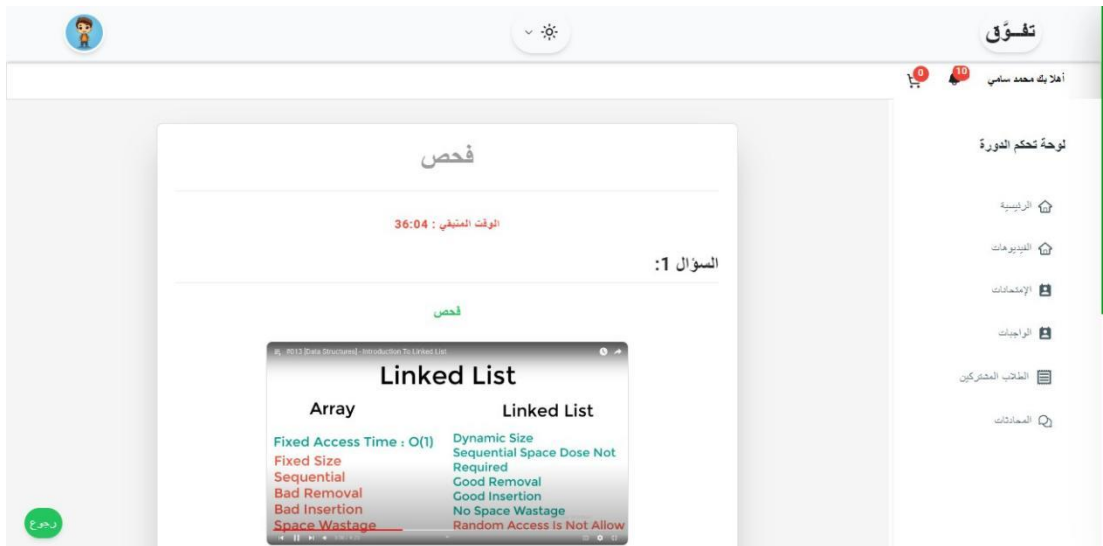


Figure 6.3.8.3: The student started the exam, and this is the first question

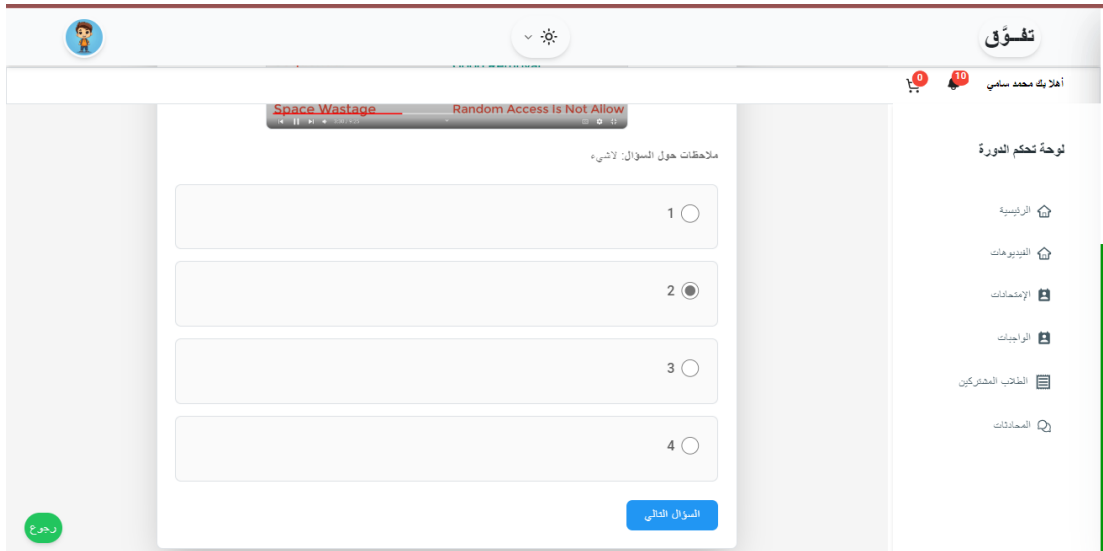


Figure 6.3.8.3: Options for the first question

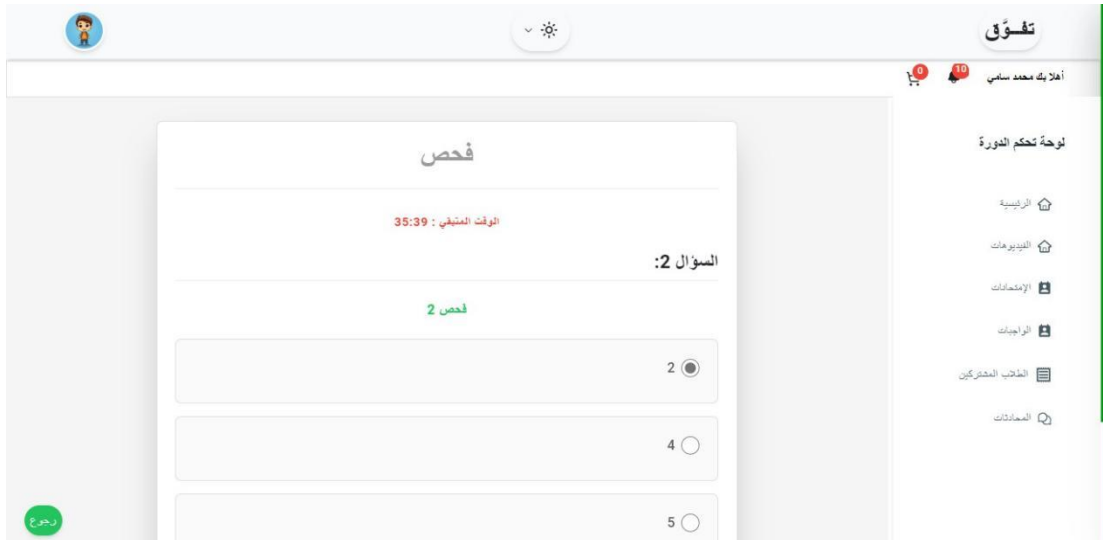


Figure 6.3.8.3: The second question and its options (1)

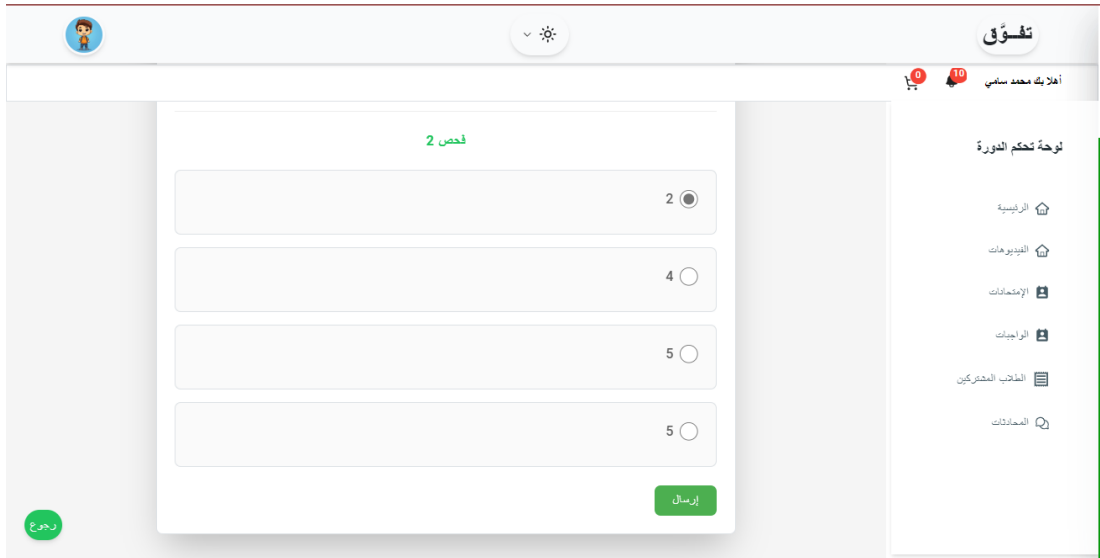


Figure 6.3.8.3: The second question and its options (2)

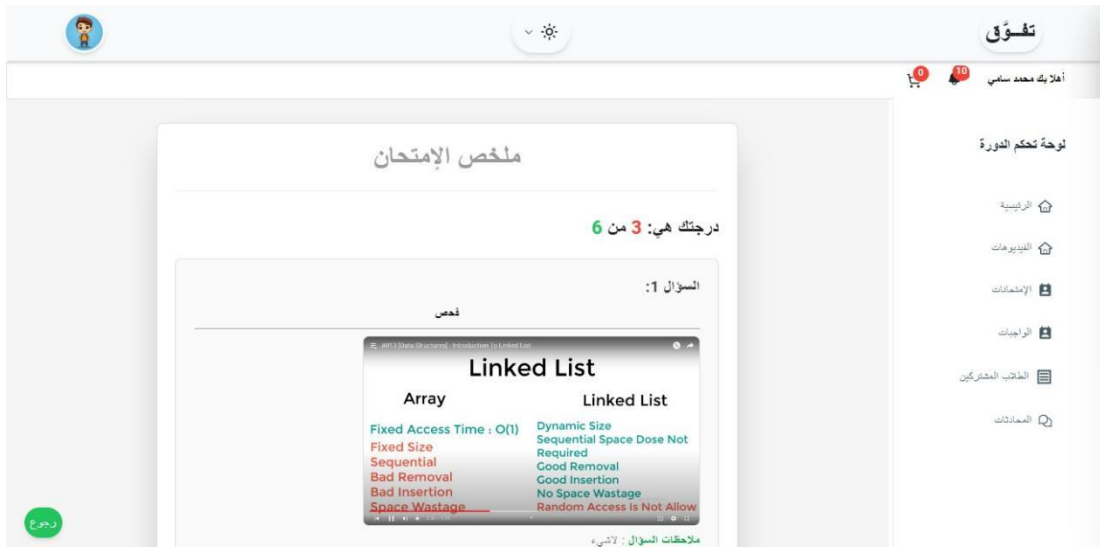


Figure 6.3.8.3: The exam is over, and this is a summary of the student's performance and grade (1)

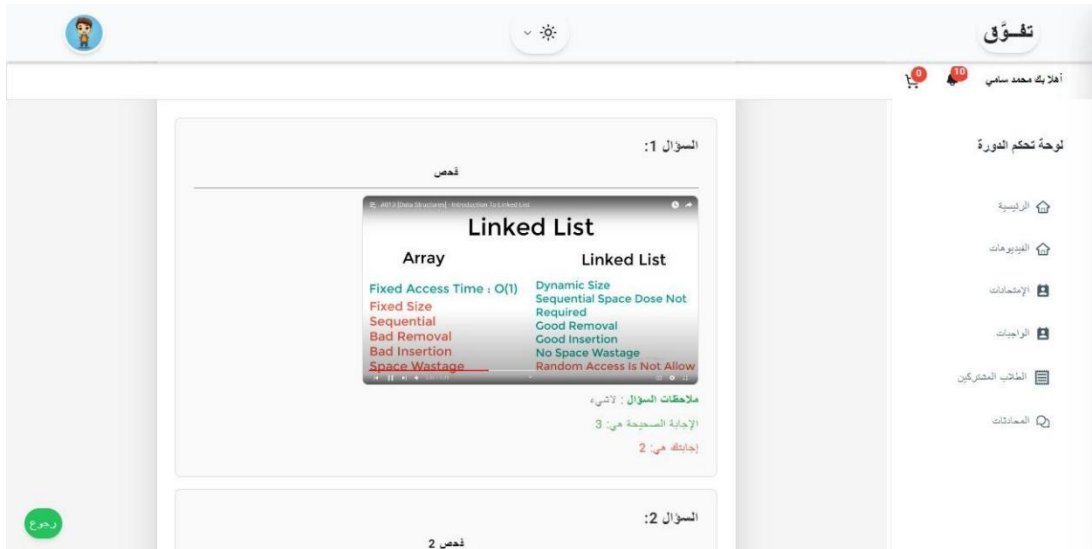


Figure 6.3.8.3: The exam is over, and this is a summary of the student's performance and grade (2)

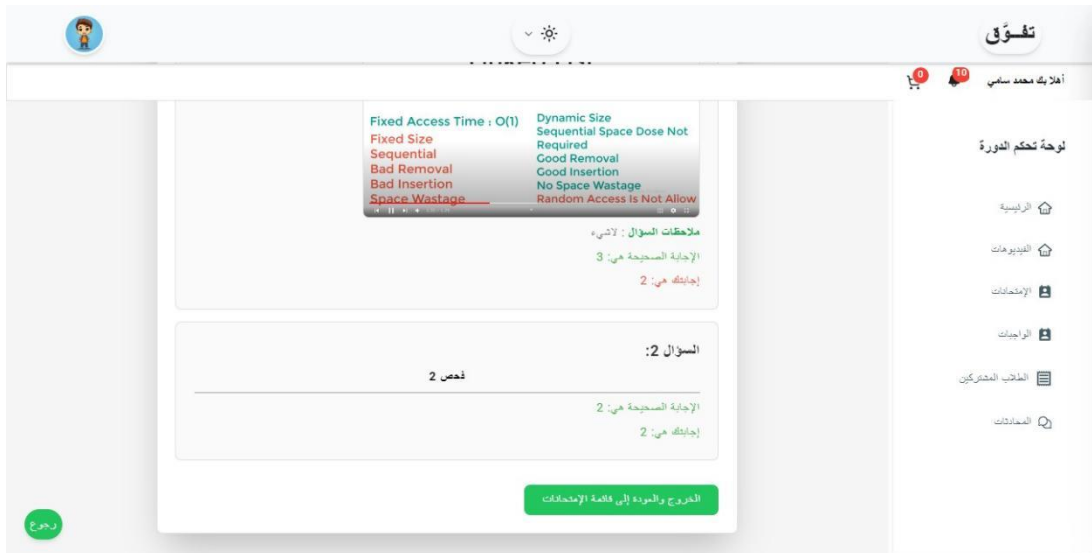


Figure 6.3.8.3: The exam is over, and this is a summary of the student's performance and grade (3)

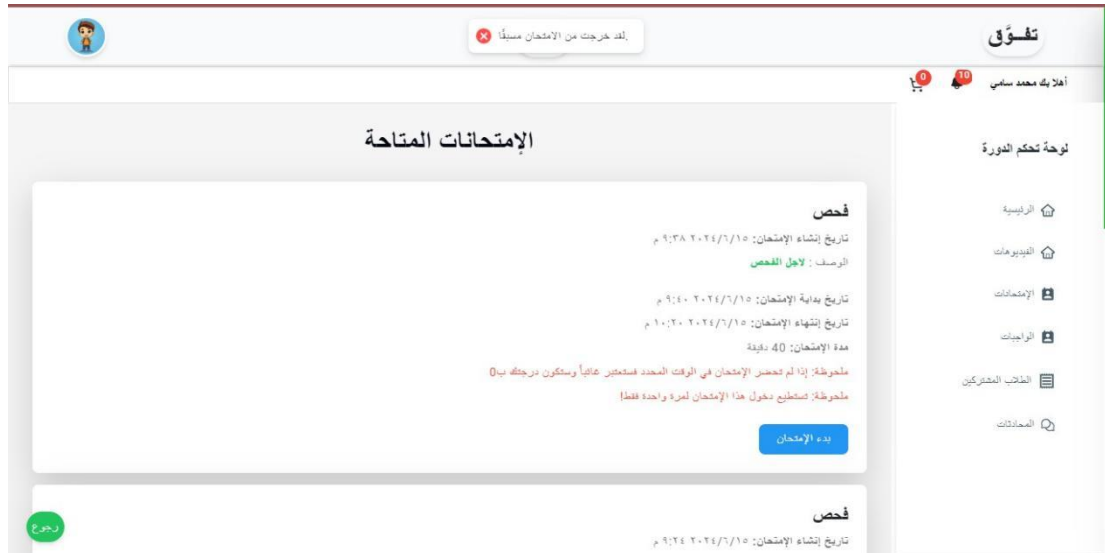


Figure 6.3.8.3: Trying to take the exam again (prohibited)

After the exam time ends, the button for the start of the exam changes and the grade appears.

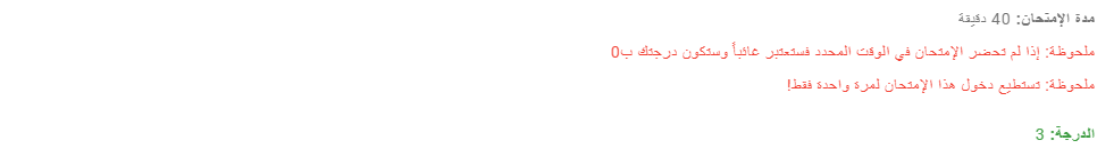


Figure 6.3.8.3: After the exam time ends



Figure 6.3.8.3: In case of student's absence



Figure 6.3.8.3: In case of the student got a zero

When the student returns to the general home page that is not specific to a specific course and clicks on “درجات المتحان”, an exam schedule will appear for all exams submitted by the student and all teachers he attended to their courses, with general details of the exam.

عنوان الامتحان	تاريخ البداية	مدة الامتحان	اسم المعلم	الدرجة	تاريخ الحضور
فحص قدرات	16:20 2024-06-15	90 دقيقة	عزير عزيق	0	16:24 2024-06-15
فحص	02:40 2024-06-16	40 دقيقة	عزير عزيق	3	02:43 2024-06-16

Figure 6.3.8.3: example of exam grades table.

#### 6.3.8.4 Displaying the students participating in the same course and the possibility of communicating with them

When you press "الطلاب المشتركين" The course instructor and students enrolled in the course are displayed, and when you click on “الشخصية الصفحة” for one of student display the system move to chat to talk to the student.

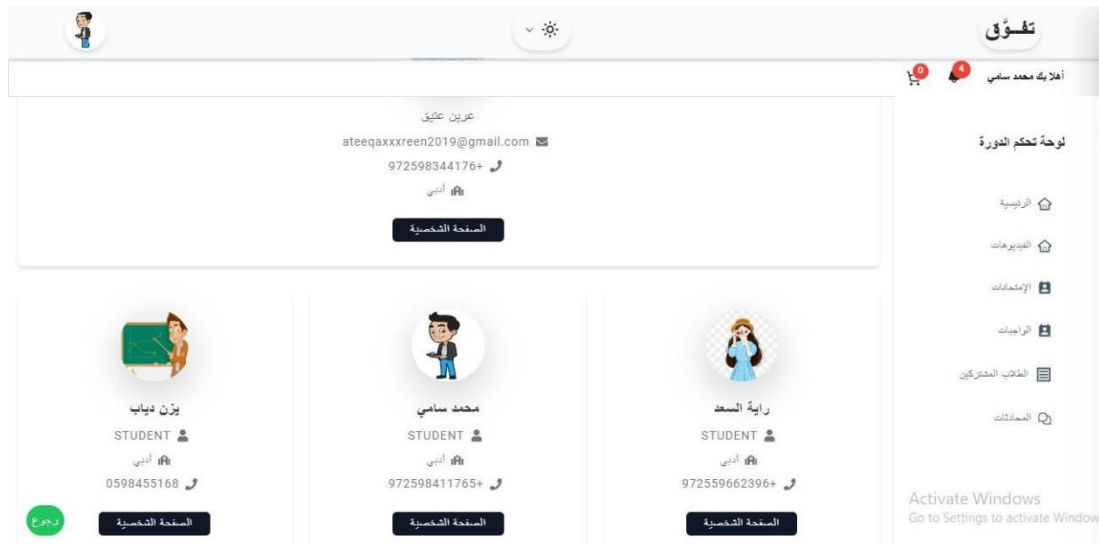


Figure 6.3.8.4: View course instructor and colleagues

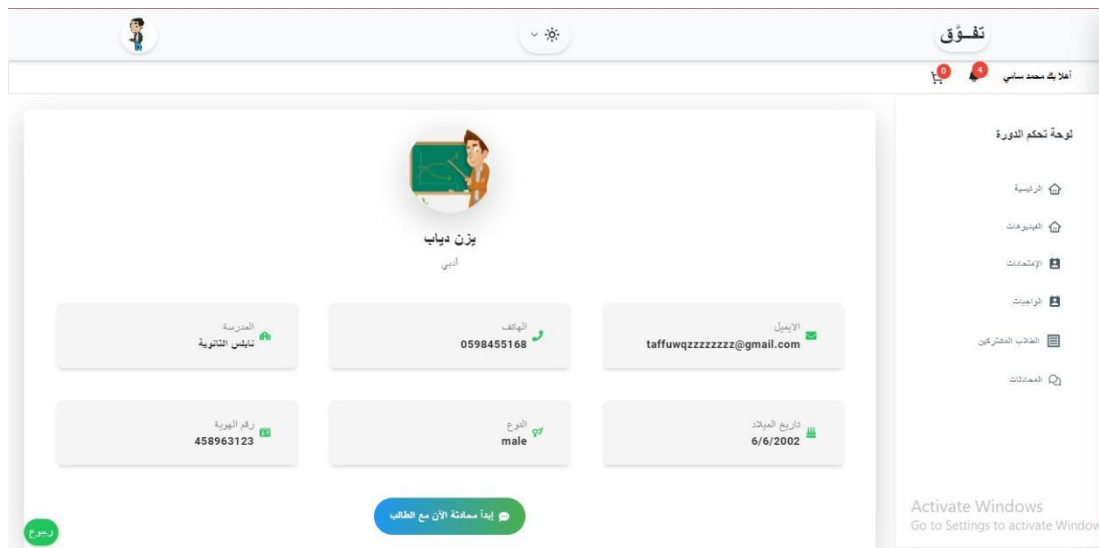


Figure 6.3.8.4: View a student's profile and the ability to talk to him directly

This is a real-time chat for communicating and exchanging information, where text, pictures, or videos can be sent.

The sidebar contains everyone who has been in contact with the account owner and shows the last message and the person's name and photo.

When the student is present on the site, his status changes to active.

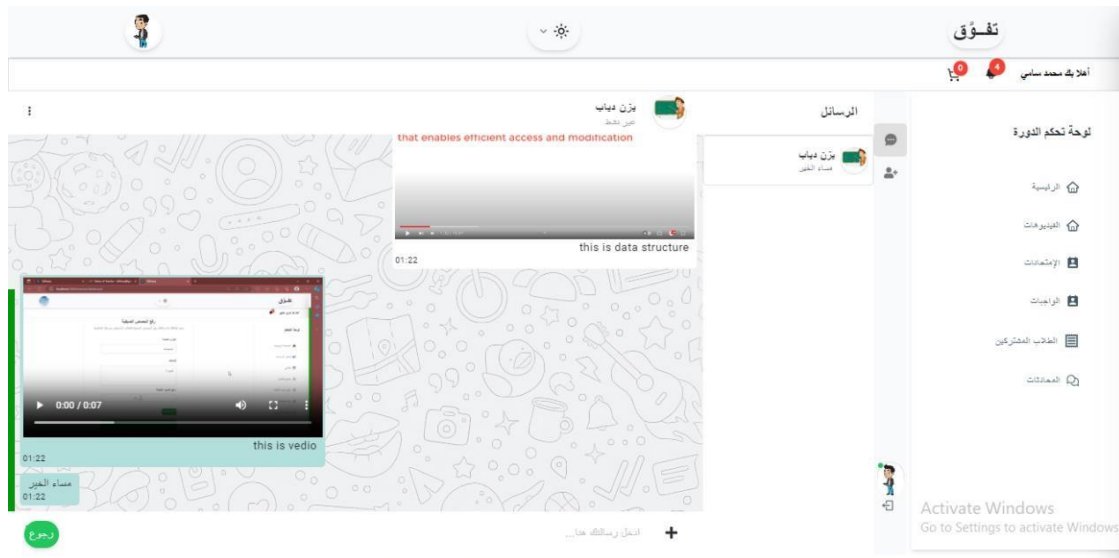


Figure 6.3.8.4: chat with yazan.

The student chooses “صورة” then when he chooses an image from his desktop, it is uploaded, and then the system displays it on the screen with a delete icon if he chooses to undo sending it. It can be sent alone or with text.

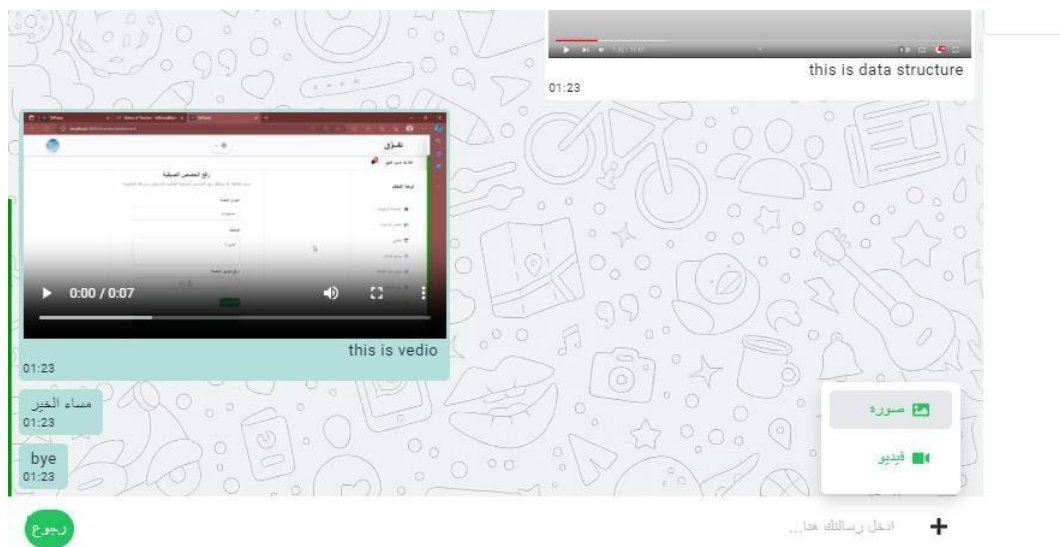


Figure 6.3.8.4: chat with yazan send text message them image.



Figure 6.3.8.4: Wait for the image to upload

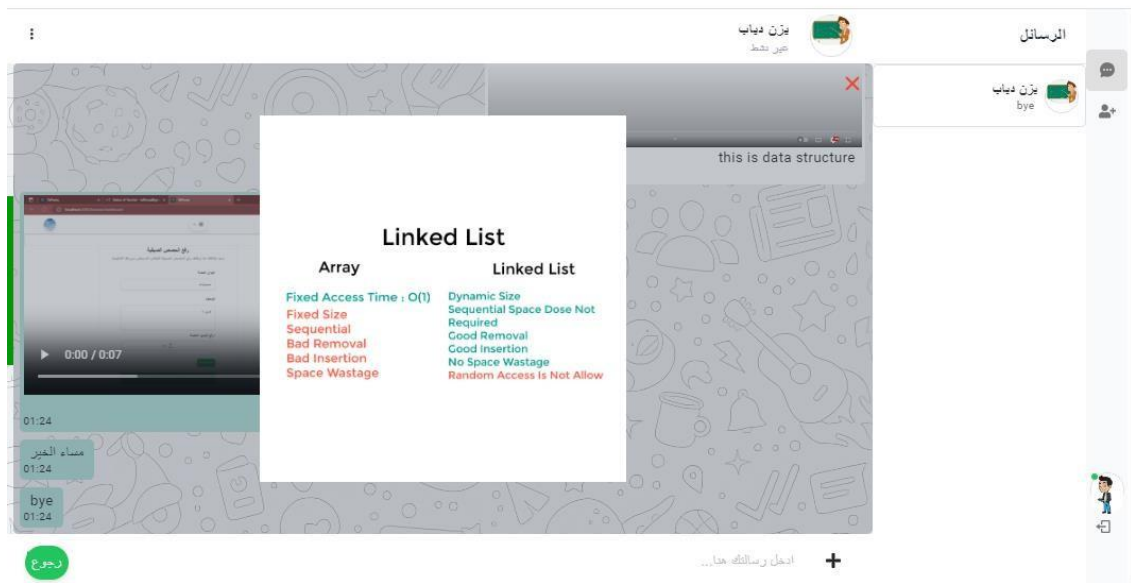


Figure 6.3.8.4: The image has been uploaded

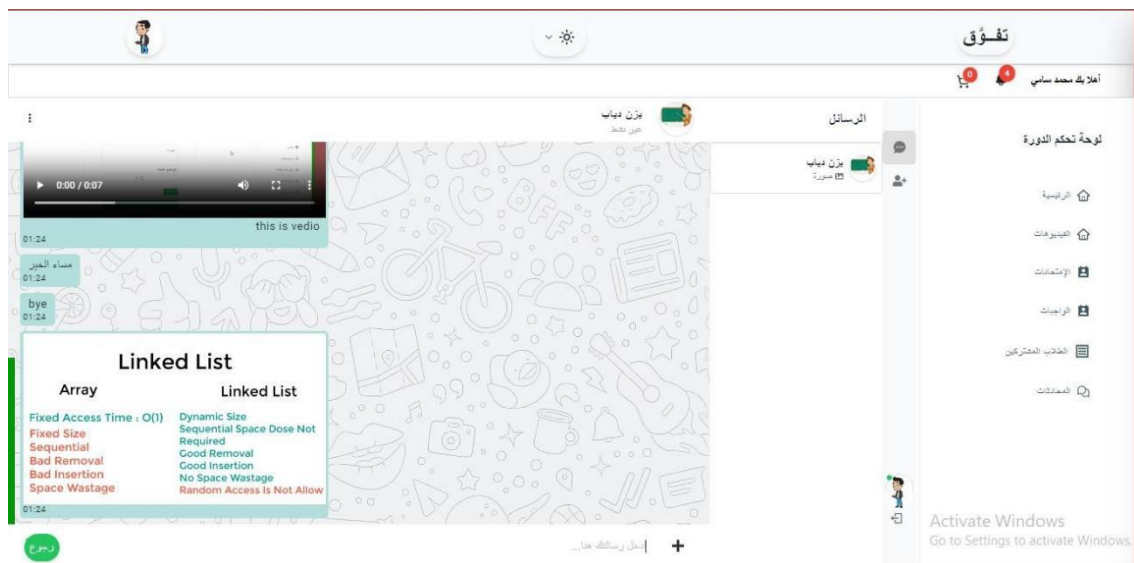


Figure 6.3.8.4: send message

The same applies when he chooses “فيديو” with the same details as images

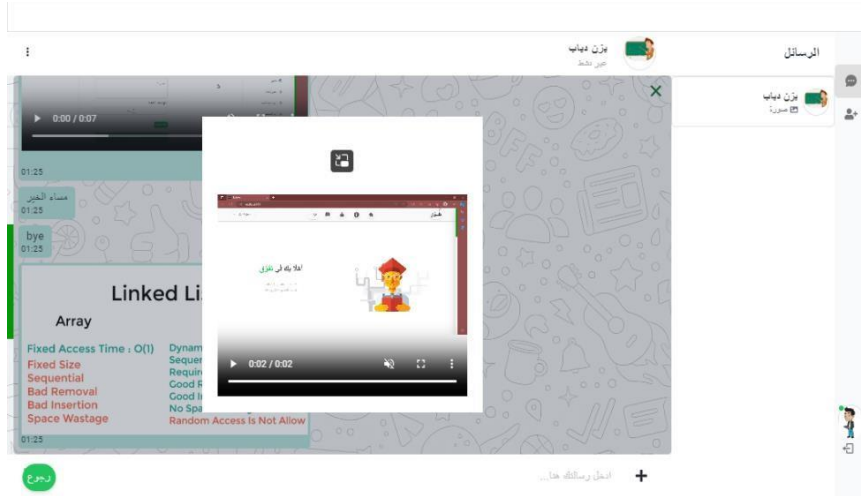


Figure 6.3.8.4: The video has been uploaded

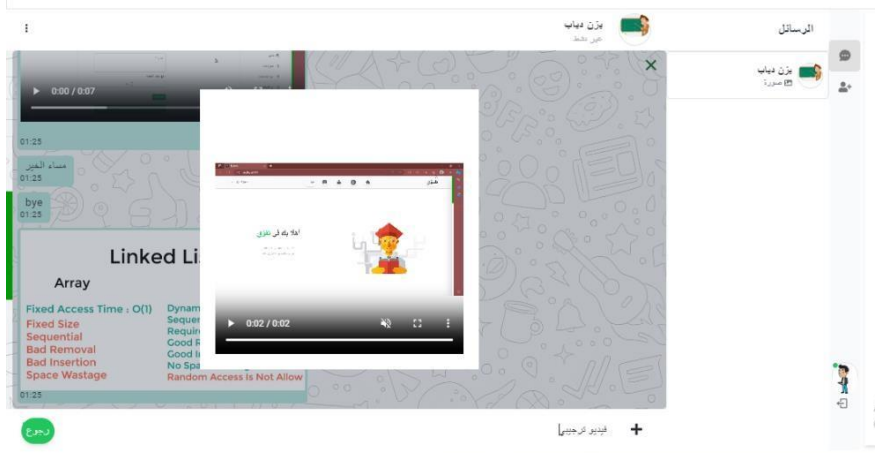


Figure 6.3.8.4: write message to send with video

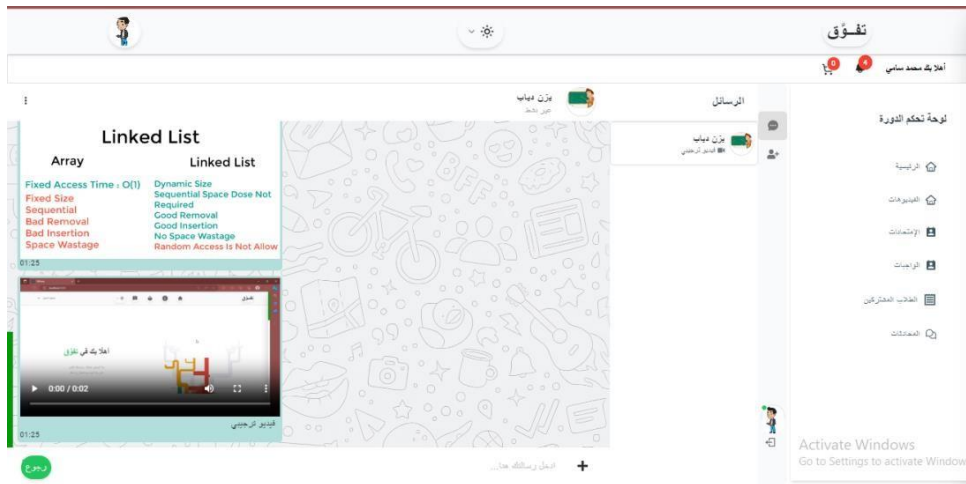


Figure 6.3.8.4: Send message successfully

Here we added a feature that enables the student to edit his personal photo.

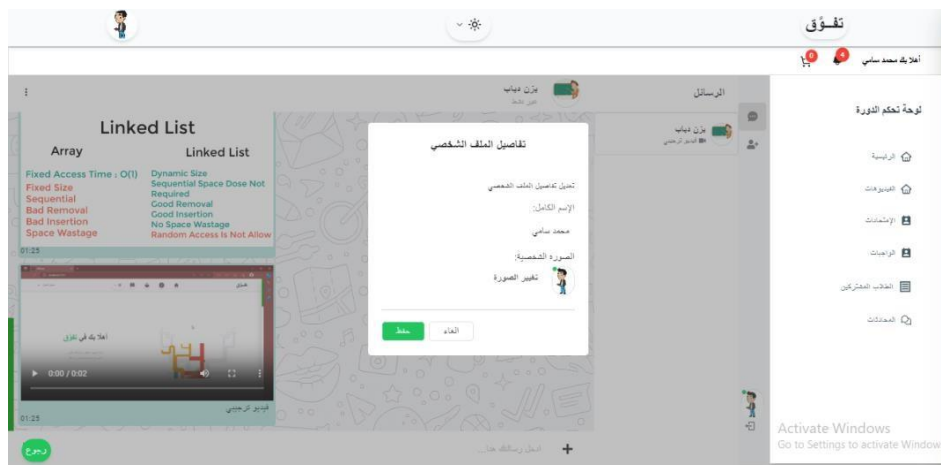


Figure 6.3.8.4: Possibility to change personal photo

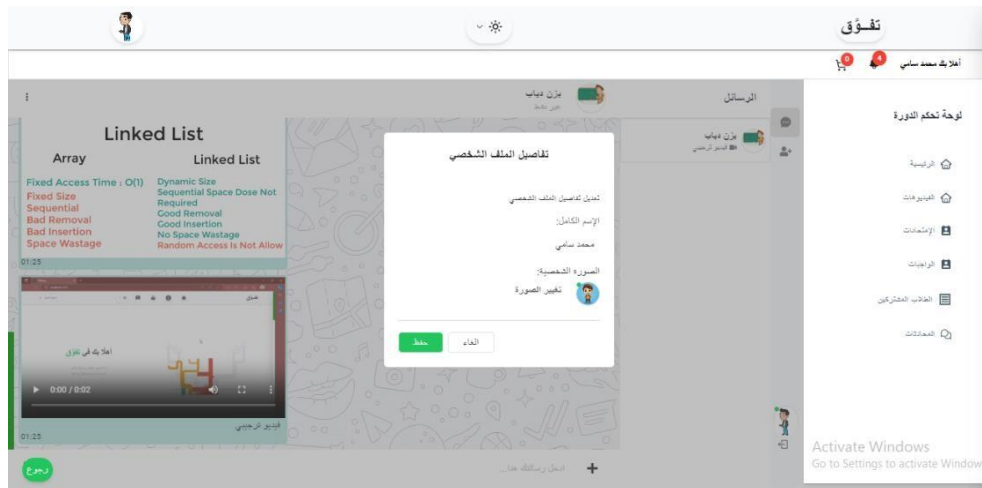


Figure 6.3.8.4: after changing it (1)

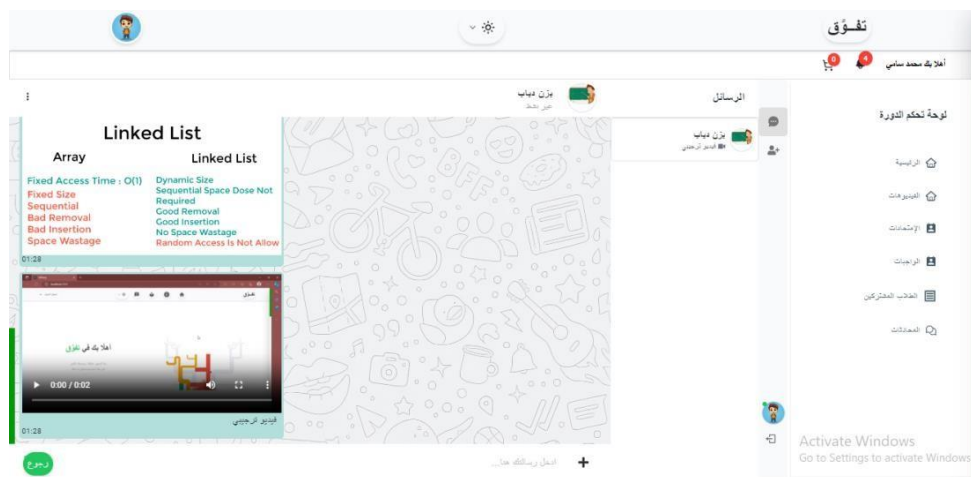


Figure 6.3.8.4: after changing it (2)

When clicking on the second icon in the column next to the chat, the student can search for all students on the site by name or email and see if one of them is active. Therefore, he can correspond with him while he is active, and it is also possible when he is inactive.

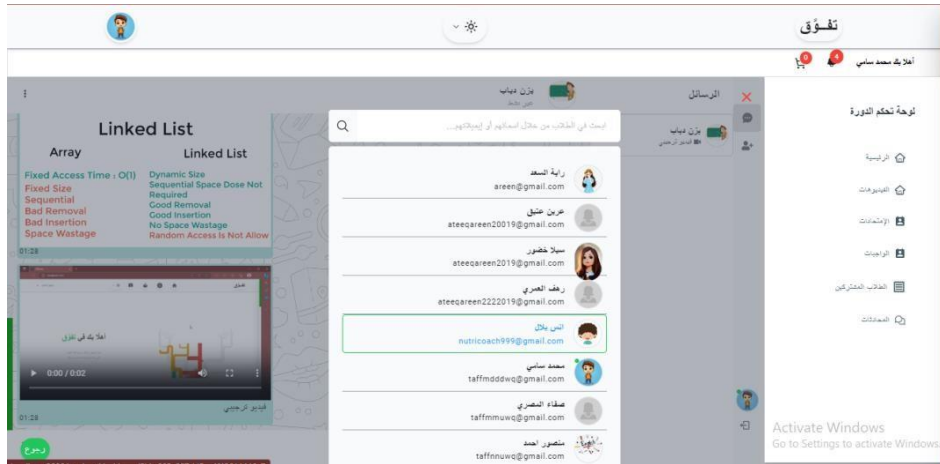


Figure 6.3.8.4: search for all students on the site

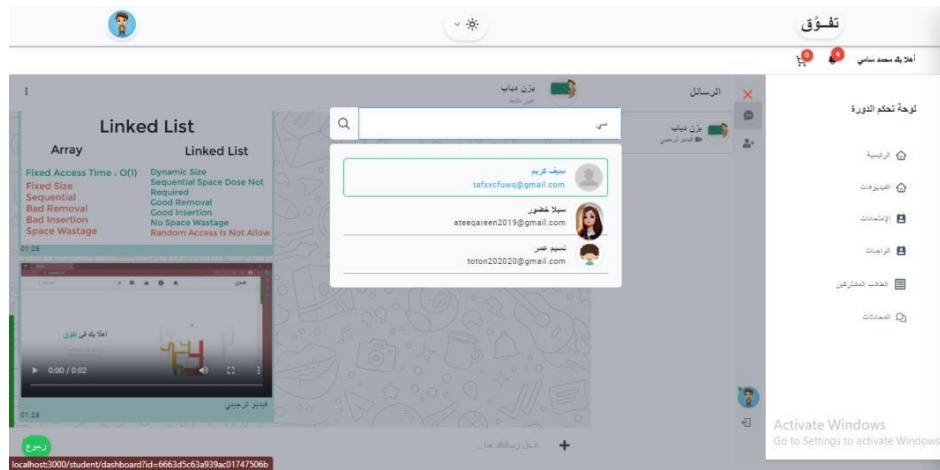


Figure 6.3.8.4: search by student name.

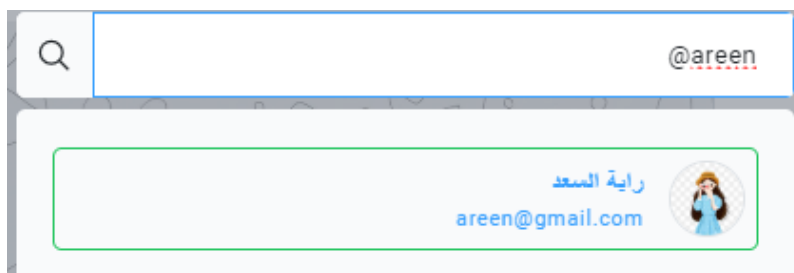
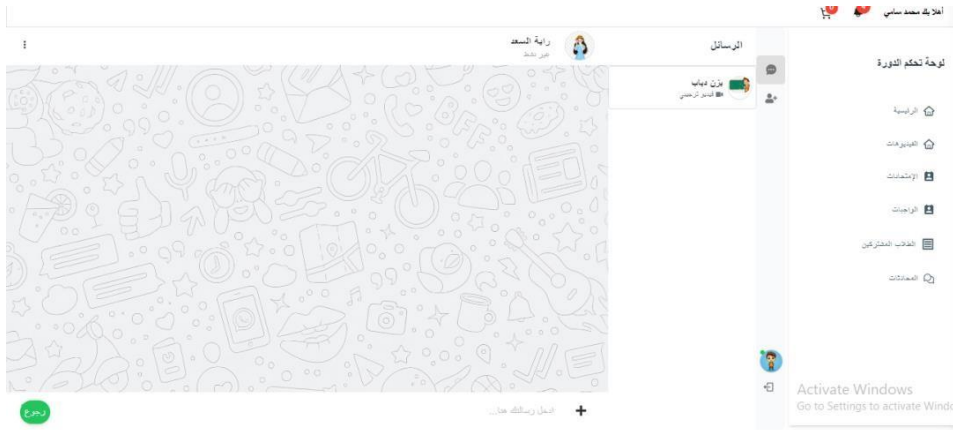
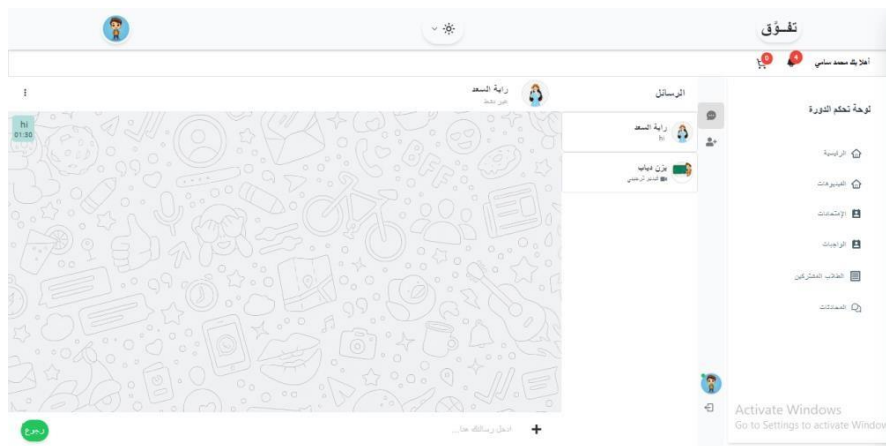


Figure 6.3.8.4: search by email



**Figure 6.3.8.4: Clicked on the name which student searched for to start a chat**



**Figure 6.3.8.4: send message to Raya.**

### 6.3.8.5 Edit details.

The student can modify a number of characteristics in his personal profile. For example, if he moves from one school to another or if he changes his major, and, accordingly the courses offered to him change. He can also update his password.

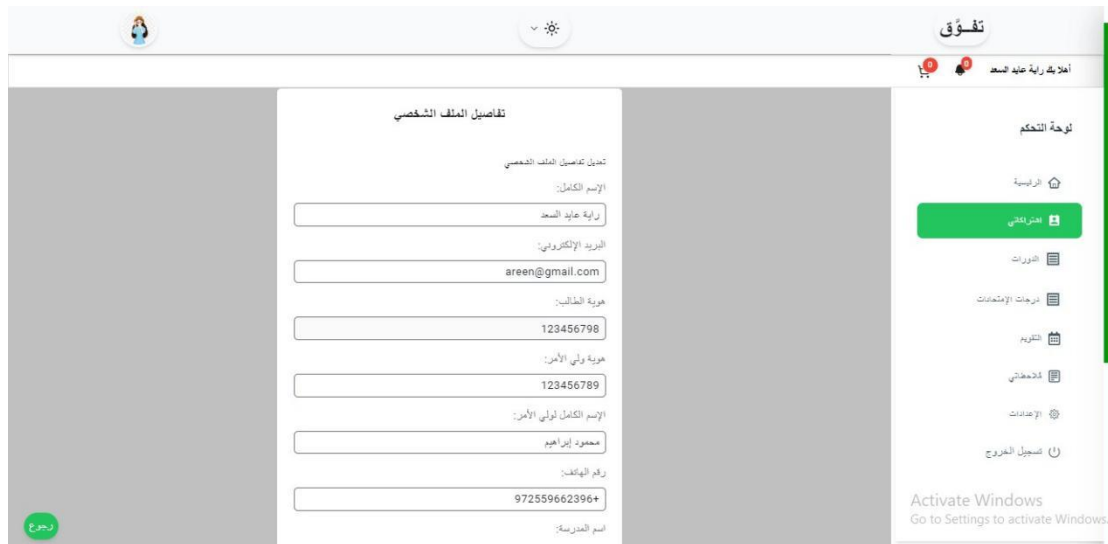


Figure 6.3.8.5: edit profile information (1)

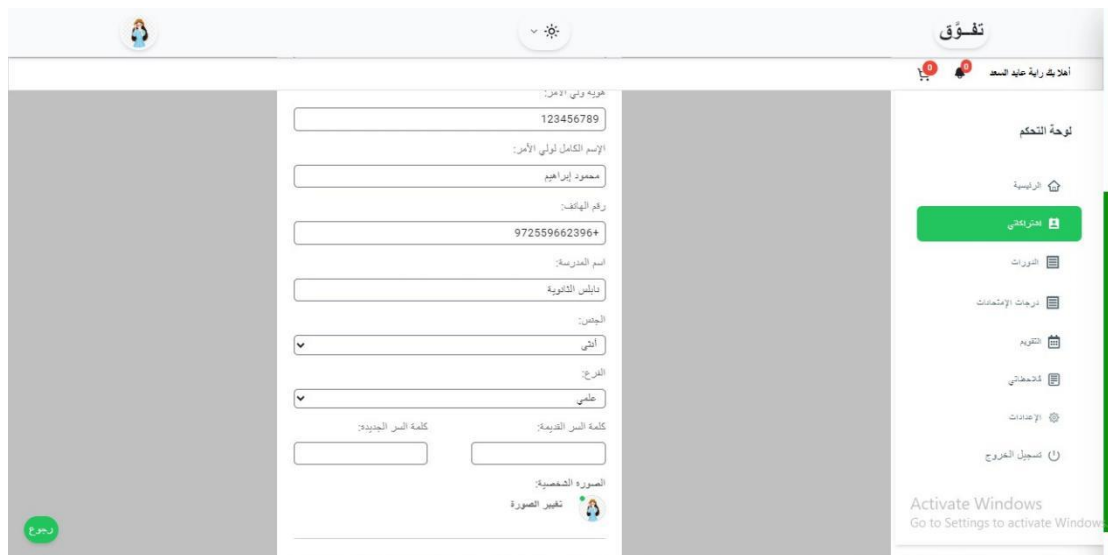


Figure 6.3.8.5: edit profile information (2)

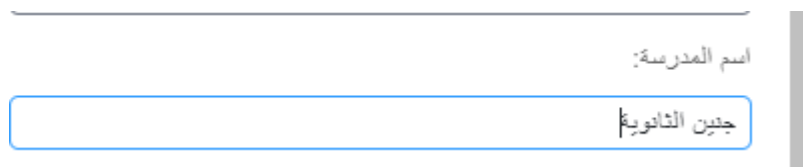


Figure 6.3.8.5: change school name

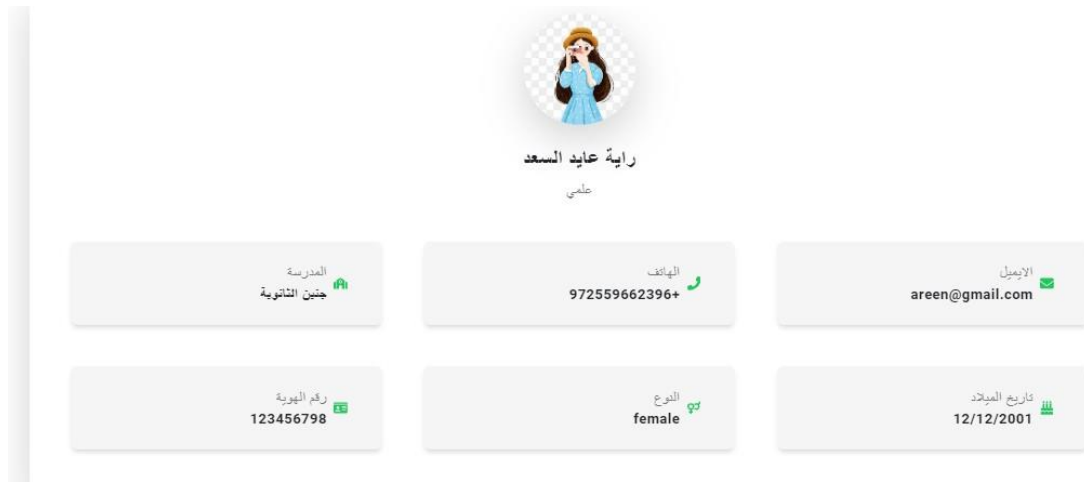


Figure 6.3.8.5: school name changed.

### 6.3.8.6 Extra details.

Here is what appears to the student when the teacher does not upload assignments, exams, or videos

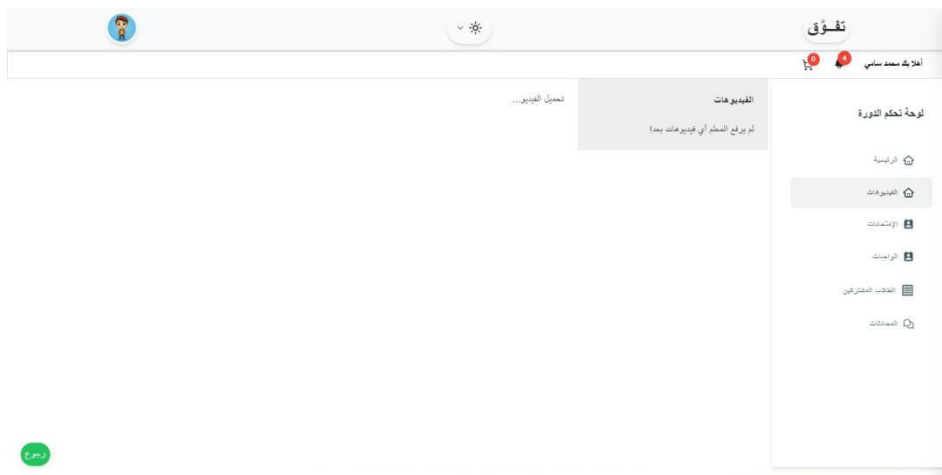


Figure 6.3.8.6: If the teacher does not submit a lecture.

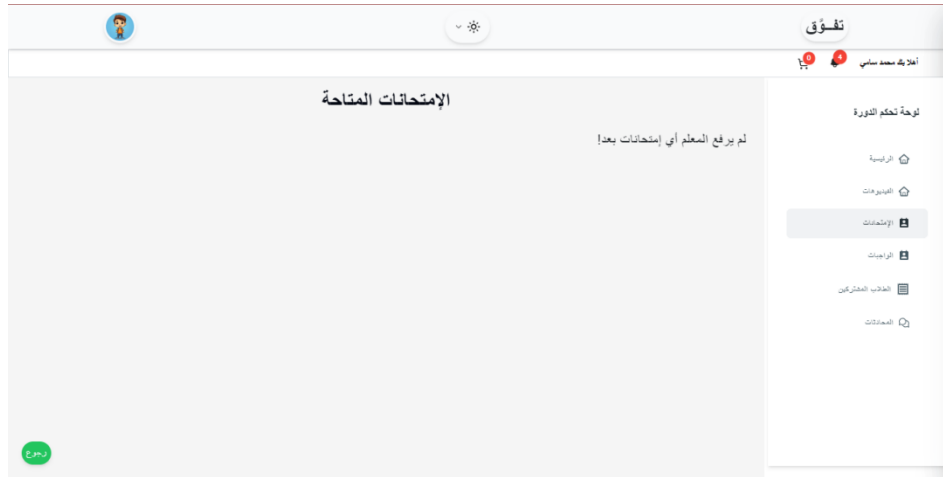


Figure 6.3.8.6: If the teacher does not submit an exam.

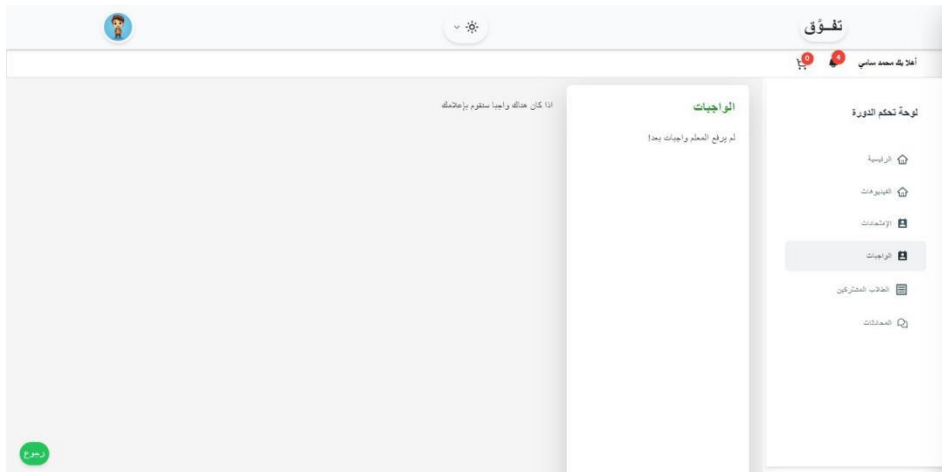


Figure 6.3.8.6: If the teacher does not submit an assignment

# Mobile Application

## 6.4 User (Student) Mobile Application

### 6.4.1 Home Page

This is the first page that appears to users of the mobile application, students and families, as the mobile application is intended for students and families.

The is the Onboarding UI pages, first page contain the application logo, and when the user click on the right arrow button then the next page appear and clicking on the left arrow button then the previous button will appear.



Figure 6.4.1: Mobile app home page

### 6.4.2 Login Page

This is the mobile user login page that works and asks the user to enter the User Id and User password, and then determine the user type: Student or Parent.



Figure 6.4.2: Login Page

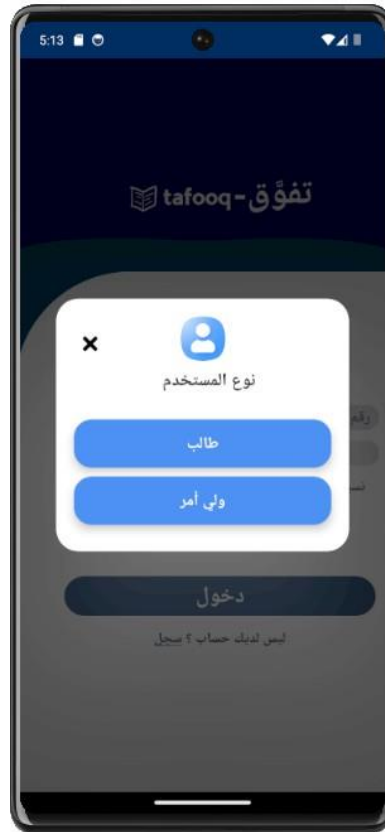


Figure 6.4.2: User type

**Login Page and Validation of data:**



**Figure 6.4.2 : Login Page with empty user Id and password**

### 6.4.3 SignUp Page

Sign up pages for the student and parent users.



The student sign up page features a dark blue header with the 'tafooq' logo and the title 'تفوق - إنشاء حساب جديد'. Below the header, there are several input fields for personal information: 'رقم الهوية', 'الاسم الاول', 'الجنس', 'التخصص', 'رقم هوية ولي الامر', 'اسم ولي الامر', 'اسم المدرسة', and 'كلمة السر'. A date picker is used for 'تاريخ الميلاد'. Further down, there are fields for 'البريد الإلكتروني', 'رقم الهاتف', and 'رفع صورة شخصية' with a camera icon. At the bottom, there are radio buttons for 'طالب' (selected) and 'ولي امر', and a large blue 'تسجيل' button. A link at the bottom reads 'لديك حساب مسبقا؟ دخول الان'.

Figure 6.4.3 :Student sign up page



The parent sign up page features a dark blue header with the 'tafooq' logo and the title 'تفوق - إنشاء حساب جديد'. Below the header, there are several input fields: 'رقم الهوية', 'الاسم الاول', 'الجنس', 'عدد الابناء المسجلين في المركز', and 'كلمة السر'. A camera icon is used for 'رفع صورة شخصية'. Below this, there are radio buttons for 'ولي امر' (selected) and 'طالب'. A large blue 'تسجيل' button is positioned below the radio buttons. At the bottom, there is a link that reads 'لديك حساب مسبقا؟ دخول الان'.

Figure 6.4.3 : Parent sign up page

Sign up page with uploading a user photo:



Figure 6.4.3: Choose upload photo way

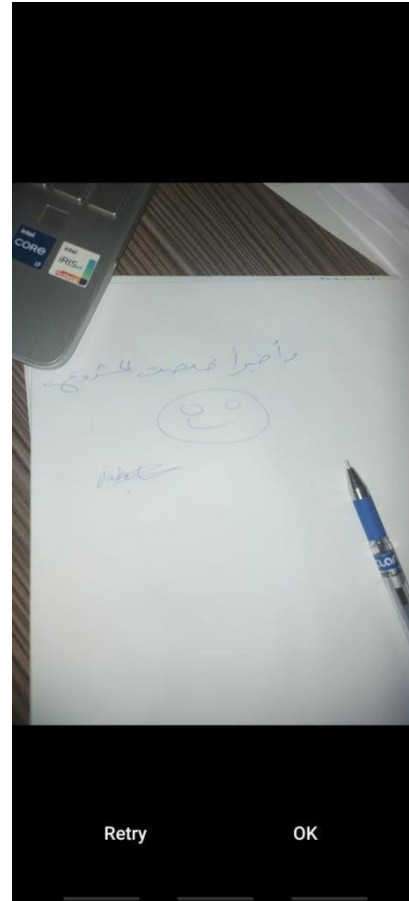


Figure 6.4.3 : upload photo via mobile camera

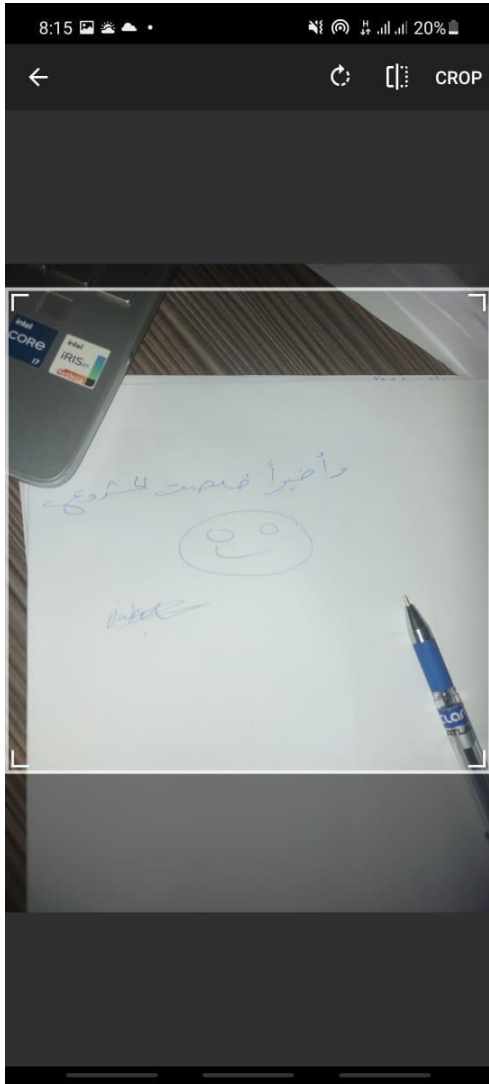


Figure 6.4.3 : uploaded photo selects

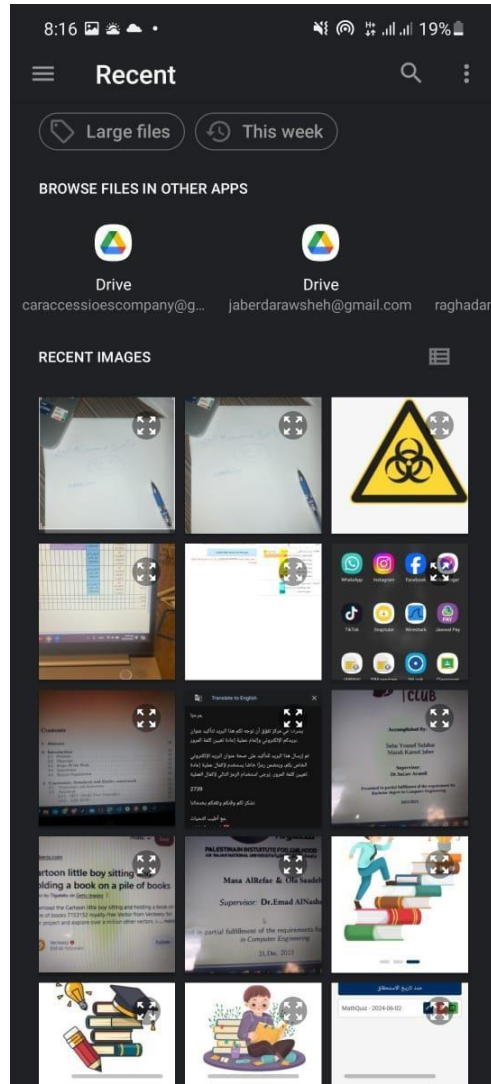


Figure 6.4.3 : choose photo to upload

Sign up page with filling the required user information account:

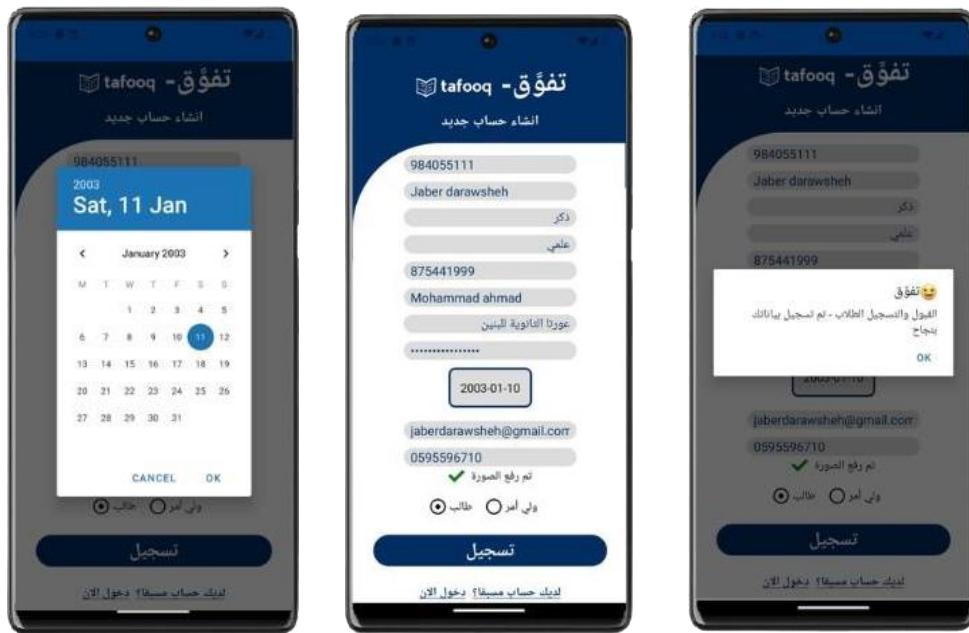


Figure 6.4.3 : Student sign up information account

#### 6.4.4 Forget Password

When the user, student or parent forget his password account, then the mobile application sends to the user an email, contain verification code to verify the user's identity, and if he enters the correct code, then the user is allowed to enter a new password by entering the ID number and the new password. If you know that each code has an expiration period, then the user can re-send the email again.

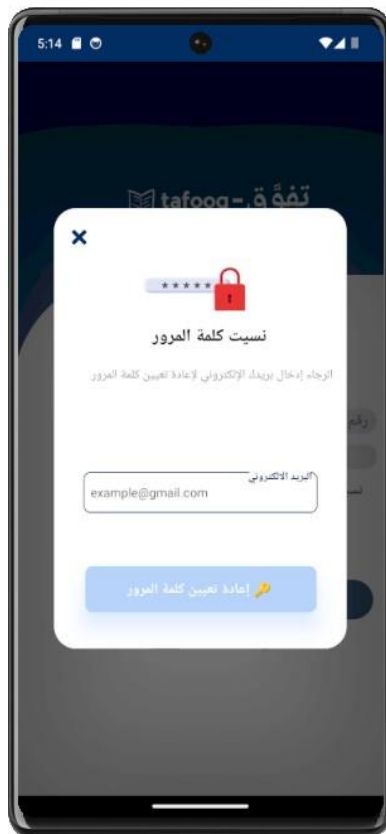


Figure 6.4.4 : Forget password

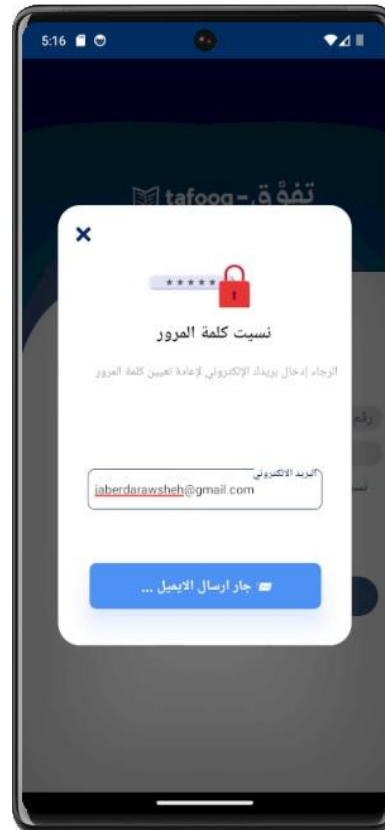


Figure 6.4.4 : Send user Email

Forget Password, verification code:



Figure 6.4.4: Sending Email in progress

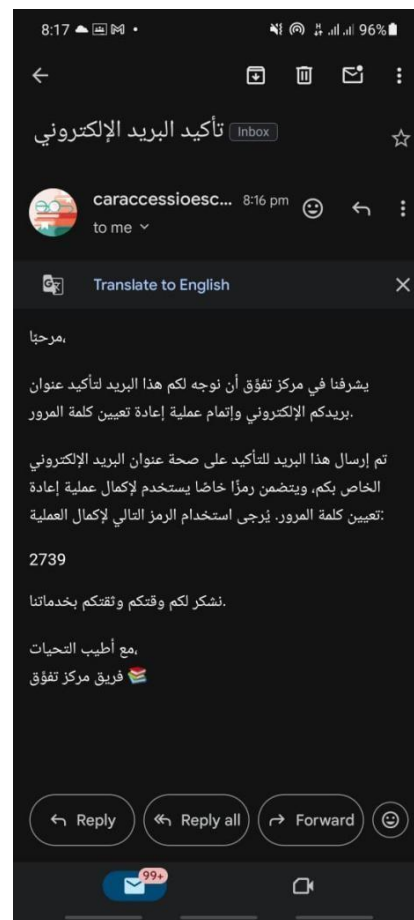


Figure 6.4.4 : Received user email

## Verification Process:



Figure 6.4.4 : Verification page



Figure 6.4.4 : Time out code

User Enter the correct received code that sent on personal email:



Figure 6.4.4: Enter correct code



Figure 6.4.4 : Update password page

Data validation for the updated password:



Figure 6.4.4 : Mismatch password



Figure 6.4.4 : matched password

Updating the old password process:



Figure 6.4.4 : password updated success

### 6.4.5 Student Home Page

This is the main page after logging in for Scientific students. One of the most important things this page contains are the proposed courses that the institute offers to high school students, as for each course there is more than one teacher and more than one appointment, and the student registers the appropriate course for him. We will explain the registration process later.



Figure 6.4.5: Scientific branch home page



Figure 6.4.5: Scientific branch home page

The home page for students in the literary branch, which initially contains the proposed courses offered by the institute to high school students in the literary branch, and the student chooses the appropriate course, teacher, and appropriate date. We will explain the registration process later.

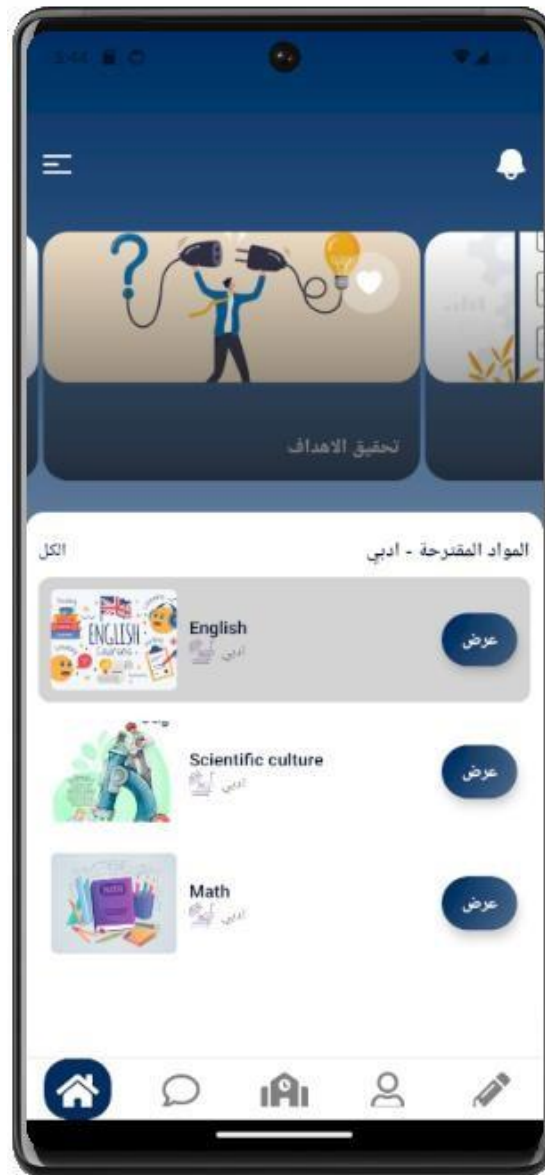


Figure 6.4.5 : Literary branch home page

The home page for students in the commercial branch, which initially contains the proposed courses offered by the institute to high school students in the commercial branch, and the student chooses the appropriate course, teacher, and appropriate date. We will explain the registration process later.



Figure 6.4.5 : Commercial branch home page

## 6.4.6 Register Courses

From the student's home page, he clicks on the button “عرض” the course he wants to enroll in, and then chooses the teacher and the appropriate date for the student. After that, the course subscription fees will be paid via a Visa card. When the user selects the math courses and the student able to use any Scientific Course Such as physics, chemistry, or English, and then open to use the proposed courses offered by the institute to high school students in the Scientific branch, Then the student chooses the appropriate course for him.



Figure 6.4.6: Proposed center Courses



Figure 6.4.6 : Courses Slider



Figure 6.4.6 : Proposed center Courses

## 6.4.7 Payment Via Visa Card

When the student selects the appropriate course, the electronic subscription payment screen opens for the student.

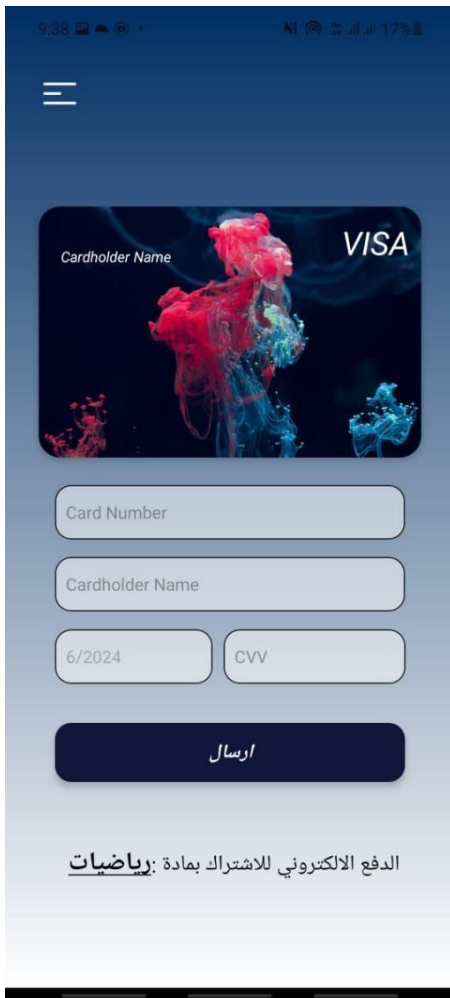


Figure 6.4.7: Payment Page

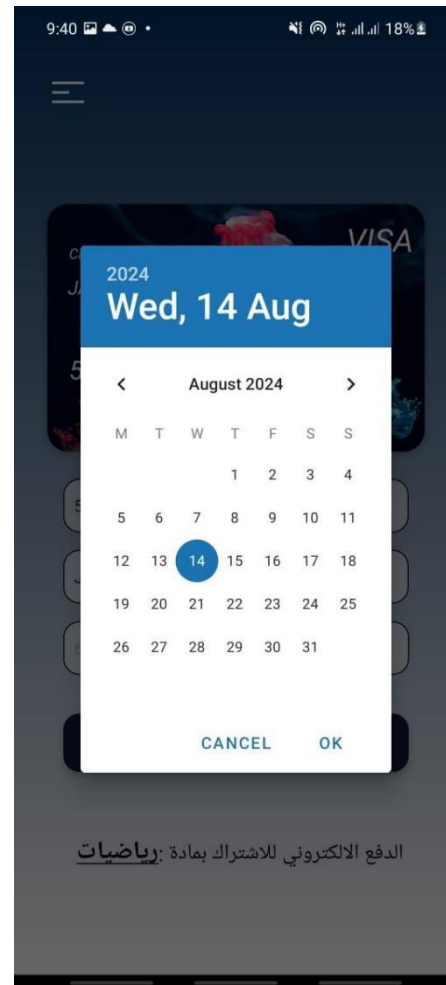


Figure 6.4.7 : Selecting the card expire data

## Course Payment Process:

9:43 18%

☰

Cardholder Name  
JABER MOHAMMD DARAWSHEH

VISA

54327654315788547

54327654315788547

JABER MOHAMMD DARAWSHEH

8/2024 2541

ارسال

الدفع الالكتروني للاشتراك بمادة: رياضيات

Figure 6.4.7 : Fill the need via card information

9:40 18%

☰

CVV  
2541

54327654315788547

JABER MOHAMMD DARAWSHEH

8/2024 2541

ارسال

الدفع الالكتروني للاشتراك بمادة: رياضيات

Figure 6.4.7 : Enter the CVV of card

## 6.4.8 Compiles (Generate) Bills Sheets

After the success payment to buy the math course then the mobile application automatically generate the payment bill .It is saved directly on the student's mobile phone, and this guarantees the student his right to register the course.

And then directly notify the user that the course is registered and then directly store the course on the student time table.

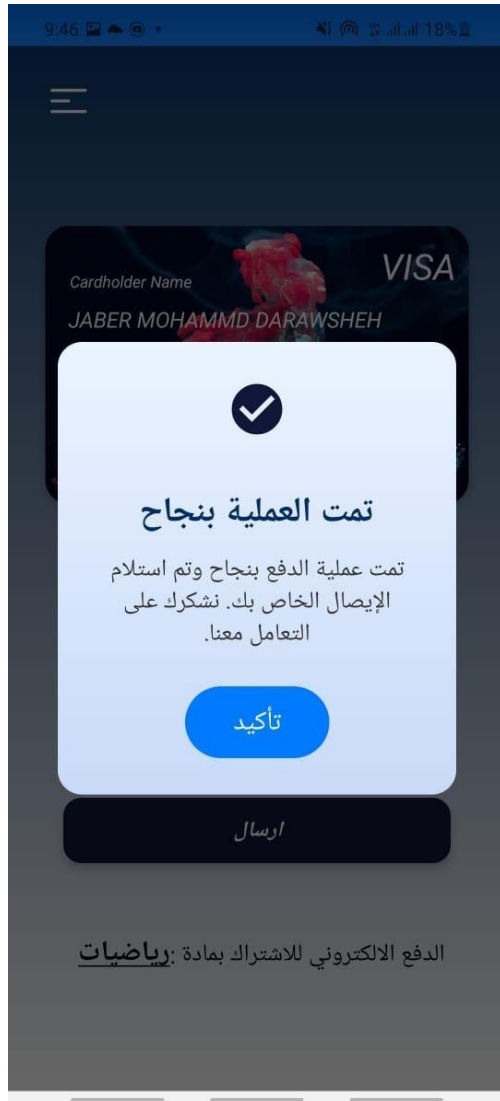


Figure 6.4.8: Payment Success



Figure 6.4.8 : Bill design

## 6.4.9 Student Time Table

It contains materials registered at the institute. And when the user clicks on any registered course then the appl show to user more detailed for the register course.



Figure 6.4.9 : Time Table

## 6.4.10 Quizzes System

The application provides multiple choice questions for all students in the scientific, literary, and commercial branch, as for each question there is a time determined by the course teacher. If the student exceeds this time and does not answer the question, the application proceeds by moving it to the next question. The tests application is distinguished by the fact that it automatically corrects the students' answers without the teacher's intervention, as the teacher only uploads the model answers for each question, and the site corrects the answers after the student finishes submitting the test and gives him the result. The application also uploads this final grade automatically without the teacher's intervention on the student's daily grade schedule.

Only the student who submits the test is allowed to attempt one time.



Figure 6.4.10: app SideBar



Figure 6.4.10: Quizzes Table

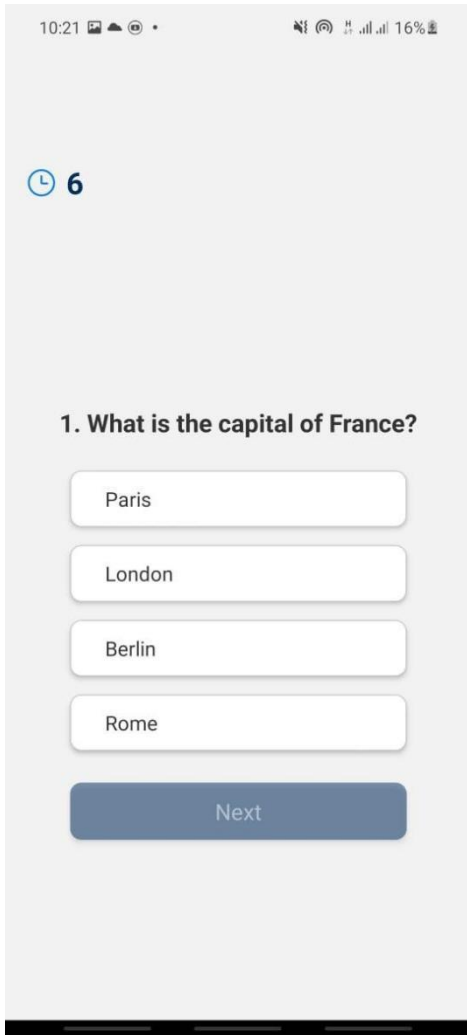


Figure 6.4.10 : Quiz Questions

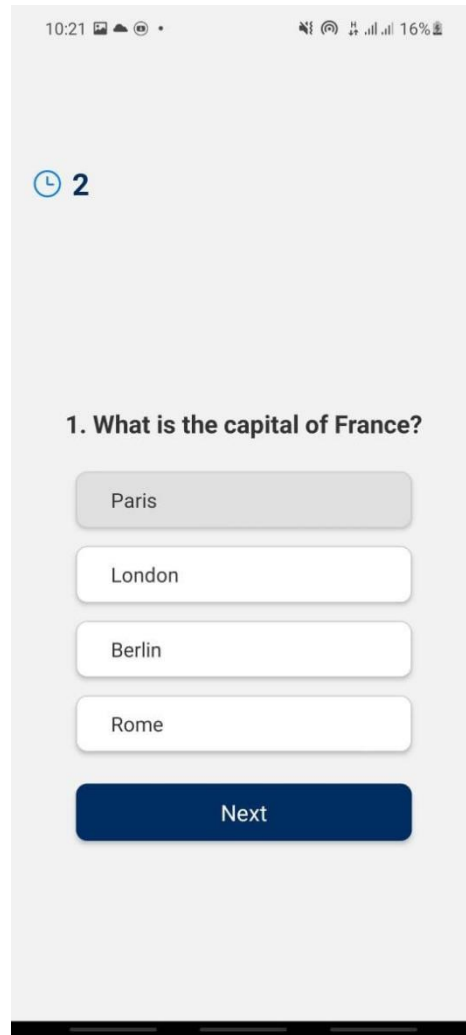


Figure 6.4.10 : Quiz Questions

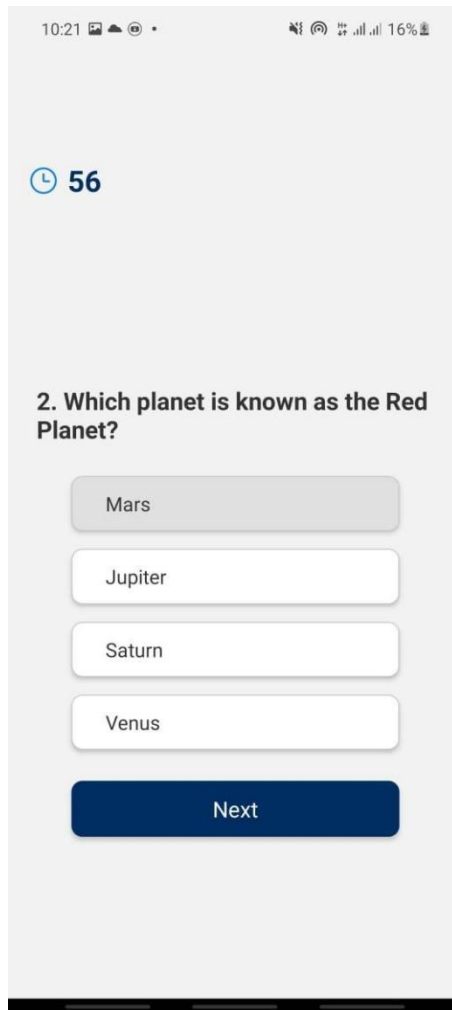


Figure 6.4.10 : Quiz Questions

## Quiz Results :

The student quiz grade is directly stored on the student daily grads.

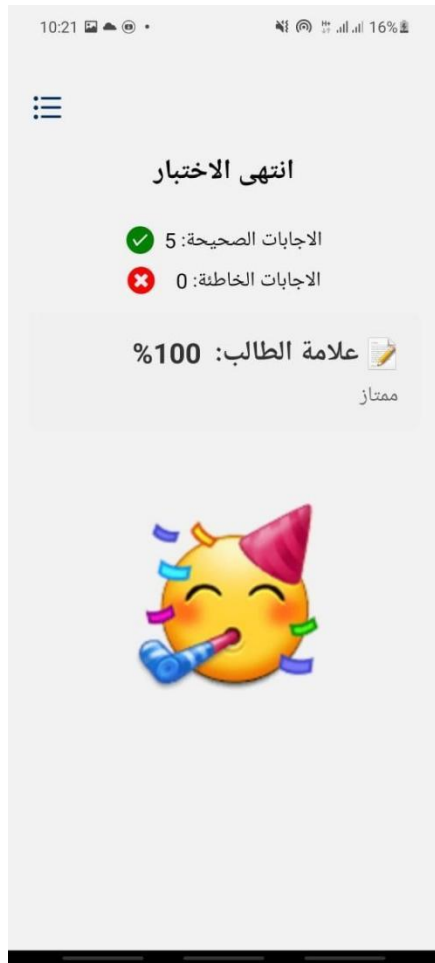


Figure 6.4.10 : Good Quiz Result

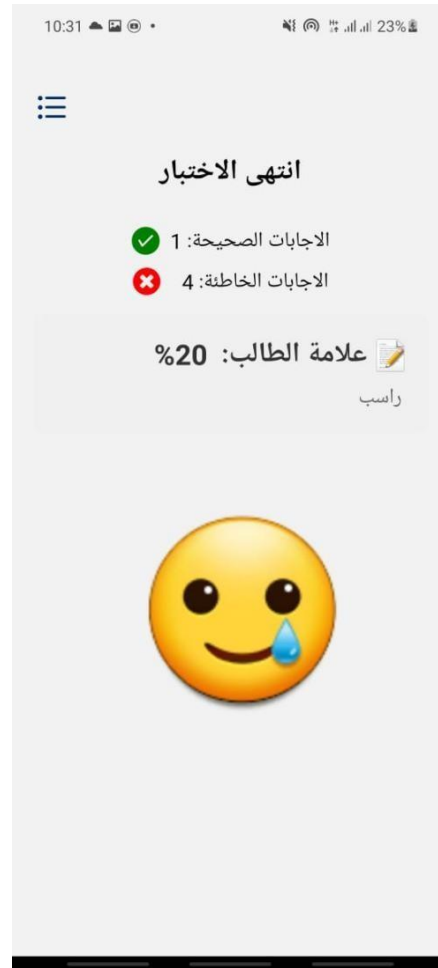


Figure 6.4.10 : Bad Quiz Result

### 6.4.11 Assignments (Exercises , Tasks) System

Through the application, teachers can posts tasks and assignments for students so that they can upload appropriate solutions and then wait for feedback from the teacher, which is the grade.

The application contains a beautifully designed calendar with end dates for assignments represented.

The application prevents any file from being uploaded after the end of the submission time specified by the teacher. The solution to the task is to upload a PDF file only.



Figure 6.4.11 : Tasks Page



Figure 6.4.11 : Timeout Task

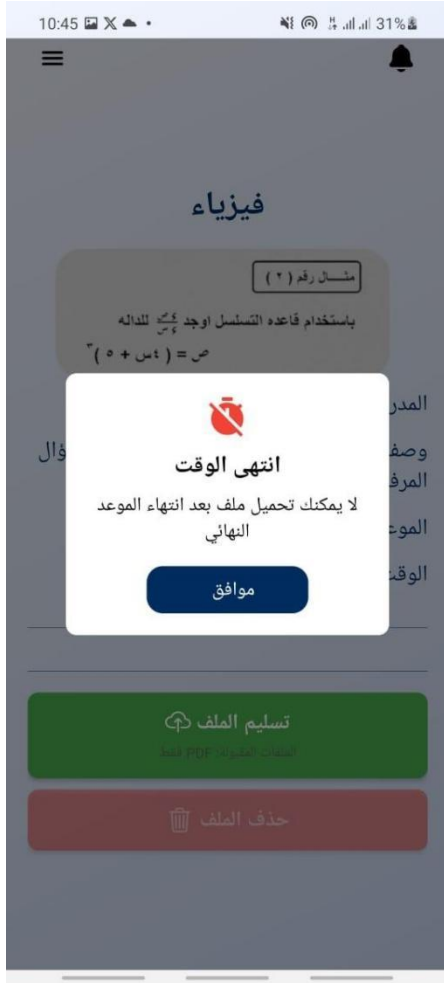


Figure 6.4.11 : Task time validation



Figure 6.4.11 : Available task

Choosing the pdf file to upload as task solution:

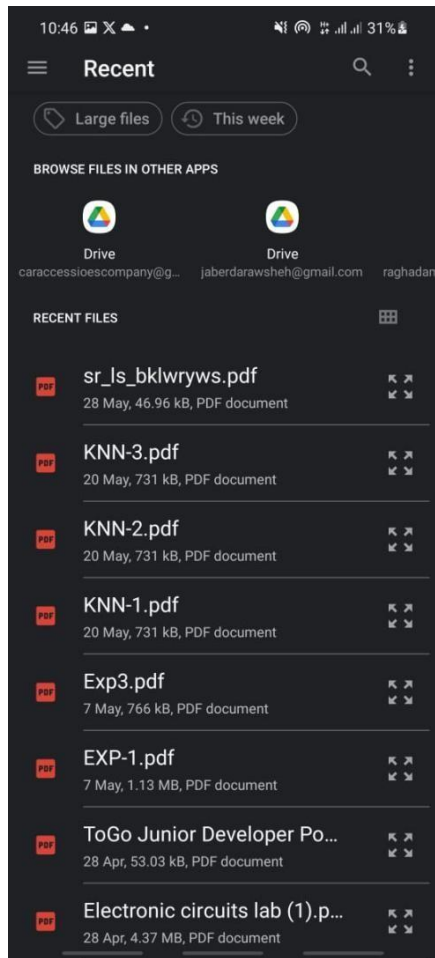


Figure 6.4.11 : Selecting the solution file

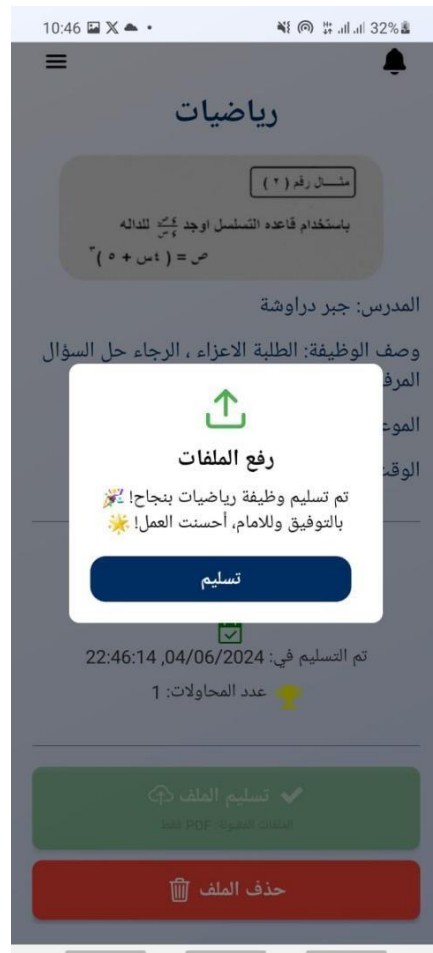


Figure 6.4.11 : Success upload task solution



Figure 6.4.11 : Start uploading rate



Figure: End uploading rate

## 6.4.12 To-Do List Feature

This feature enables students to organize the time they study for courses or study for a specific test, and even to complete assignments. When the student chooses the Remind Me option with a notification, then the user must send a notification to the mobile phone as a reminder of the specific assignment's date.



Figure 6.4.12 : To-do list page

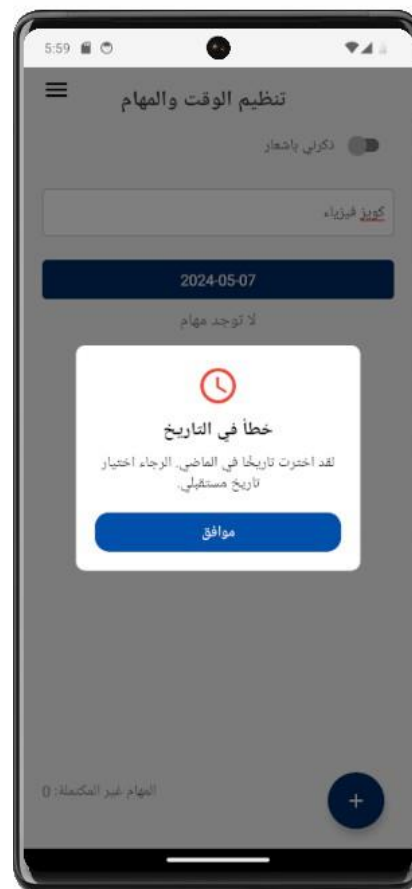


Figure 6.4.12 : Selecting past date for task

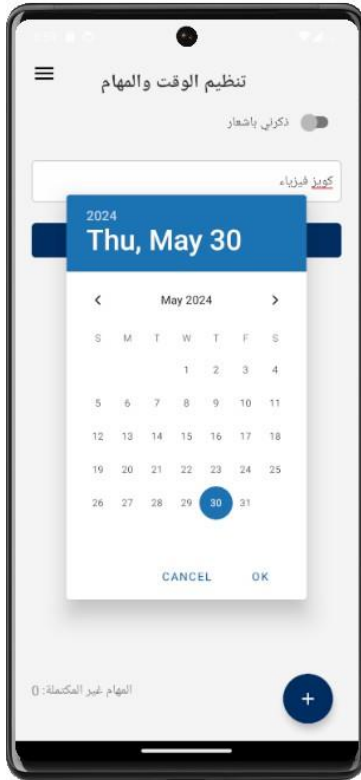


Figure :6.4.12 Selecting the to-do list date

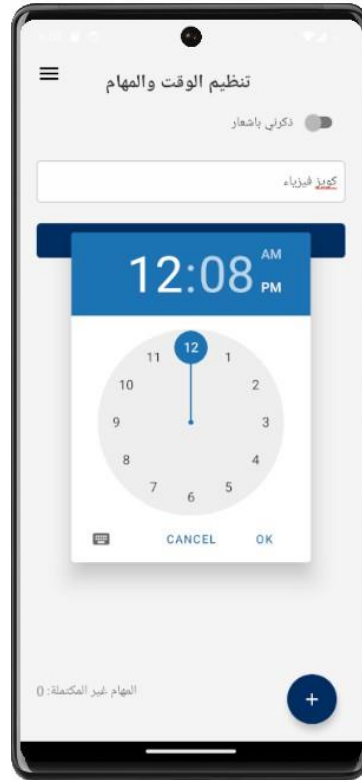


Figure 6.4.12 : Selecting to-do list time in hours

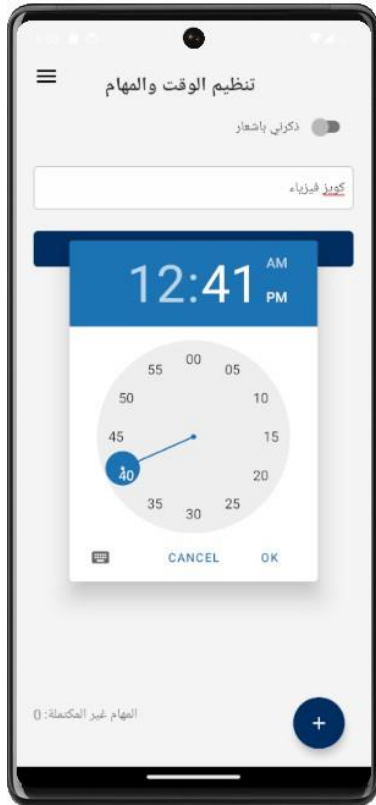


Figure 6.4.12:selecting the to-do list time in minute



Figure 6.4.12 : adding the to-do list success

### 6.4.13 Students Profile Page

This page contains the most important features that a student needs, including entering notes on some subjects, recorded lessons, daily grades, and academic summaries.



Figure 6.4.13 : Student Profile

### 6.4.14 Notes System

Students are allowed to add some text notes on various subjects, a mathematical equation can be inserted into the written note, and the color and design of the note can be changed.

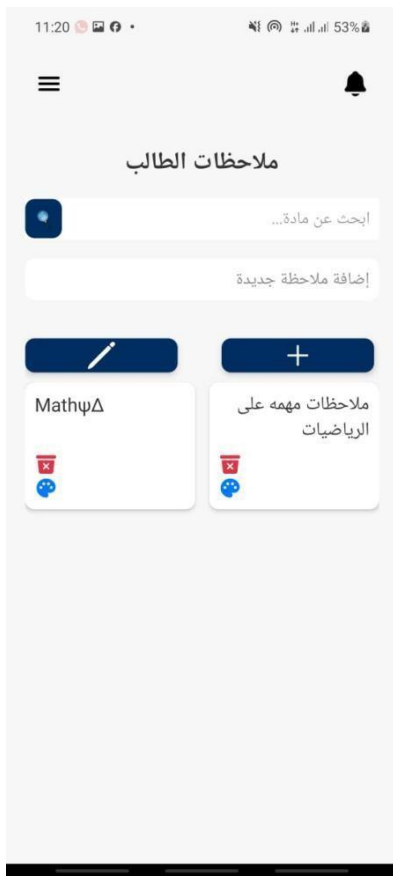


Figure 6.4.14 : Notes Page



Figure 6.4.14 : Select note theme



Figure 6.4.14 :Note page



Figure 6.4.14 : Note with equation

### 6.4.15 Daily Grades

This page stores the student's test marks and assignment marks.

المادة	الامتحان	العلامة من	العلامة	التقدير
فيزياء	اول	4	5	✓
انجليزي	اول	5	5	✓
انجليزي	اول	1	5	✗

Figure 6.4.15 : Daily Gards Page

### 6.4.16 Drawing Board (For Training) feature

Some subjects need to draw curves related to the subject, such as in mathematics, the student needs to draw a mathematical equation, and also in physics, he needs to draw curves. Therefore, entering incomplete text notes for students is why we designed a drawing board with beautiful features such as drawing shapes, changing the colors of the drawing line, and deleting parts or the entire drawing. The student's study process has become smoother and easier through the design and construction of this feature.

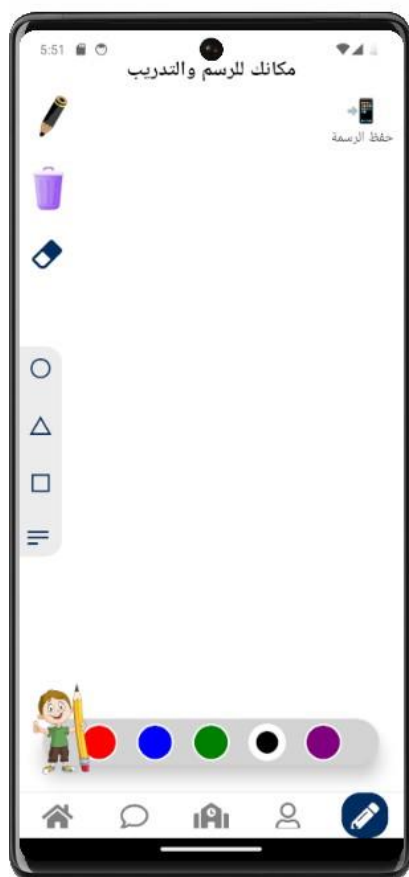


Figure 6.4.16 : Drawing board page

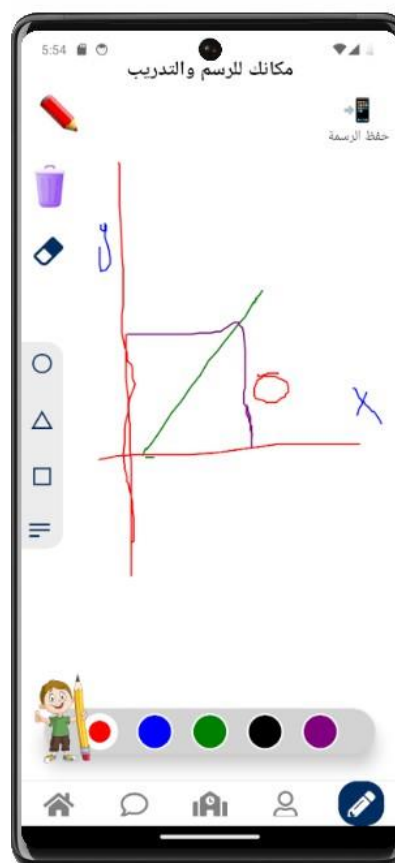


Figure 6.4.16 : Ready Drawn



Figure 6.4.16 : Save student Drawing page



Figure 4.6.16 : Emphasized Save during page

### 6.4.17 Edit Profile Information

Students can update and modify their personal data and can choose a new profile picture

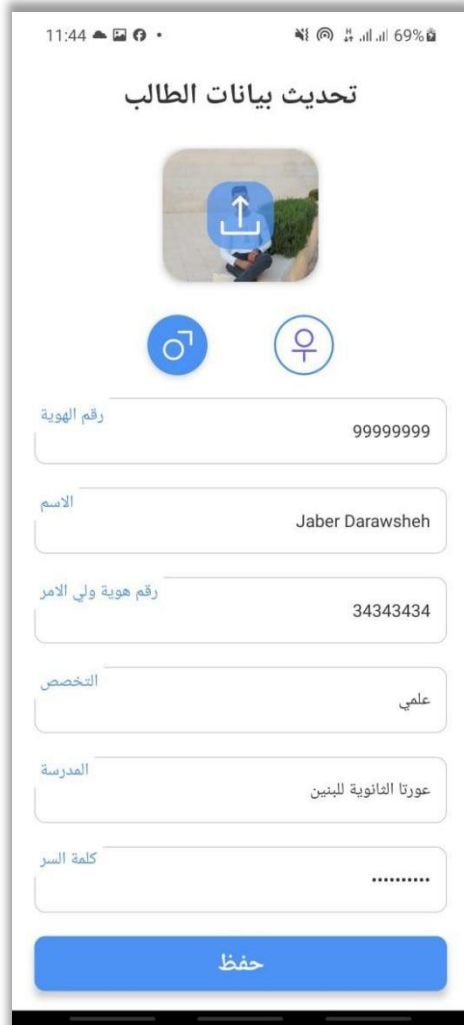


Figure 6.4.17 : Update Profile information

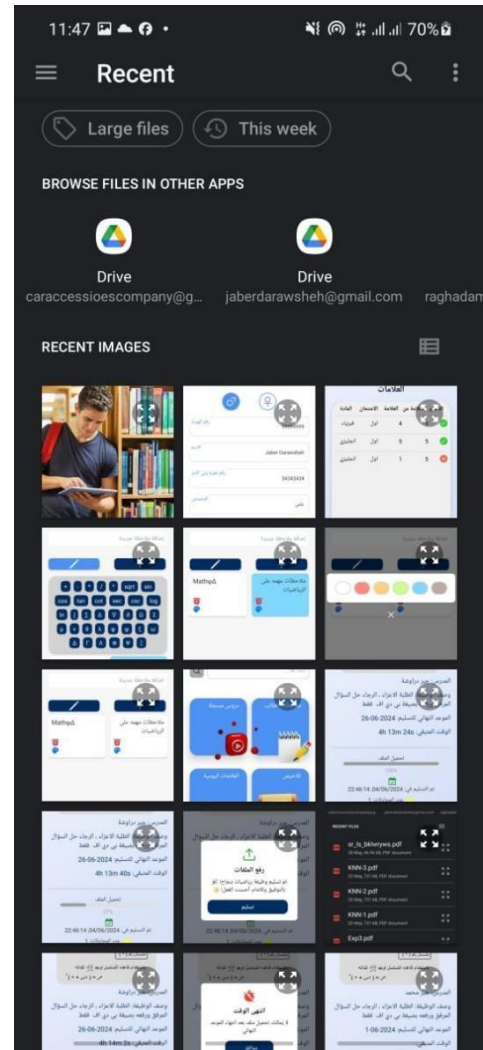


Figure 6.4.17 : Selecting user photo to update

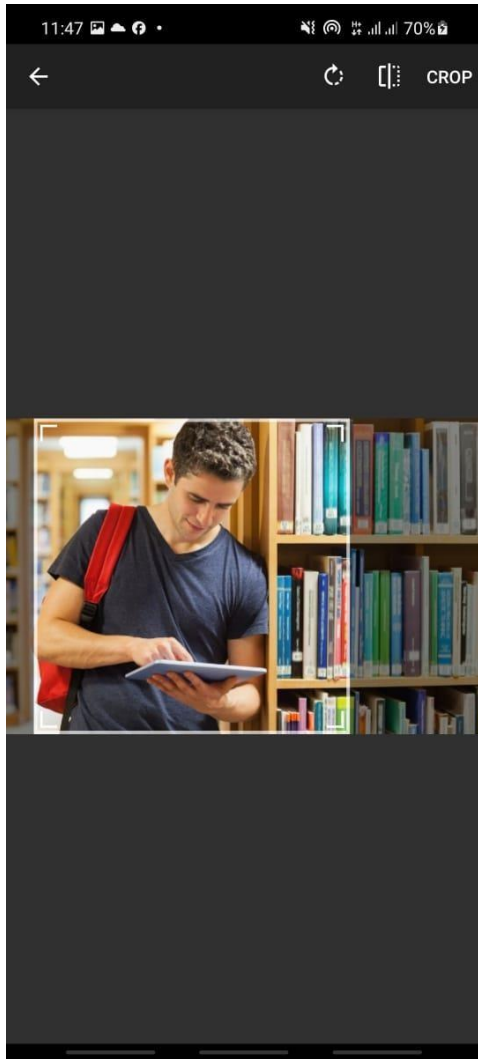


Figure 6.4.17 : Styling the select photo to update

11:47 71%

### تحديث بيانات الطالب

99999999

رقم الهوية

جبر محمد

الاسم

34343434

رقم هوية ولي الامر

علمي

التخصص

عورتا الثانوية للبنين

المدرسة

كلمة السر

انتظر للتحديث ...

Figure 6.4.17 : Updating profile In progress

### 6.4.18 Recorded Lessons feature

The feature of adding recorded lessons is important and necessary, as it enables students who find it difficult to reach the institute to attend the lesson face-to-face to attend the lesson in person. Thus, the application was designed to take into account the difficult circumstances of students, especially in our present time.

These recorded lessons are uploaded by the course teachers, who upload links to recorded lectures in various subjects.

You can also notice in this image that it shows only the recorded lectures for the subjects in which the student participated

This student is in the literary branch and is registered only for scientific culture and math course so the recorded lectures for this courses appear

The information on this page changes depending on the branch and courses subscribed to.



Figure 6.4.18: Recorded Lessons Page

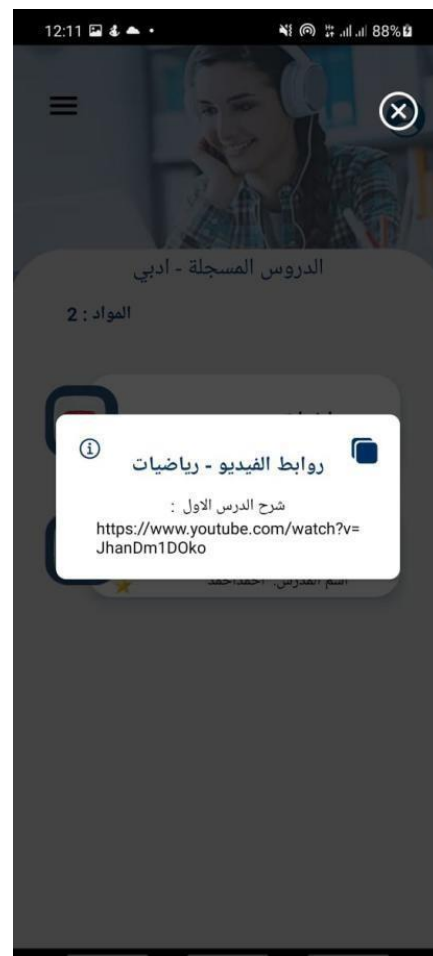


Figure 6.4.18 : Videos Links Page

## 6.4.19 Students Summaries Courses Feature

The application contains scientific summaries of the student's registered materials. These summaries cannot be accessed by the student unless he is participating in the course. Otherwise, this is prohibited.

Summaries are available for courses in the scientific, literary and commercial branches.

In these page the student was buy the math and scientific culture course, which mean that the student able to enter just for the math and culture course summaries.

If he try to enter to the course summary that not register it then the app show message to user that it is not possible to access the summary because of not participating in the course.



Figure 6.4.19 :Course summary page



Figure 6.4.19 :Course summary page

When the user chose the English course summary then the message shown to the user.

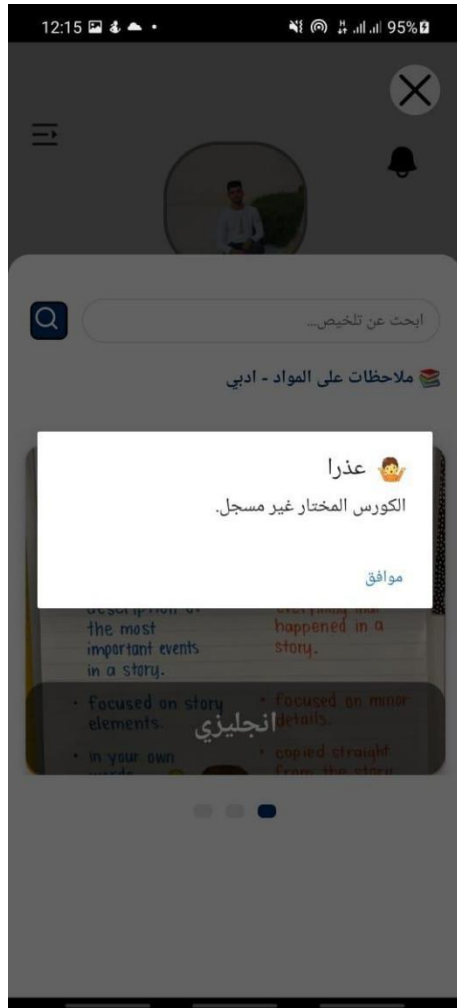


Figure 6.4.19 : Access not available summary



Figure 6.4.19: Access available summary

## 6.4.20 University Specializations Feature

Because the next stage for high school students is the stage of choosing the appropriate university major. It is known that high school students devote all their time to studying courses and preparing for final exams.

Therefore, we built a feature in the mobile phone that includes three prestigious universities: An-Najah National University, Birzeit University, and the Arab American University. We placed the various colleges in their well-known specializations, so that each specialization has its own acceptance rate for the specialization and the price of the specialization hour in the case of regular study and private study.



Figure 6.4.20 :Faculties of An-Najah Unive



Figure 6.4.20 : An-Najah University specializations



Figure 6.4.20 :Birzeit University Faculties

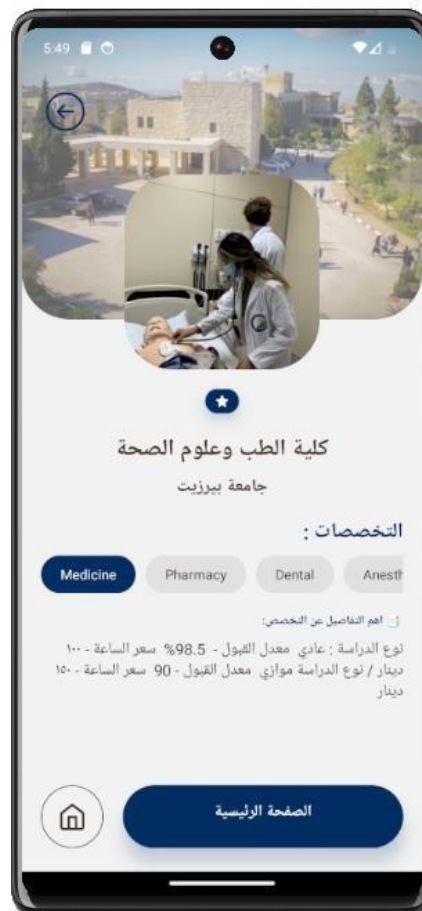


Figure 6.4.20: Birzeit University specializations



Figure 6.4.20: American University Colleges



Figure 6.4.20 :American University specializations

### 6.4.21 Chat System

Real-Time chatting between students helps in exchanging experiences among themselves and increasing knowledge and knowledge.

**Chat between two students:**



Figure 6.4.21: Chat Conversation



Figure 6.4.21: Chat Conversation

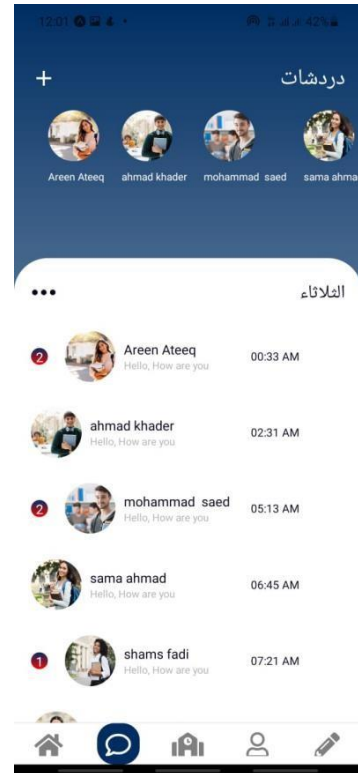


Figure 6.4.21: Chat Conversation

## 6.2.22 Real-Time Notification

The notifications made it easier for the student to know the time of his lesson, as the mobile application sends daily notifications half an hour before the lesson is scheduled, which reminds and alerts the student so that he does not miss the lesson.

Also, as we mentioned previously, in the students to-do list, when the student clicks on Remind Me, a notification will be sent to the student at the due date, reminding him of the submission of the assignment that the student entered..

Also, use the notification window to alert the student about the date of an assignment submitted by the teacher or the date of a quiz .



Figure 6.4.22 : DoList notification

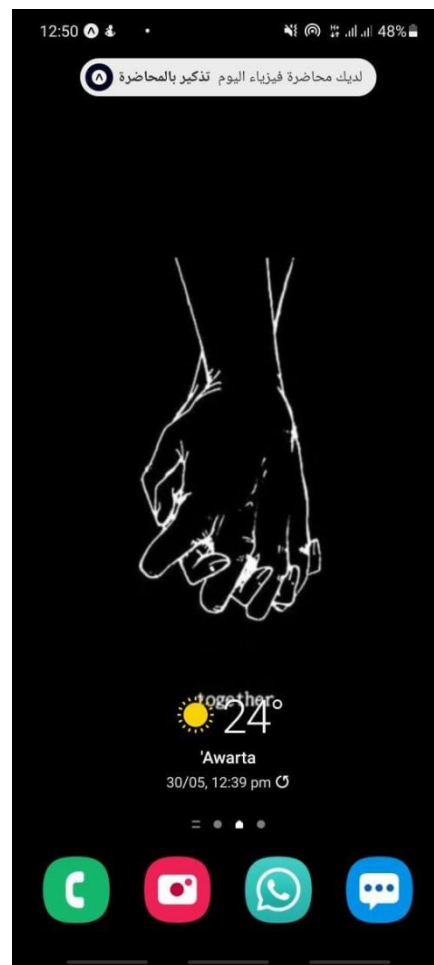


Figure 6.4.22 : Lesson reminder notification

## 6.5 User (Parents) Mobile Application

### 6.5.1 Home Page

The home page for parents is divided into two sections. The first is in the event that the parent registered an account in the institute's application, but there is no student registered with the institute for the same parent who entered the application.

The second case is that there are one or more students registered at the institute, and the parent also registered at the institute and entered the application.

➤ Case 1 :

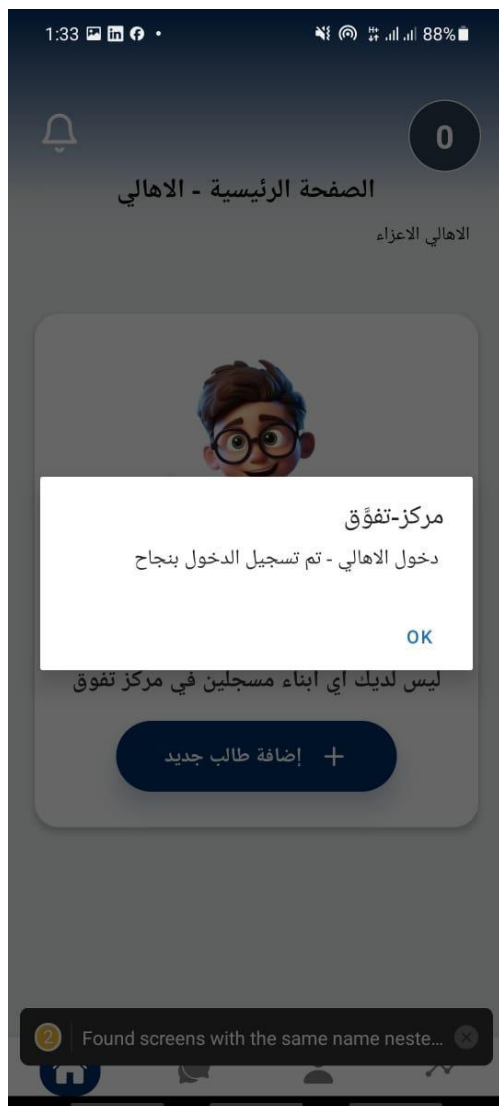


Figure 6.5.1 : New Parent home page



Figure 6.5.1 : New Parent Home Page



## Case 2:

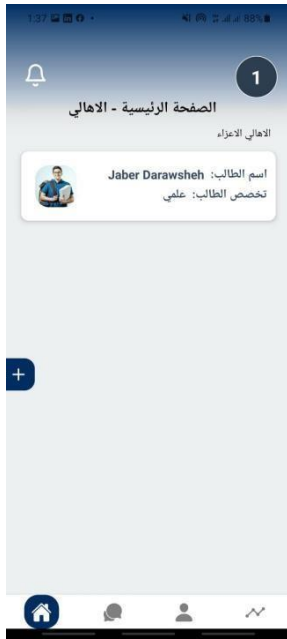


Figure 6.5.1 : Parent Home Page



Figure 6.5.1 : Parent Home Page



Figure 6.5.1 : Parent Home Page

## 6.5.2 Track The Child Grads

The mobile application enables parents to follow and view the schedule of grades of their son, a high school student, and makes it easier for them to analyze the grades by clicking on the academic level assessment.



Figure 6.5.2 : Parent Track Grades Page



Figure 6.5.2 : Parent Track Grades Page

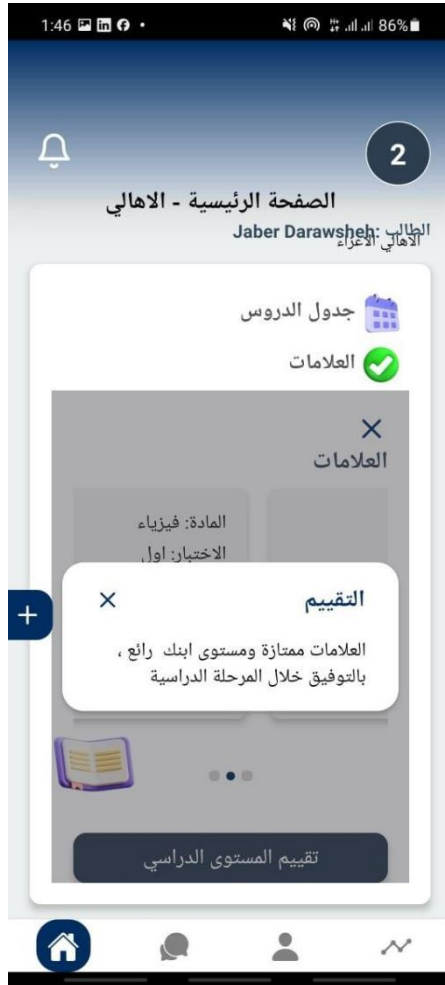


Figure 6.5.2 : Parent Analyze Grads

### 6.5.3 Track The Child Time Table



Figure 6.5.3: Parent Track Time Table

## 6.5.4 Track The Child (Tasks) Feedback to Parents

Parents receive weekly feedback from teachers on the level of tasks presented by the student, expressed in a graphic curve.



Figure 6.5.4 : Parents Feedback



Figure 6.5.4 : Parents Feedback

## 6.5.5 Chat System

A real-time chat application between parents and teachers that facilitates the process of obtaining feedback about the student from the teacher.

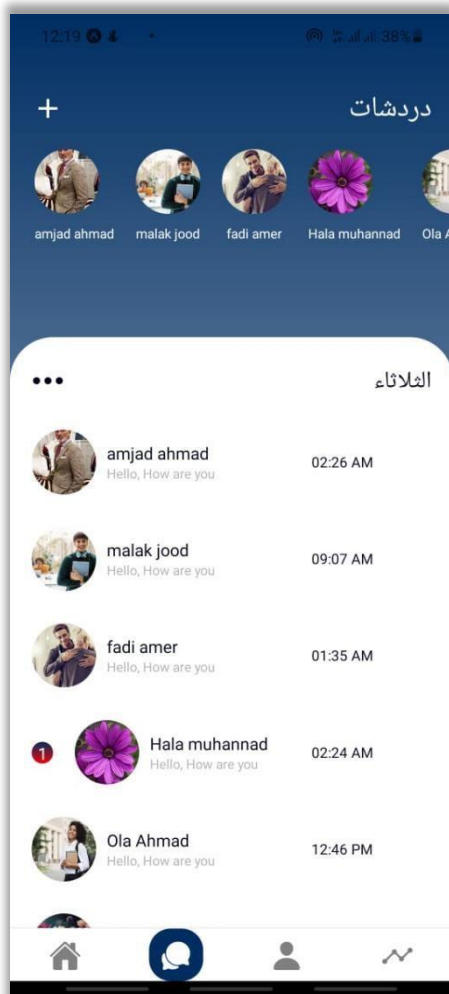


Figure 6.5.5 :Parents Chat Page

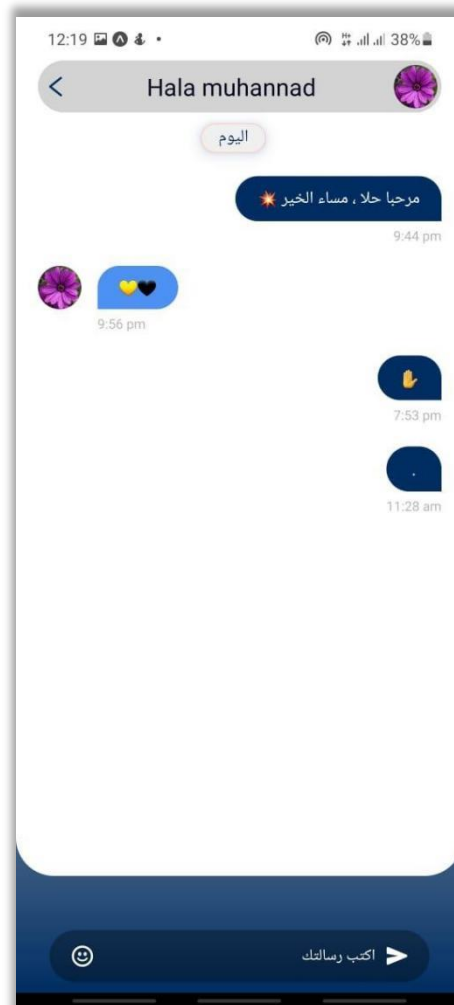


Figure 6.5.5 : Parent Chat Conversation

## 6.5.6 Real-Time Notification

Alert and notify the guardian that an exam has been corrected for the student or that the student has been registered at the institute.

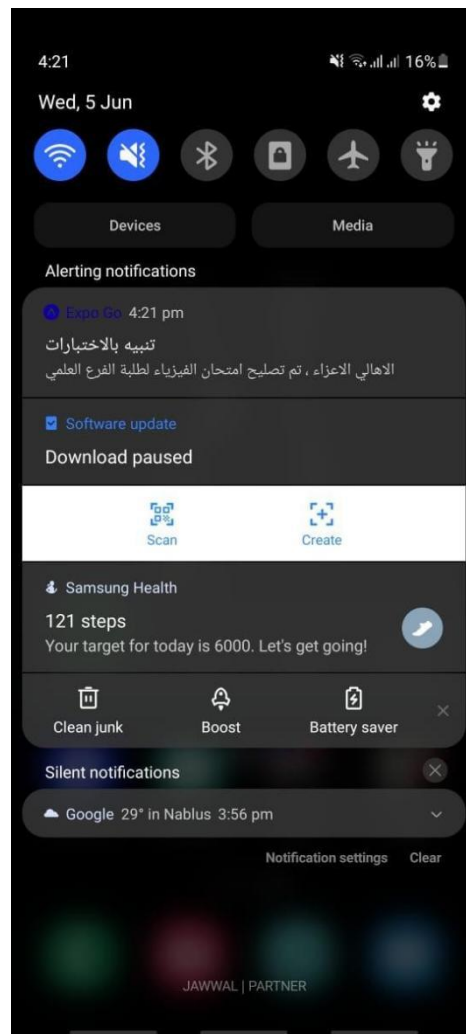


Figure 6.5.6 : Parent Notification

## 6.5.7 Registering Their Children

1:52 85%

رجوع ←

### الاهالي - إضافة طالب جديد

رقم الهوية

الاسم

الجنس

كلمة المرور

التخصص

اسم المدرسة

تحميل صورة للطالب

إضافة طالب جديد +

Figure 6.5.7 : Add Student

1:55 84%

رجوع ←

### الاهالي - إضافة طالب جديد

رقم الهوية

الاسم

الجنس

كلمة المرور

التخصص

اسم المدرسة

تحميل صورة للطالب

إضافة طالب جديد +

**عزيمي المستخدم**

الرجاء تعبئة كل البيانات المطلوبة.

موافق

Figure 6.5.7: Add Student

2:32 76%

رجوع ←

رقم الهوية  
646464466464

الاسم  
عامر

الجنس  
ذكر

كلمة المرور  
.....

التخصص  
ادبي

اسم المدرسة  
ناپلس الثانوية

تحميل صورة للطالب ✓

إضافة طالب جديد +

Figure 6.5.7 : Add Student

2:33 76%

رجوع ←

رقم الهوية

الاسم

الجنس

كلمة المرور

التخصص

اسم المدرسة

تحميل صورة للطالب ✓

إضافة طالب جديد +

**تسجيل الطلاب**  
تم تسجيل الطالب عامربنجاح

حفظ

Figure 6.5.7 : Add Student

## 6.5.8 Edit Profile Information

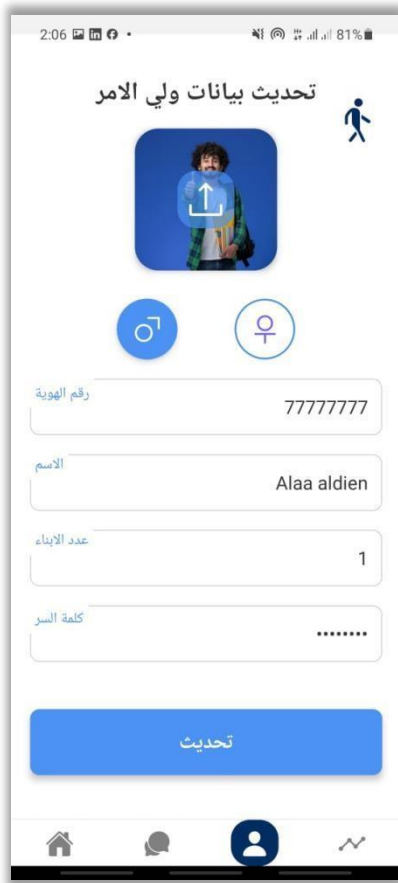


Figure 6.5.8 : Update parent Information

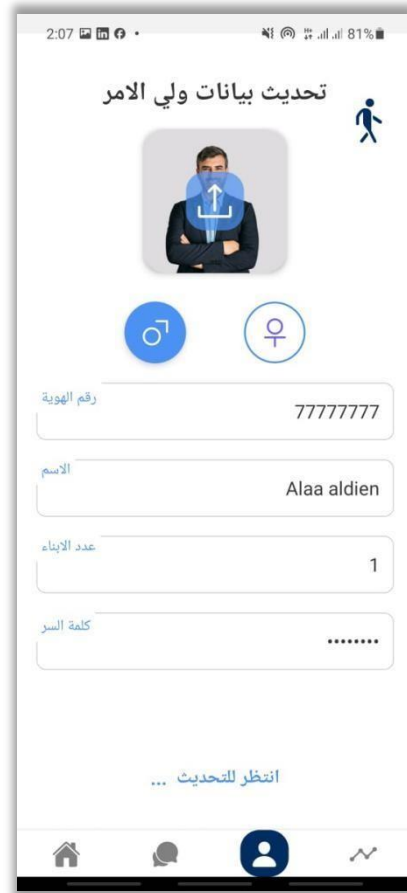


Figure 6.5.8: Update parent Information

## **Chapter 7**

### **Results and Discussions**

The images above demonstrate how the application achieved its objectives with excellent efficacy and a user-friendly experience.

The project's aim was to create an attractive and easy-to-learn environment where parents could track their children's education. The administrator has the authority to accept or reject job applications, and teachers can create multiple examinations and send class lessons, notes, and files to their students.

During the process of developing the software, there were many difficulties. Our present system was not always suitable for the way software releases evolved.

The application has been developed effectively in accordance with our specifications and vision, despite encountering obstacles, yielding satisfactory results.

# Chapter 8

## Conclusion and Recommendations

### 8.1 Conclusion

As a result of the project, we were able to create an application for high school students that includes quizzes, assignments, and classroom lessons that are linked to theoretical files for clarification. The program was thoughtfully created to be user-friendly and accommodate the needs of the Palestinian student in the middle of his many challenges.

### 8.2 Future work

We aspire to integrate artificial intelligence into our website, as it can make it easier for the teacher, for example, in the question setting feature and to set questions through the files that the teacher attaches to the students.

# Chapter 9

## References.

- Simonson, M., Smaldino, S., Albright, M., & Zvacek, S. (2019). *Teaching and learning at a distance: Foundations of distance education* (7th ed.). Information Age Publishing.
- Pichler, D., Zinnbauer, M., & Deimann, M. (2018). *Handbook of distance education* (2nd ed.). Routledge.
- Baker, R. S., D'Mello, S. K., Rodrigo, M. M. T., & Graesser, A. C. (2014). *The handbook of educational psychology* (2nd ed.). American Psychological Association.
- Wang, S., & Woo, T. L. (Eds.). (2017). *Adaptive learning: Design and implementation*. Springer.
- Black, E. W., & Jerej, I. A. (2018). *Digital technologies in design and technology education: The digital natives are restless*. Springer.
- Purcell, K., Buchanan, J., & Friedrich, L. (2018). *How teachers are using technology at home and in their classrooms*. Pew Research Center.
- Warschauer, M., & Healey, D. (2009). *Technology and social inclusion: Rethinking the digital divide*. MIT Press.
- van Dijk, J., & Hacker, K. (2009). *The digital divide as a complex and dynamic phenomenon*. Information Society.
- Clark, R. E., & Kozma, R. B. (Eds.). (2018). *Learning technologies and the future of schooling*. Springer.
- Linn, R. L., & Mislevy, R. J. (2009). *Computer-based assessment of student learning*. Springer.