An-Najah National University

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Portal

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Acknowledgements

“

First of all, we would like to thank our supervisor, Dr. Asmaa Afeefi, for her consistent efforts throughout the semester, and for being completely prepared to assist us with scientific support. We would also want to thank all of the academics in the Department of Computer Engineering who assisted us when we inquired, and last but not least, we thank our friends and family. Those who gave us their undivided attention and believed in our ability

”

Disclaimer

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Chapter 1

Abstract

Our application is a portal designed for a university, considering three categories: Students, doctors and admin. This app is designed to help the academic staff and the students in things related to university.

For students, the application provides a user-friendly interface to register for courses, view their marks, and stay updated with the latest university news through a dedicated news page and other things. This empowers students with easy access to their academic information and enables them to manage their courses efficiently.

for doctors they have a lot of features helping them to manage their courses by seeing who is participated in it, generate exams for the courses automatically, grading the students, add news for the students and other things.

The admin is responsible for registering students and doctors, adding news, add courses for the doctors to keep the app up to date with the university requirements.

Overall, this mobile application serves as a centralized hub, connecting students, doctors, and admins within the university. By providing a seamless user experience and essential features such as course registration, grade tracking, news updates, and exam creation, the application aims to enhance communication, streamline administrative tasks, and foster an efficient learning environment for anyone involved.

Chapter 2

Introduction

2.1 Background

Any university must have a system to organize the communication between the students and the doctors, by registering them, or the courses, exams, news and a lot of other things. so we designed an app to help doing this things in a user-friendly interface.

2.2 Purpose

This app makes is easier for the students and the doctors to manage their needs and duties in the university by providing a lot of features.

2.3 Objectives & Scope

This project is an application that helps students, doctors and admin to do what they want.
To meet the needs, the project do the following :

1. Admin **creates an account** on the application by filling in the student or doctor information, and upon correct registration, an email is sent to them containing their information and the automatically generated password.
2. **displaying news** to the students which are added by the doctor or the admin.
3. The doctor can generate a PDF **exam** automatically from an already existed questions and can also specify the grade and grade the students.
4. Students can **See** their marks in the semester, and their final marks.

2.4 Report Organization

- In the next chapter (**Constraints & Earlier Coursework**) , we will discuss what difficulties we faced in our project and how we were able to overcome them, in addition to the courses that helped us in this project.
- In the fourth chapter (**Literature Review**) , we will review some of the works and projects similar to ours and how our project differs from these projects.
- In the fifth chapter (**Methodology**) , we will discuss in detail the system process, what is included in the project in detail and what technologies we used.
- The sixth chapter (**Results & Discussion**) is a talk about the project results and what is the expected from the project.
- In the final chapter (**Conclusion**) , we will briefly discuss the most important things that went through the project and what we learned from it, in addition to some recommendations that may be developed to be implemented in the future.

Chapter 3

Constraints & Earlier Coursework

3.1 Constraints & Limitations

On our way to finish the project we encountered a lot of difficulties and challenges, some of these challenges required us to put a lot of effort in order to achieve the best possible results. One of the challenges that we faced was the fact that we changed the idea that we initially started working on, this cost us a lot of time, effort and knowledge, since we couldn't completely achieve what we wanted initially and we didn't get the results we were hoping for. Therefore, we decided to change our idea, to the university portal project. The main challenge that we faced when working on this project was the lack of information and knowledge when it comes to coding a mobile application. This took a lot of time since we need to learn new technologies that we have not dealt with before. We also encountered a lot of obstacles during the implementation phase, we also discovered a lot of features that we needed to add or change.

3.2 Earlier Coursework

There are many courses we took that were use full, some of them were from the department of computer engineering and the rest were from online courses.

- **Data Base Management course** this course taught us how to deal with the SQL database and deal with the server side using PHP language.
- **Web Development course** which is interested in the programming languages that help to accomplish websites and applications such as HTML, CSS, JavaScript and PHP.

- **Software Engineering course** All the approaches and principles were covered in this course, such as architecture and requirements, were very helpful to implement this project.
- **Flutter** online course on udemy.

Chapter 4

Literature Review

University Portal's project aims to facilitate as much as possible for students, doctors and admin that organizes the communication between them. It helps students register their courses, review their exams and learning material, learn about recent news and a lot of other things. One of the advantages of the application is the user-friendly interface. The app makes it easier for students and doctors to manage their needs and duties by providing a lot of features that help the entire community. Projects like this one:

1. **Zajel:**
   Zajel is an effective website that helps student register their courses and learn about recent university news. The issue with this website is that it uses old technology and isn't as modern. The user-interface isn't as good as well. We tried to add a lot of features that are missing in Zajel

4.1 What did University Portal bring?

One of the things that makes our project unique is the mobile application, in addition to that, it contains a lot of features that are missing in the previous websites and projects. One of the main things that we took into consideration is the user interface. We added the question bank to the website that is set to help doctors with their tests and exams, a feature that is missing in previous projects. We also took care that there is a notification system that helps the users respond to anything that happens, whether a grade was published, a project was added, a message received etc. Its purpose is to make the user journey easier and simpler with attention to any recent details.
In addition to all of that, any recent news directly from the doctors to their students is sent directly to the students, which makes the communication between them a lot simpler and better.

Chapter 5

Methodology

In this chapter we will discuss in detail the system process, what is included in the project in detail and what technologies we used.

5.1 Used technologies

In this section we are going to talk about the technologies that we used to build our project.

5.1.1 Flutter

Flutter is an open-source framework by Google for building beautiful, natively compiled, multi-platform applications from a single code base.

Why Flutter?
Since it operates within a single code base and renders into native code on each platform, Flutter engineers can create native-like applications faster and with lower development costs. Flutter apps comply with iOS, Android, Windows, Mac-OS and other platforms.

5.1.2 PHP

PHP is a server-side scripting language embedded in HTML in its simplest form. PHP allows web developers to create dynamic content and interact with databases.

Why PHP?
PHP is known for its simplicity, speed, and flexibility — features that have made it a cornerstone in the web development world. The open-source tools and high running speed make PHP one of the most preferred languages for creating interactive websites and web applications.

5.1.3 MySQL

MySQL is one of the most popular open-source DBMS (database management systems). MySQL is easy to use, reliable, and fast. A DB management system that works on embedded systems as well as client-server systems.
Why MySQL?
One of the reasons MySQL is the world's most popular open source database is that it provides comprehensive support for every application development need. Within the database, support can be found for stored procedures, triggers, functions, views, cursors, ANSI-standard SQL, and more.

5.1.4 Other technologies & tools

We also used some technologies that helps us to make more features and be more functionality like **Firebase**, to use in the notification system.

5.2 Application

The app differs as the user differs student, doctor or admin. we will start in the common things.

5.2.1 Welcome and logging in

When the user opens the app the first thing he gets is a welcome page,it will stay for 3 seconds:

Figure 5.1: Welcome Page

after that he will be redirected to a login page to enter his credentials to access the app:

Figure 5.2: login page

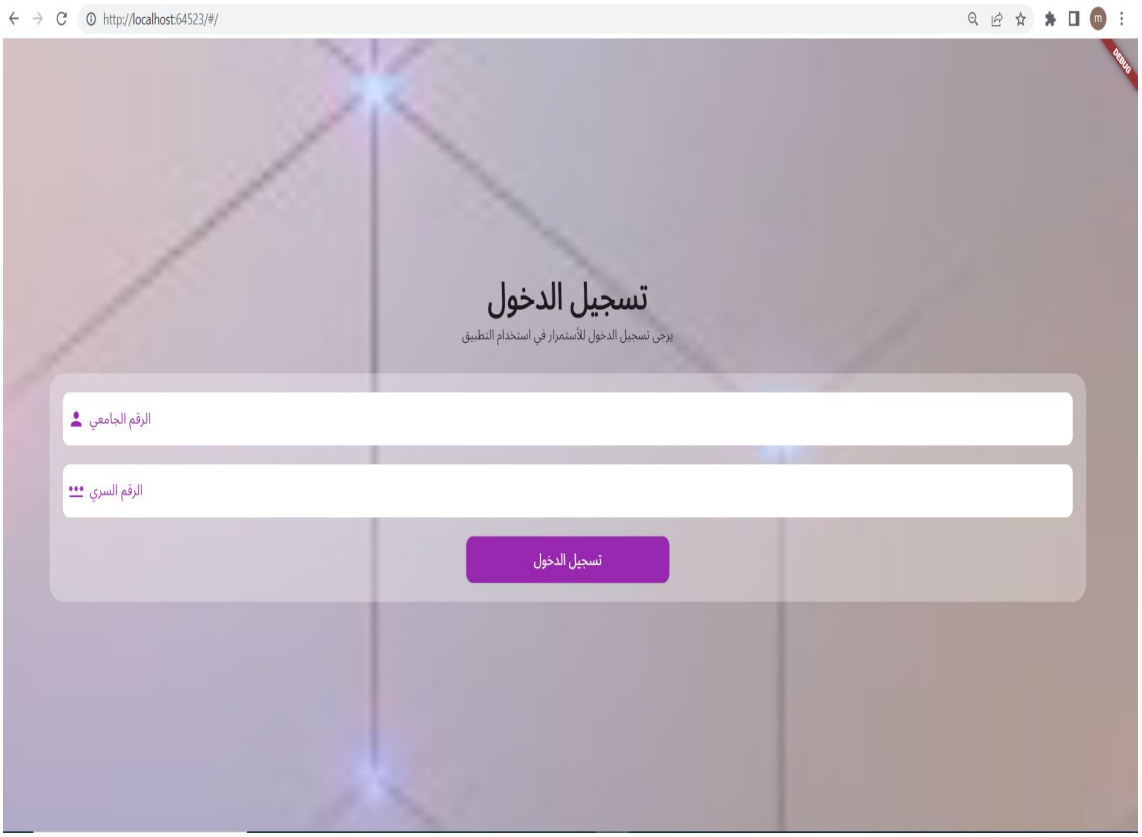


Figure 5.3: Web login page

if he doesn't fill up the fields he will get an error:

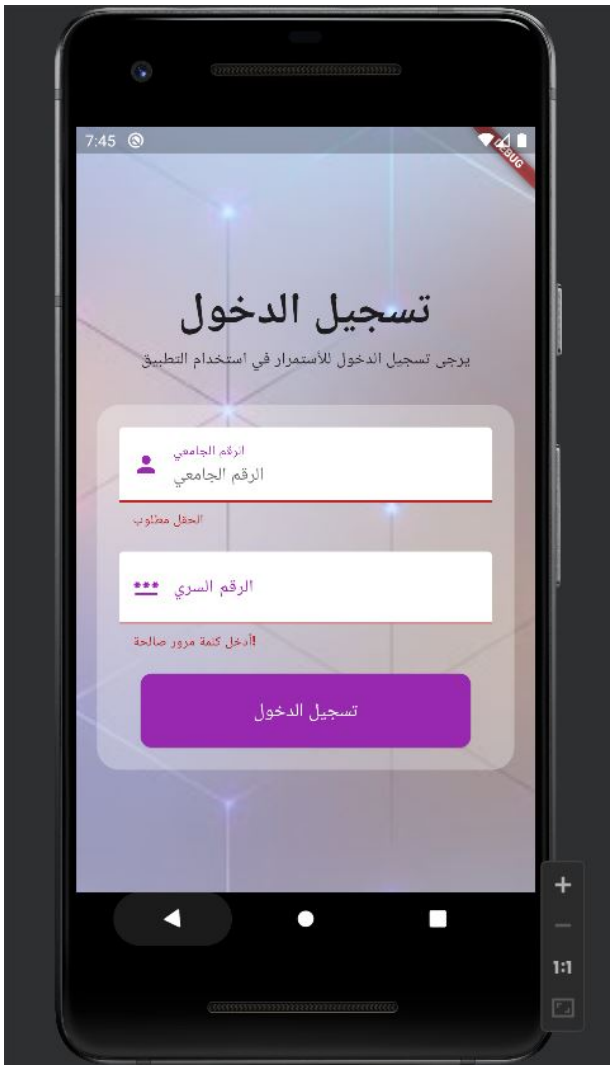


Figure 5.4: no info login page

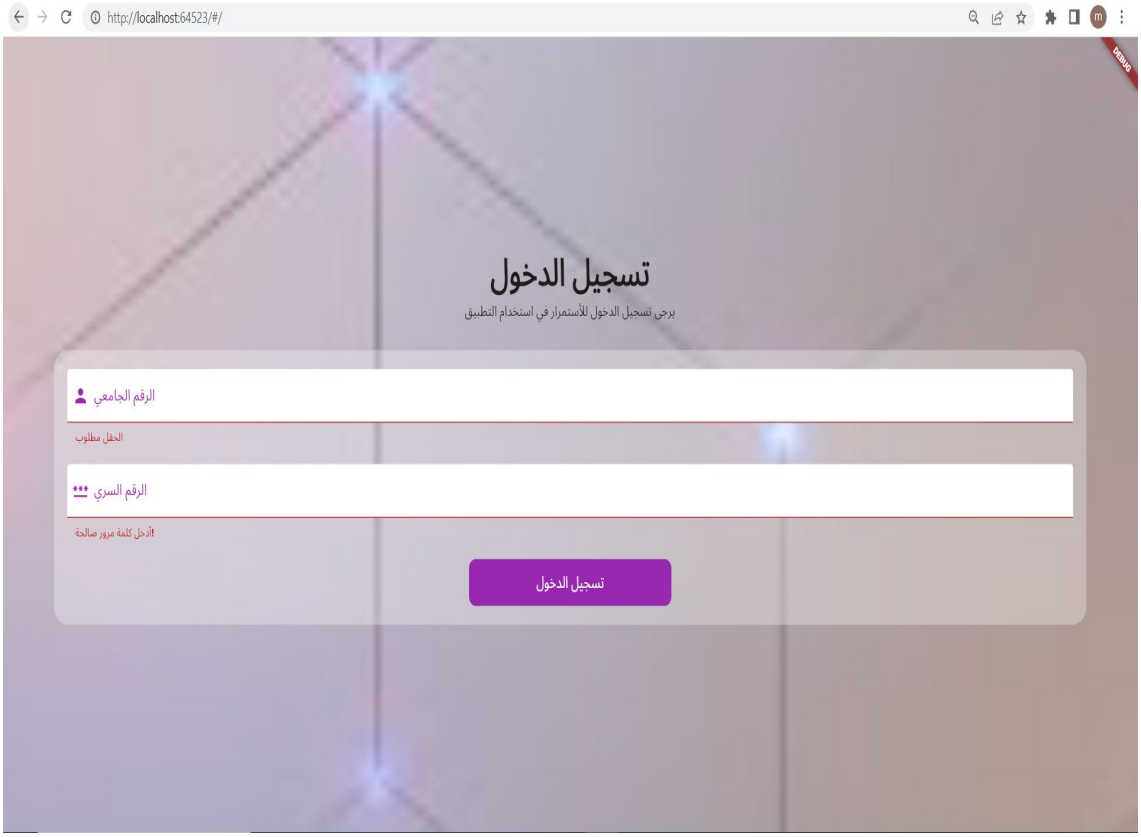


Figure 5.5: no info login page

or if he enters wrong credentials he will get another error:

Figure 5.6: incorrect info login page

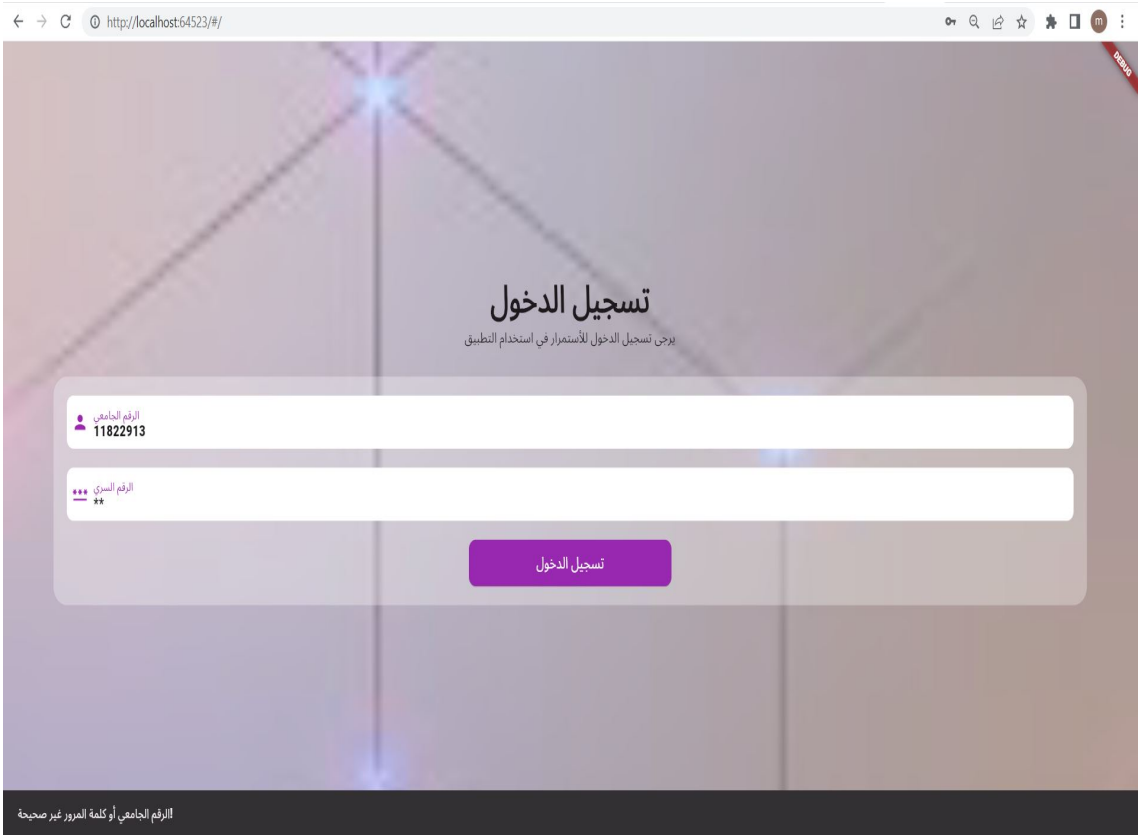


Figure 5.7: Web incorrect info login page

Students

Here are the student pages that he can navigate through:

Figure 5.8: Student Main page

5.2.2 News

The student see the news published by the doctor or the admin at the news page which appears when he first login in the app he also can navigate through the app pages using the bar in the bottom of the app.

Figure 5.9: Student News

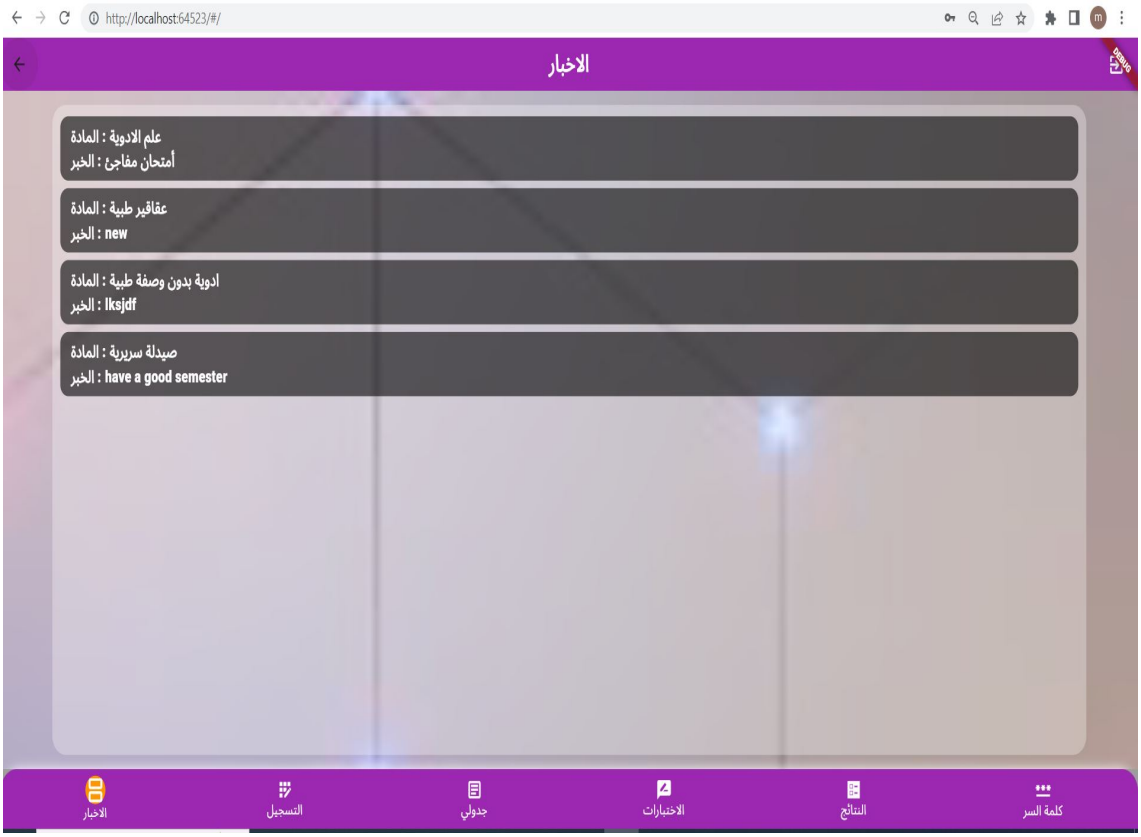


Figure 5.10: Web Student News

5.2.3 Registering

here the student can register to the courses in his specialty

Figure 5.11: Student Registration

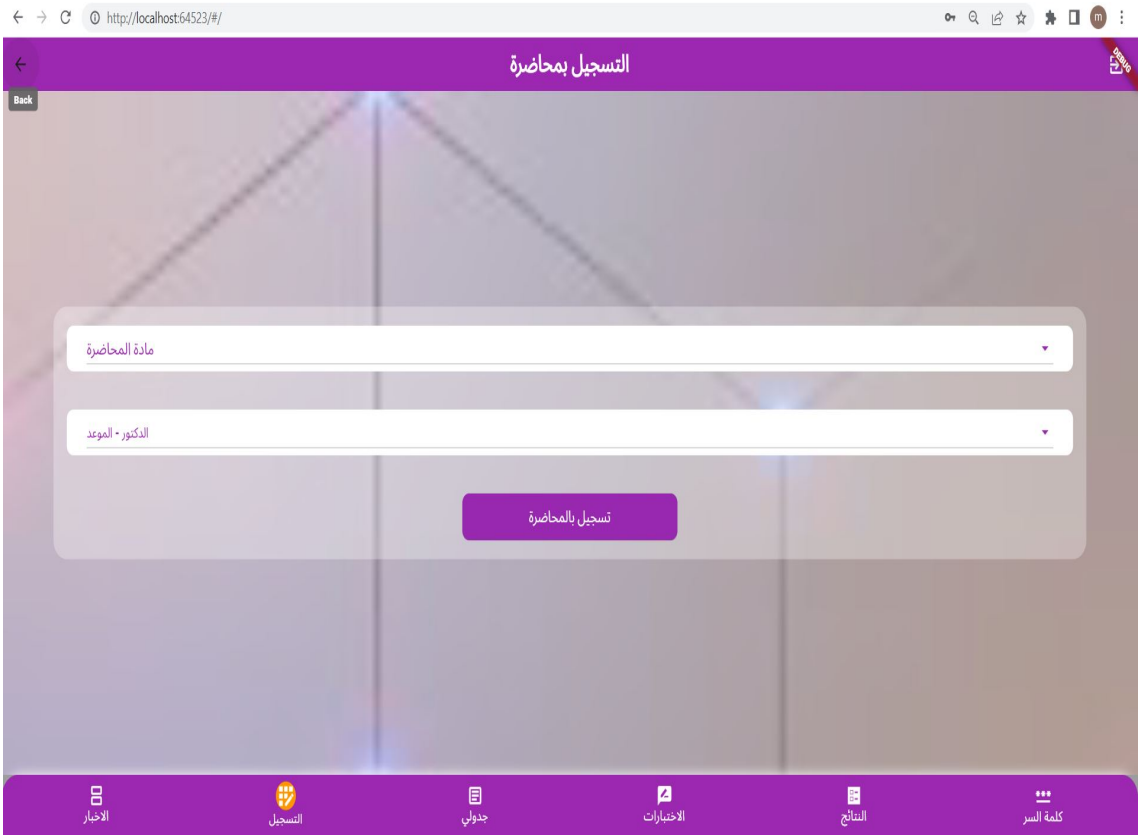


Figure 5.12: Web Student Registration

5.2.4 Schedule

here the student can see the courses he registered in, its time and day.

Figure 5.13: Student Schedule

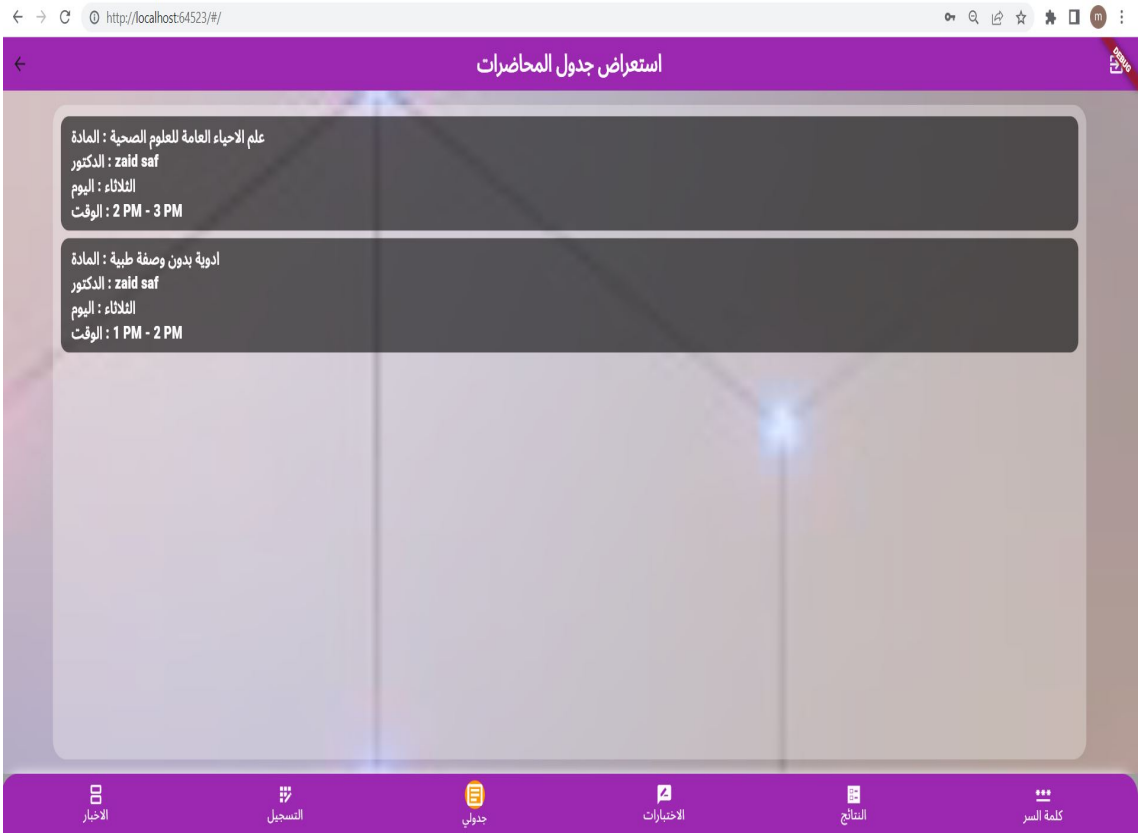


Figure 5.14: Web Student Schedule

5.2.5 Marks

here the student can see his marks in the semester.

Figure 5.15: Student Marks

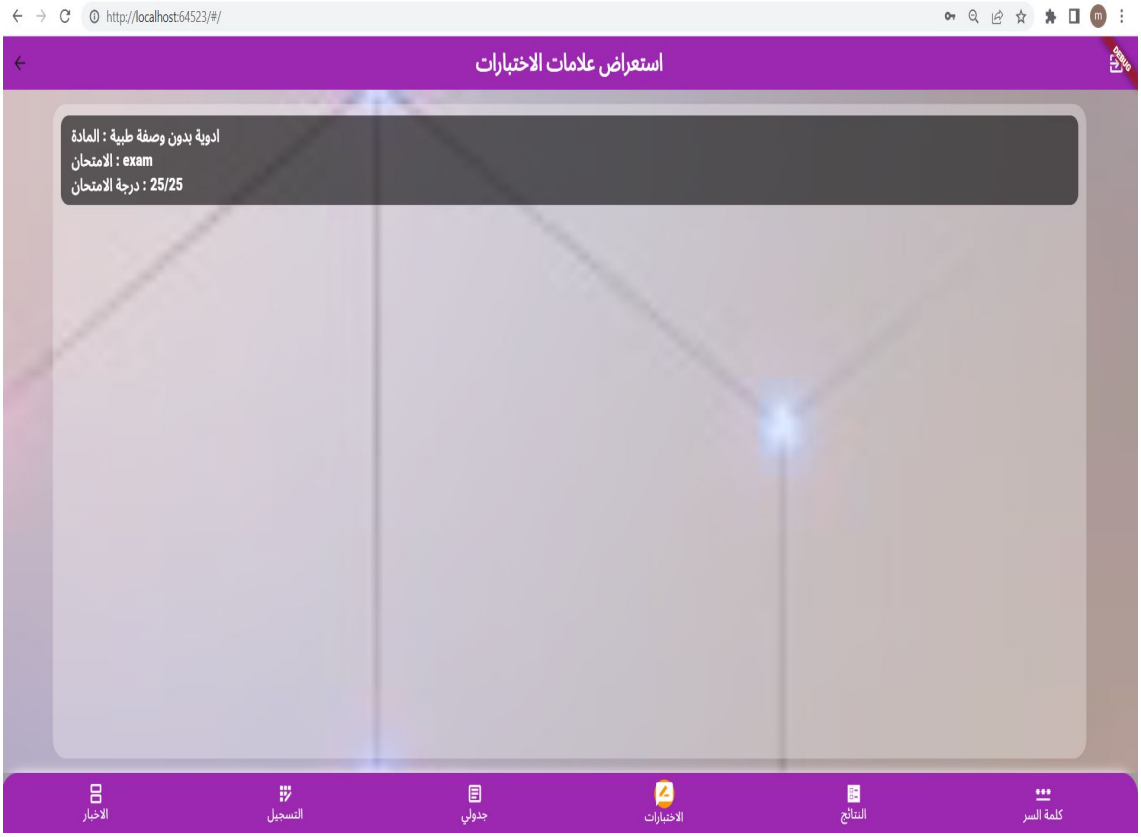


Figure 5.16: Web Student Marks

5.2.6 Final marks

here the student can see his final marks in the courses.

Figure 5.17: Student Final Marks

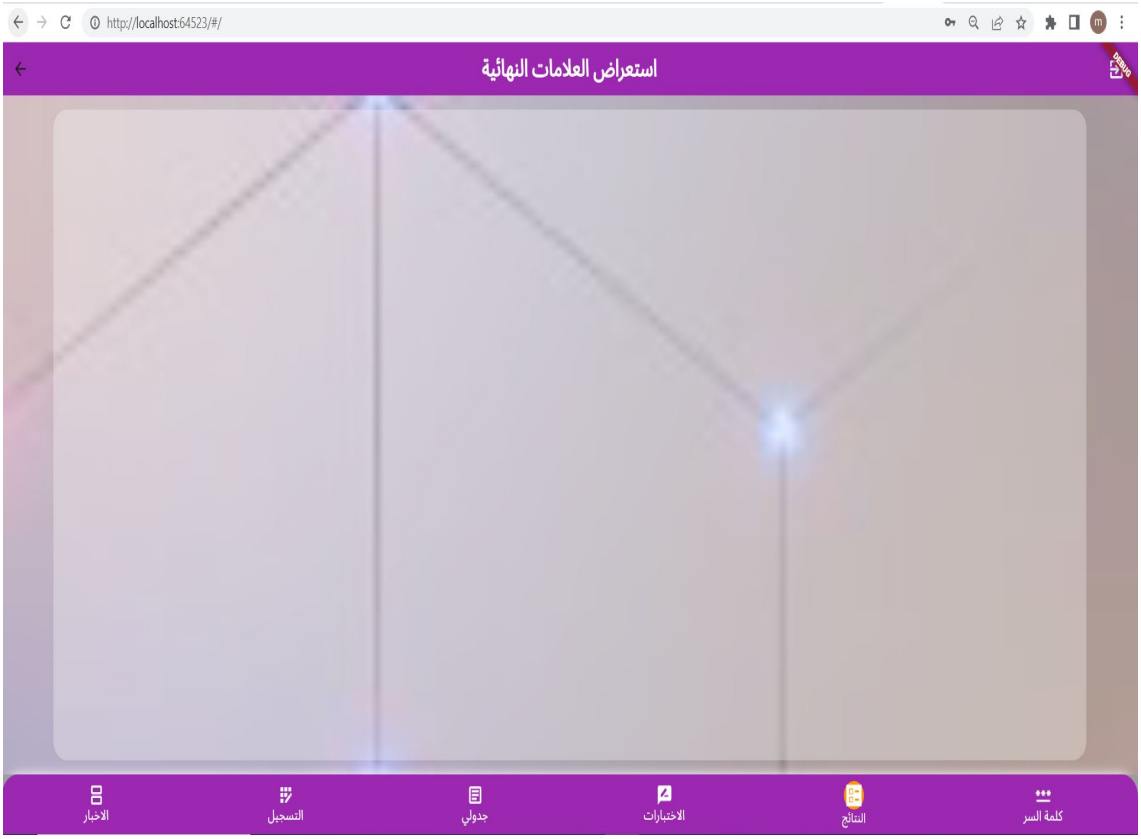


Figure 5.18: Web Student Final Marks

5.2.7 Change Password

here the student can change his password.

Figure 5.19: Change Password

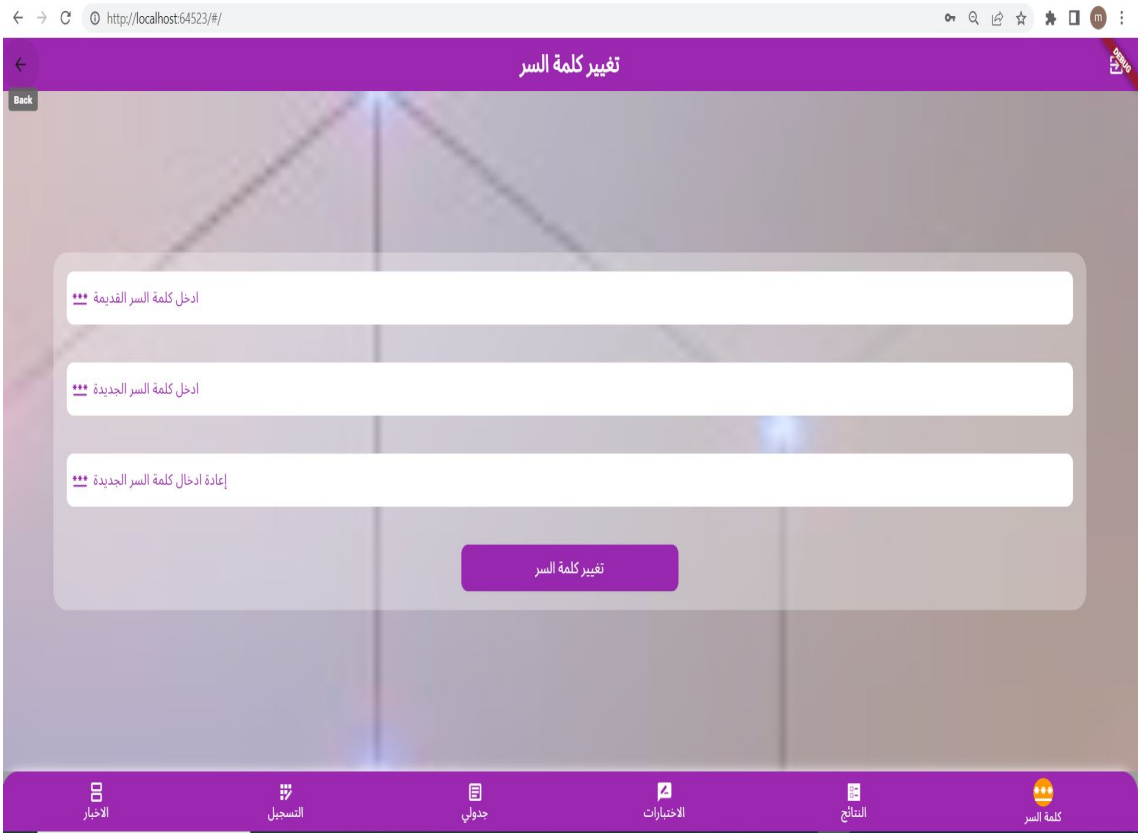


Figure 5.20: Web Change Password

Doctor

Here are the doctor pages in the app which he can navigate through the bar.

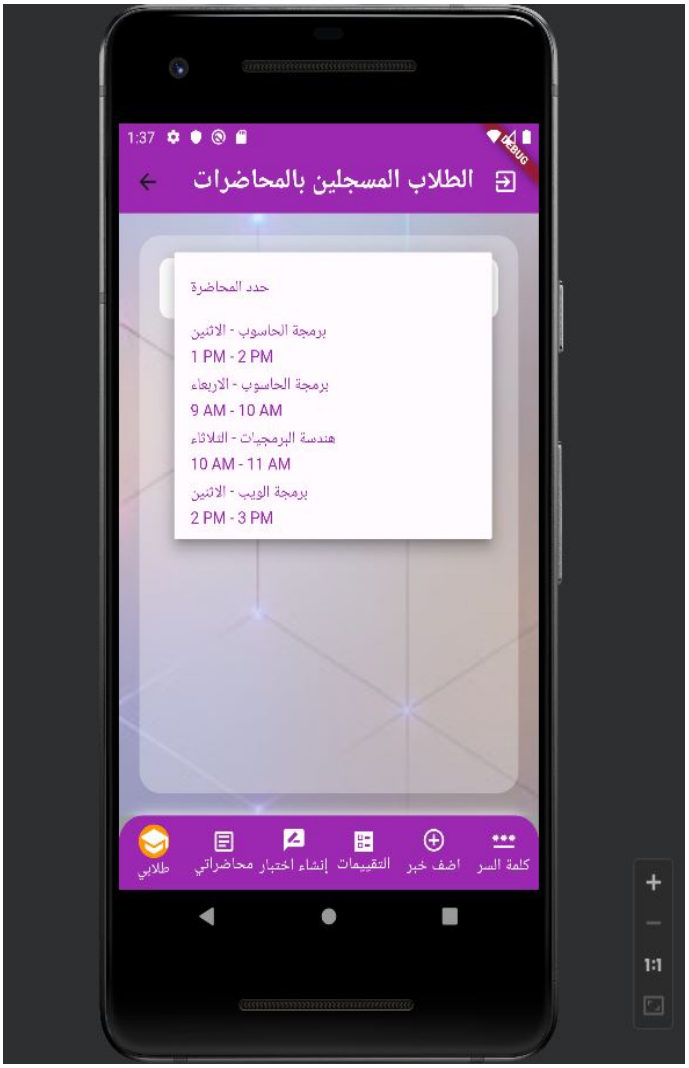


Figure 5.21: Doctor Main Page

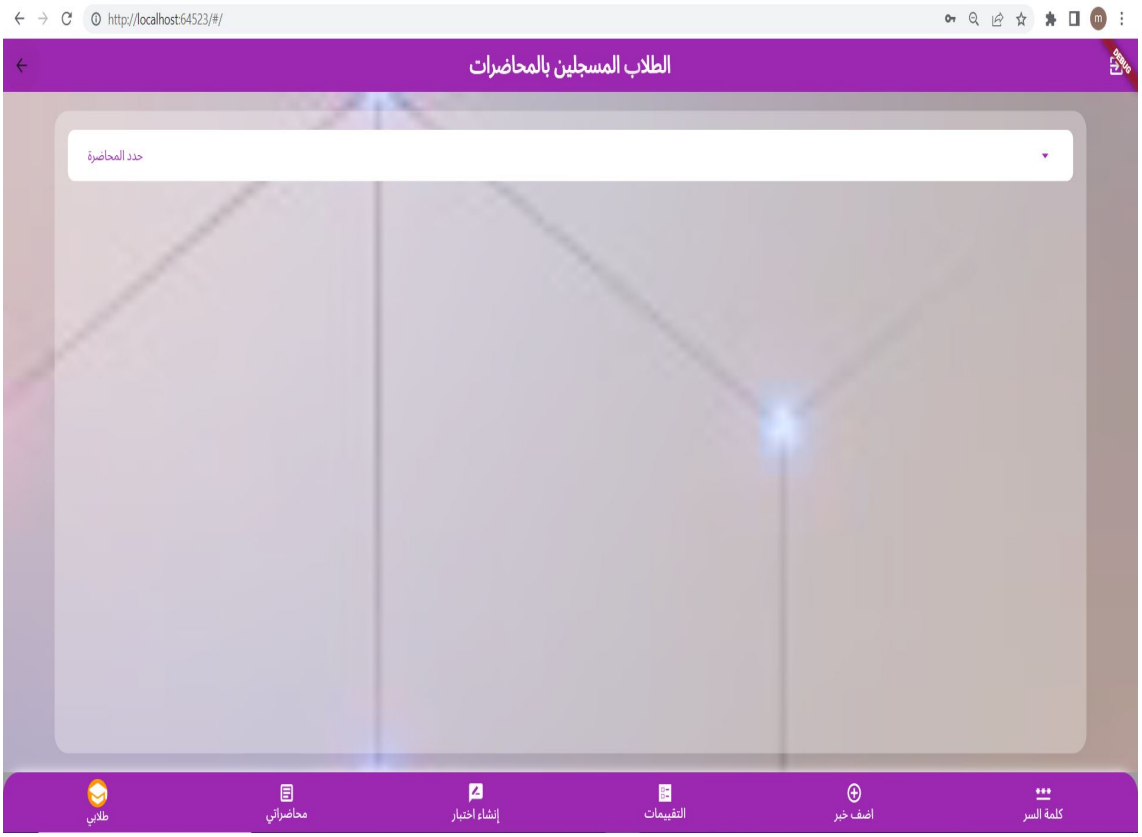


Figure 5.22: Web Doctor Main Page

5.2.8 Registered students

Here the doctor can see the students registered in his courses, he should choose a specific course:

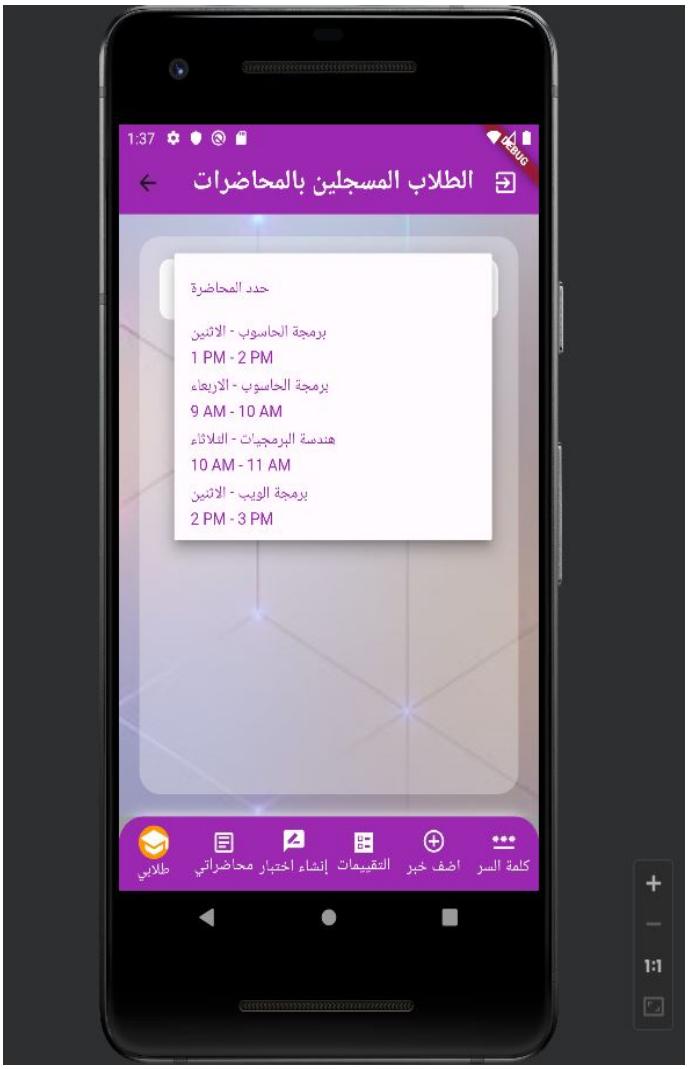


Figure 5.23: Doctor's courses

then the doctor has to choose one of the courses to see the students:

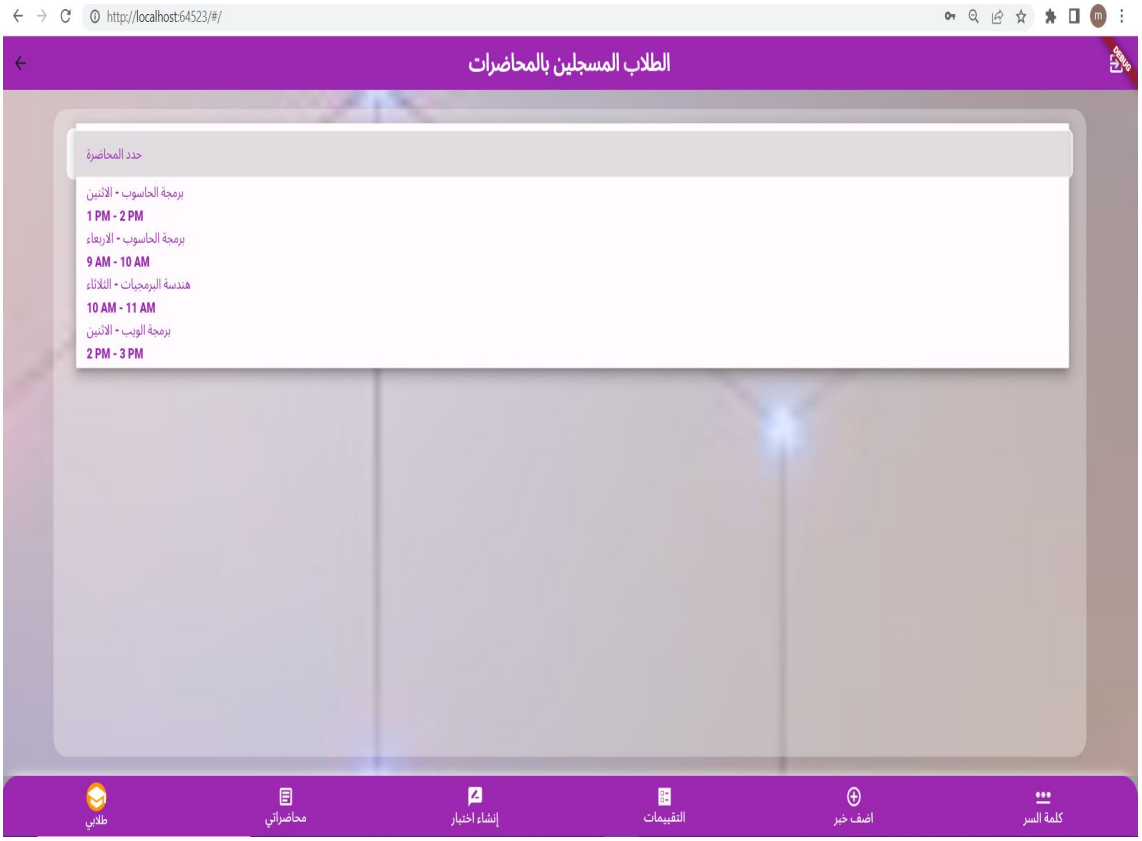


Figure 5.24: Web Doctor's Students

5.2.9 Schedule

The doctor can see the courses he is registered in:

Figure 5.25: Doctor's Schedule

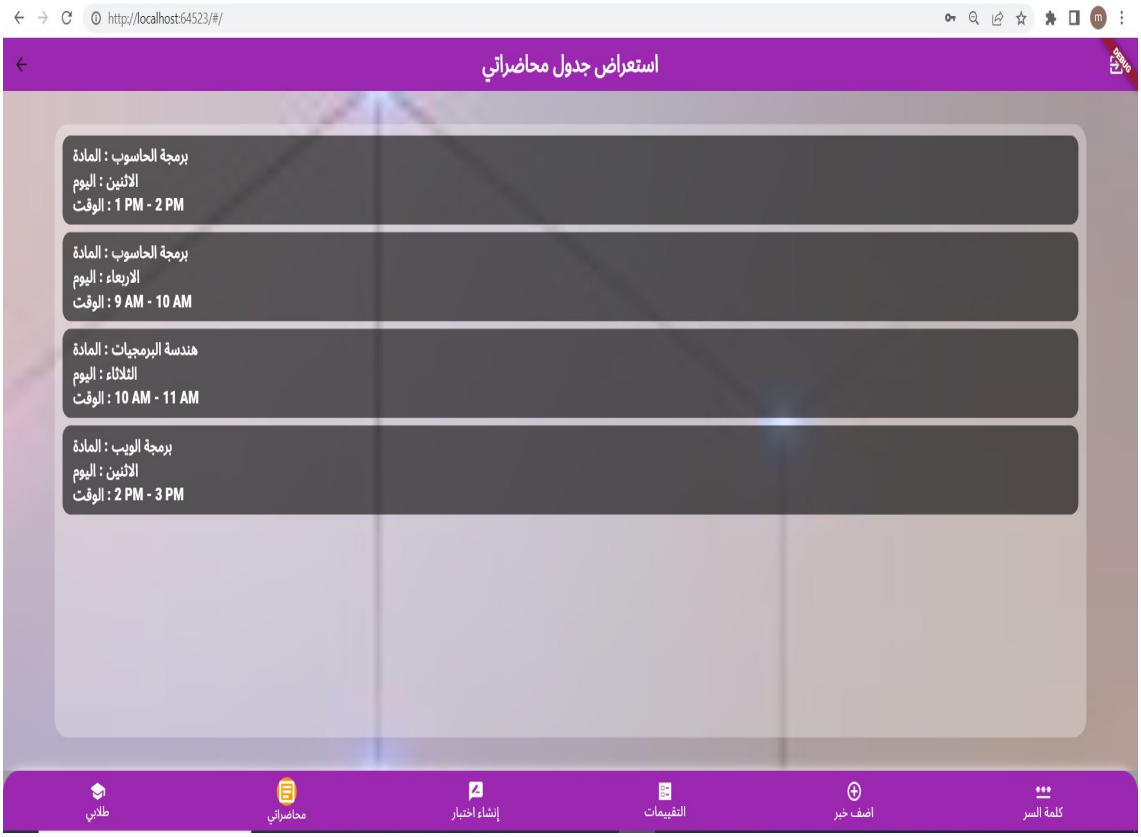


Figure 5.26: Web Doctor's Schedule

5.2.10 exam generating

in this page the doctor can generate an exam by choosing the name of the exam, the mark,the course and the subject/s from a checklist then the app will generate an exam by automatically choosing random questions from the data base on each subject then the exam will be added automatically to the marking section:

Figure 5.27: Creating Exam

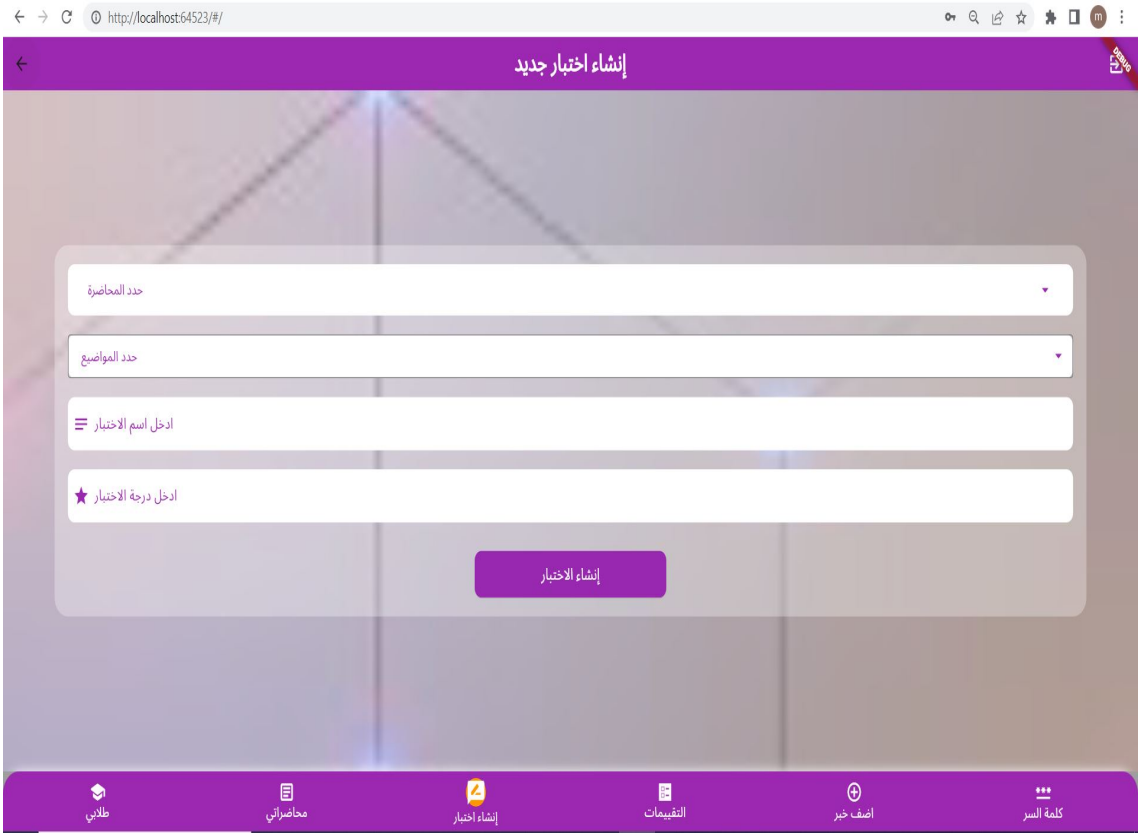


Figure 5.28: Web Creating Exam

Figure 5.29: Creating Exam

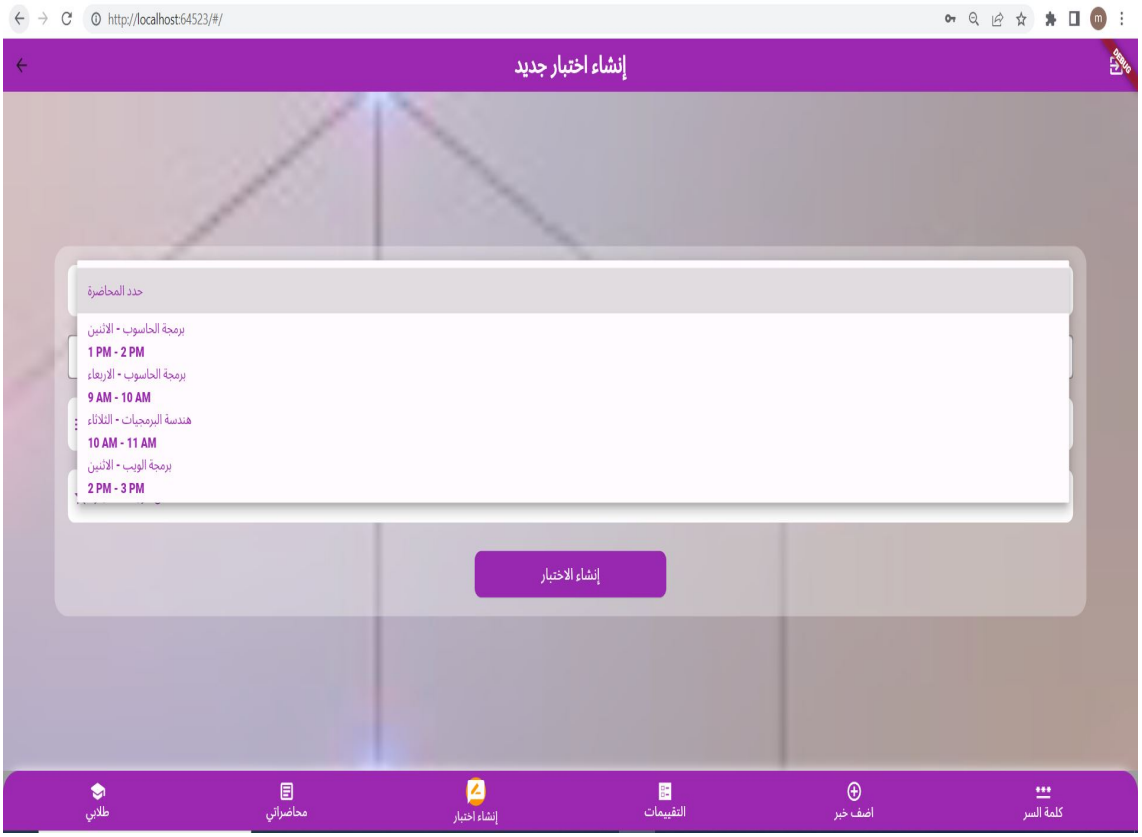


Figure 5.30: Web Creating Exam

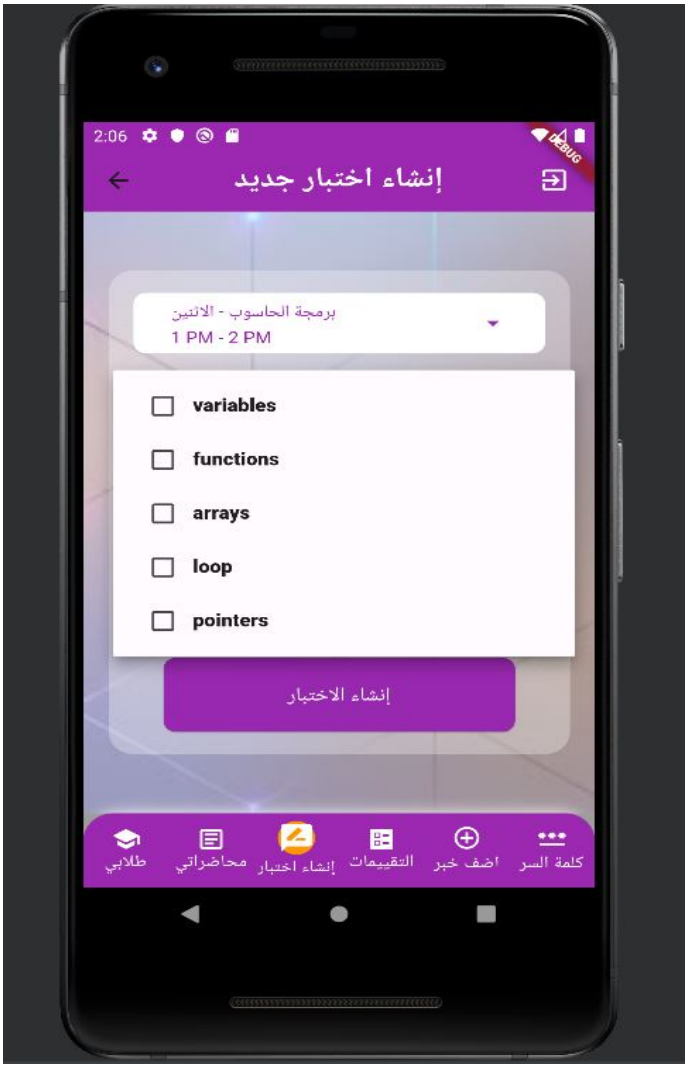


Figure 5.31: Creating Exam

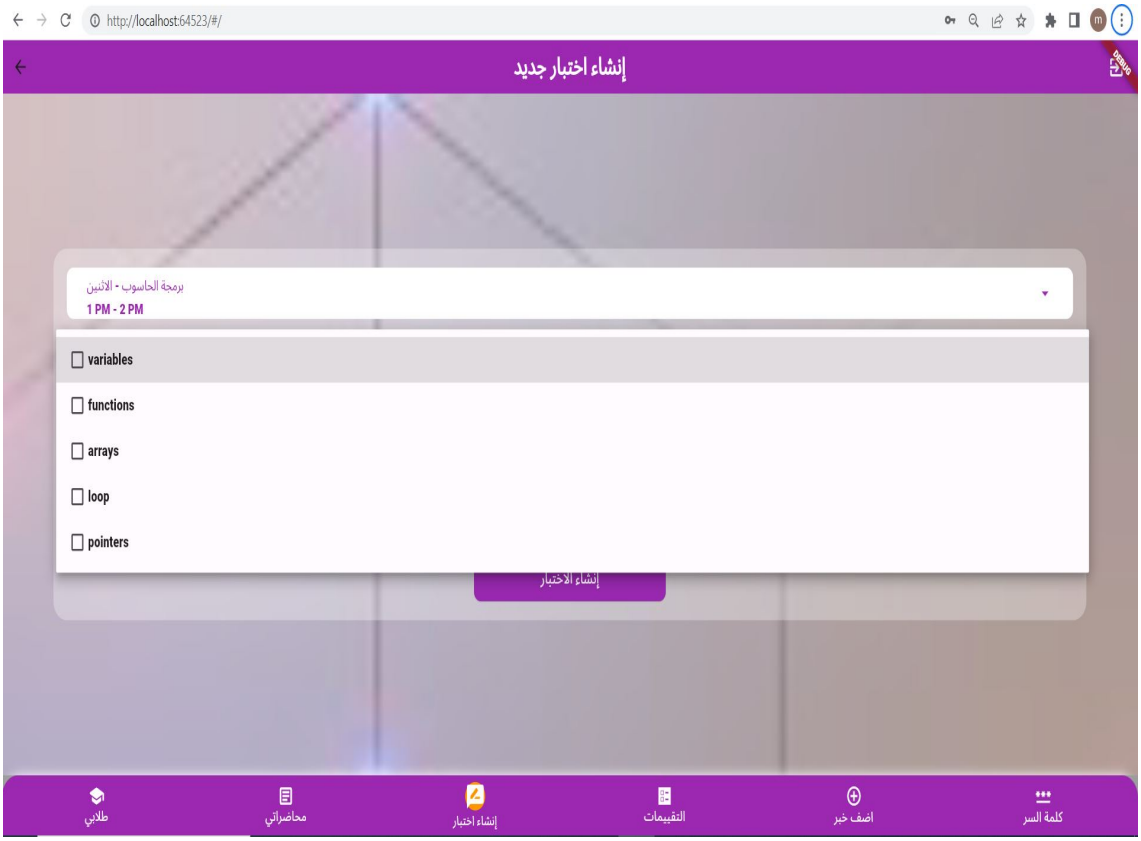


Figure 5.32: Web Creating Exam

Figure 5.33: Creating Exam

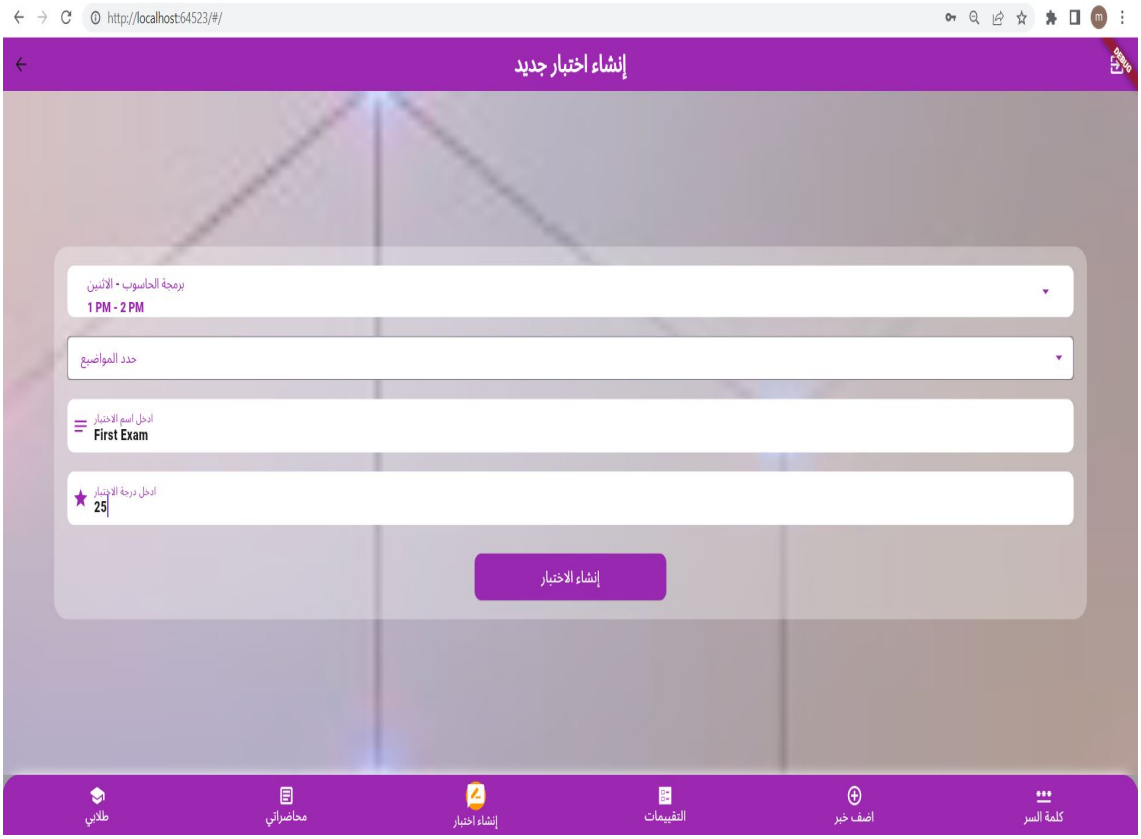
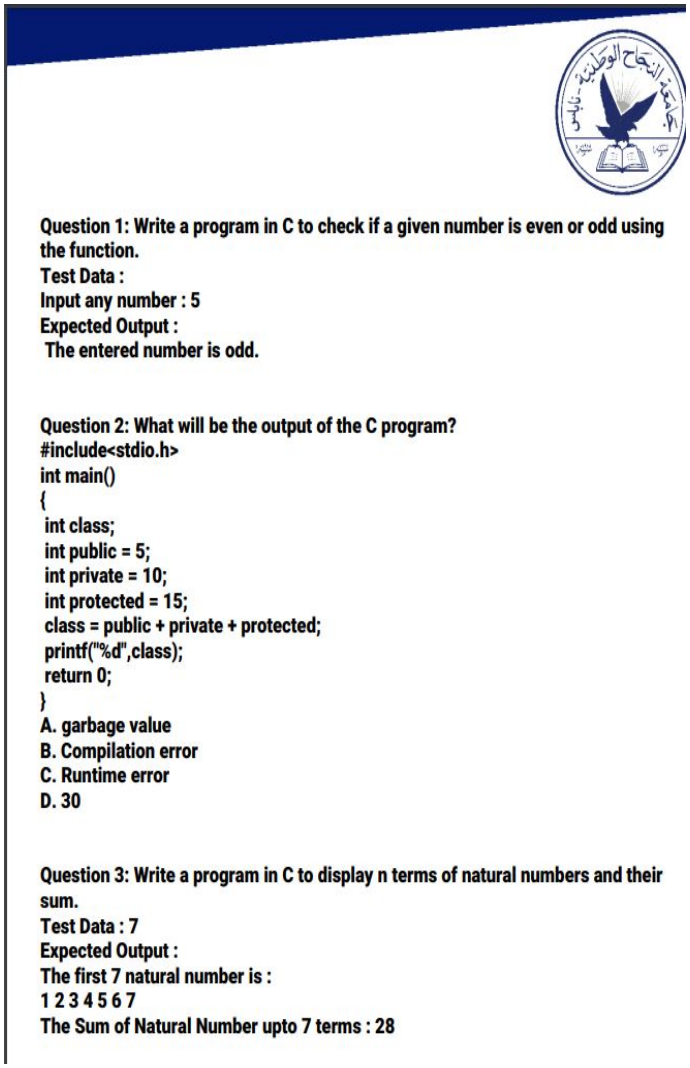


Figure 5.34: Web Creating Exam

After that, a PDF file will be generated and downloaded on the mobile with a random questions about the chosen subjects in it:



Question 1: Write a program in C to check if a given number is even or odd using the function.
Test Data :
Input any number : 5
Expected Output :
The entered number is odd.

Question 2: What will be the output of the C program?

```
#include<stdio.h>
int main()
{
 int class;
 int public = 5;
 int private = 10;
 int protected = 15;
 class = public + private + protected;
 printf("%d",class);
 return 0;
}
```

A. garbage value
B. Compilation error
C. Runtime error
D. 30

Question 3: Write a program in C to display n terms of natural numbers and their sum.
Test Data : 7
Expected Output :
The first 7 natural number is :
1 2 3 4 5 6 7
The Sum of Natural Number upto 7 terms : 28

Figure 5.35: Marking

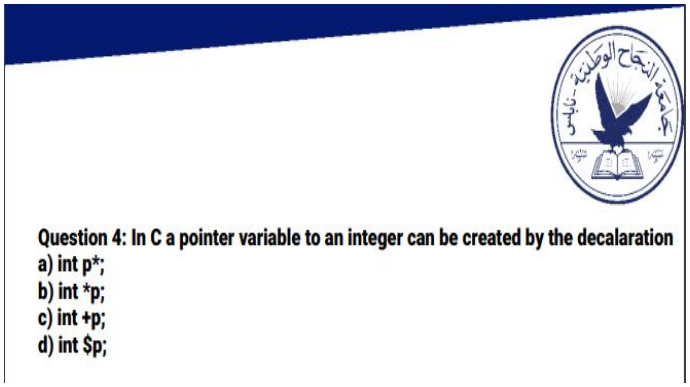


Figure 5.36: Marking

5.2.11 Marking

here the doctor can add the marks for the exam he already generated:

Figure 5.37: Marking

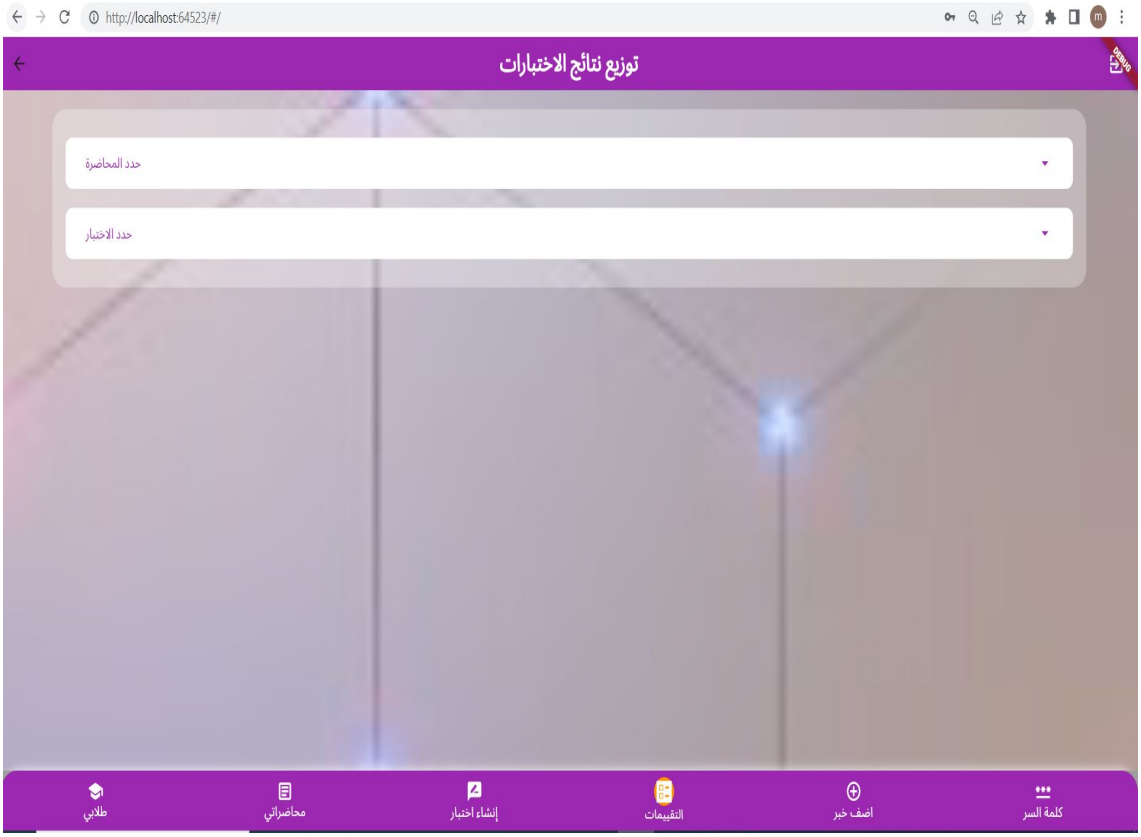


Figure 5.38: Marking

Figure 5.39: Marking

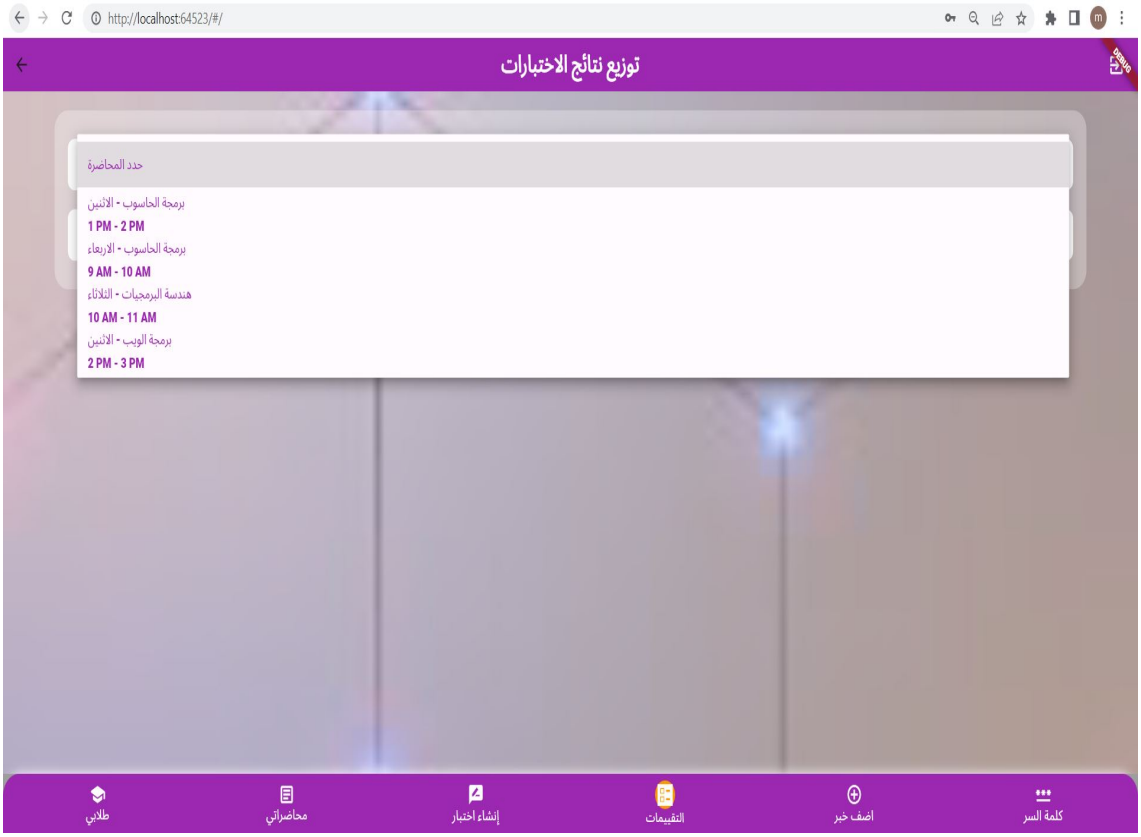


Figure 5.40: Marking

Figure 5.41: Marking

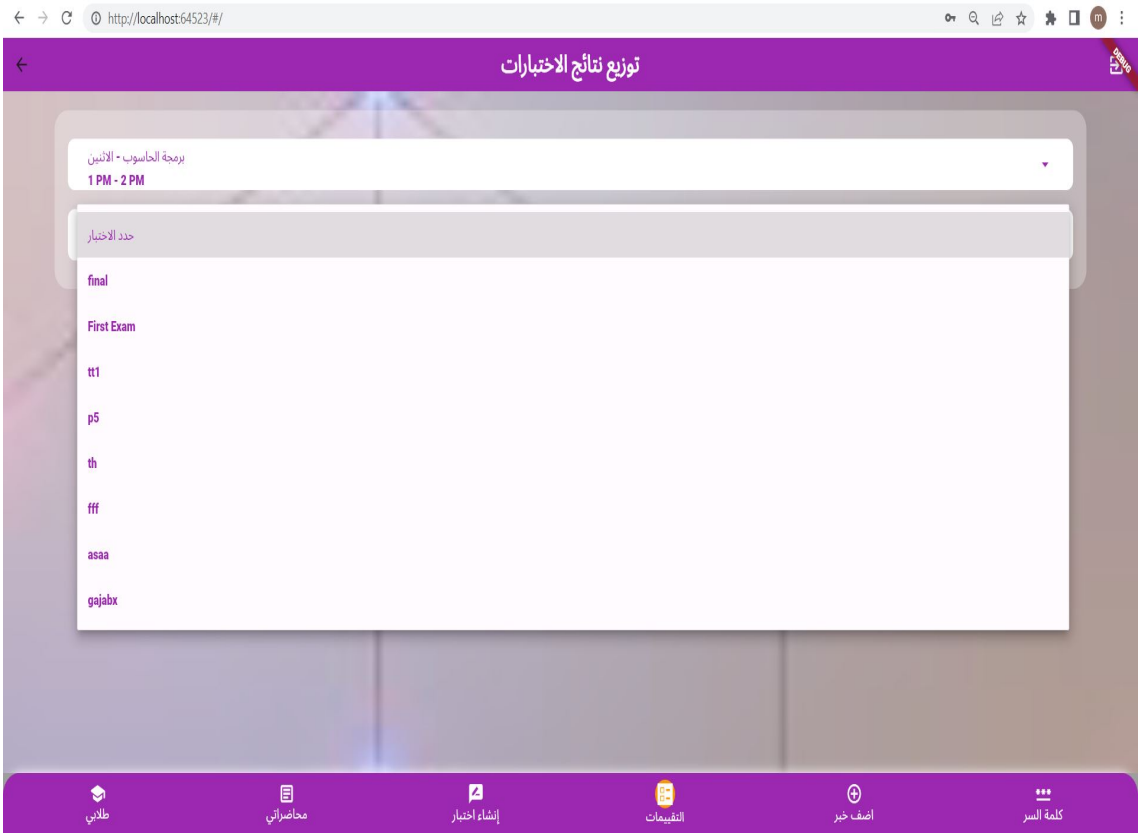


Figure 5.42: Marking

Figure 5.43: Marking

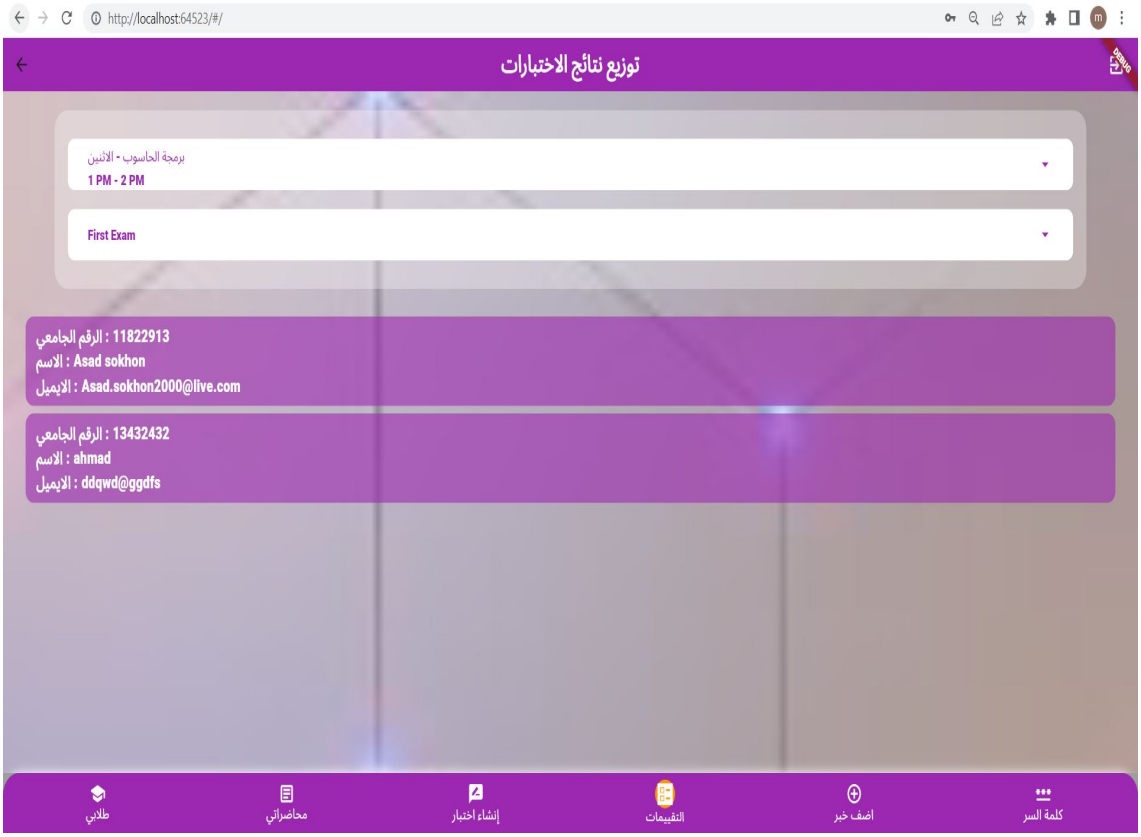


Figure 5.44: Marking

Figure 5.45: Marking

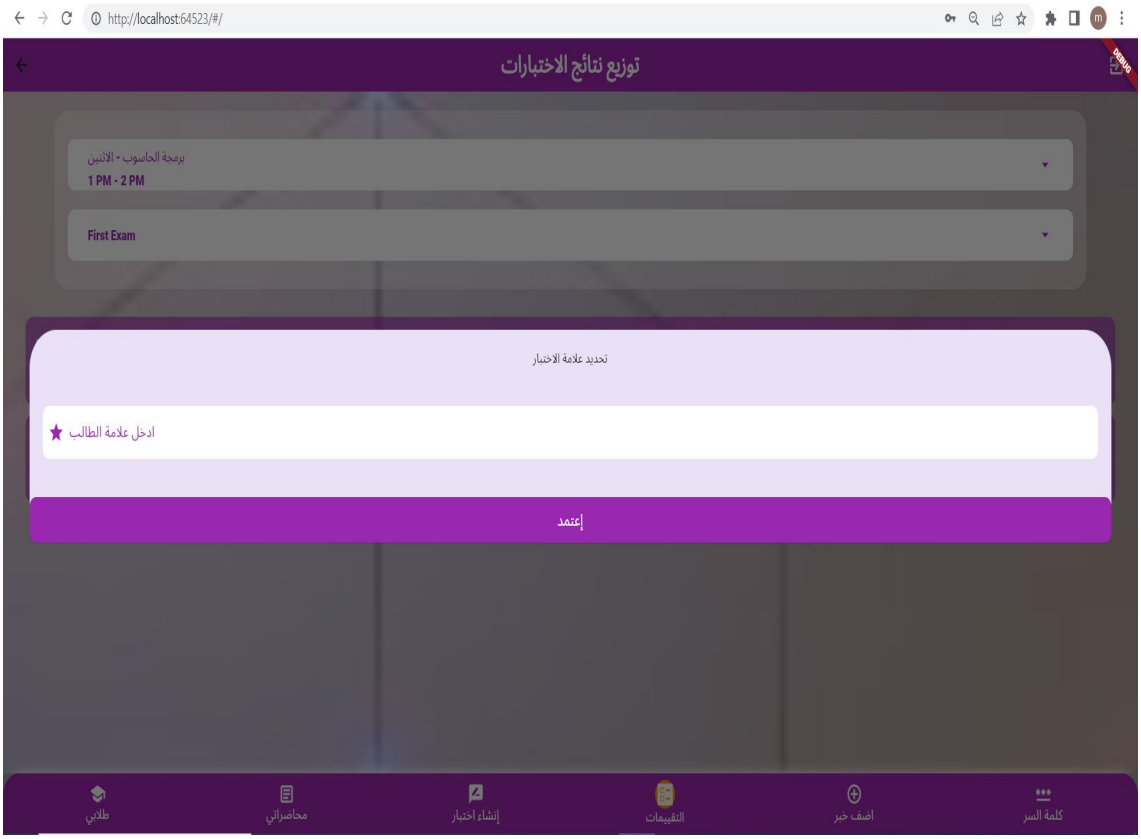


Figure 5.46: Marking

5.2.12 Add news

The news will be added here by the doctor after he chooses a course:

Figure 5.47: Adding news

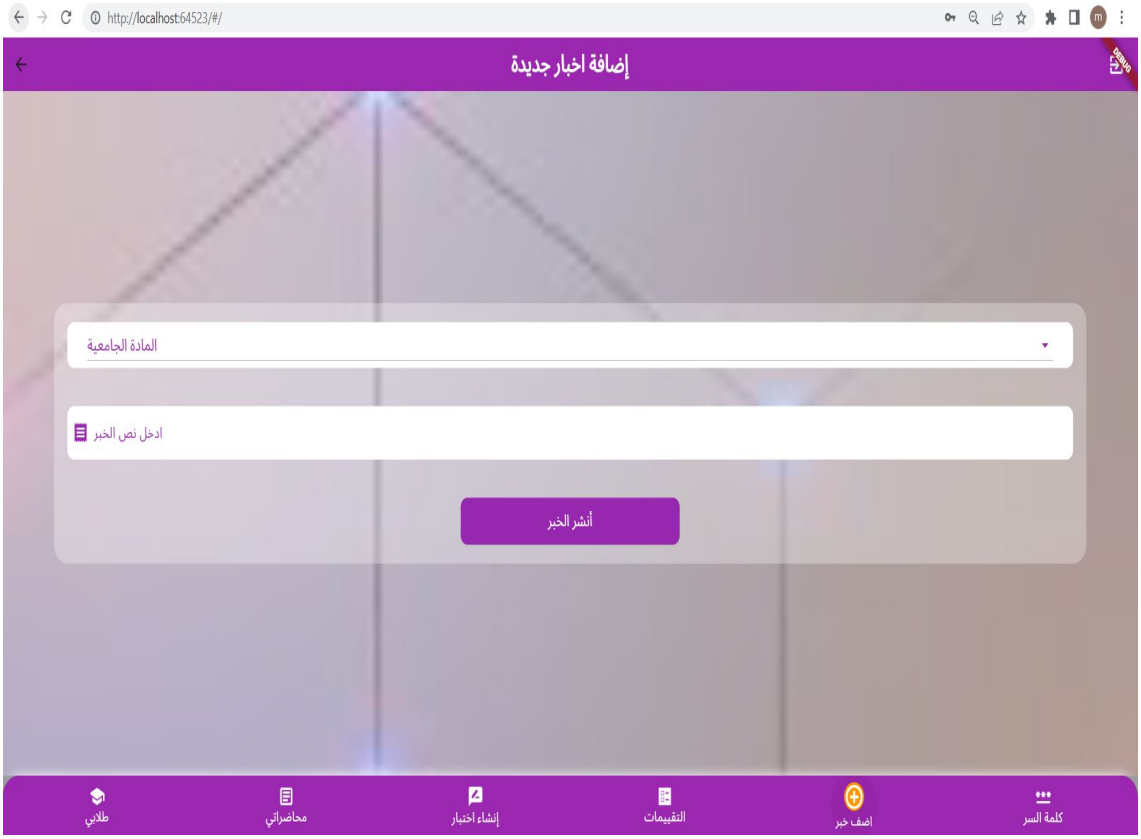


Figure 5.48: Web Adding news

5.2.13 Change Password

here the doctor can change his password:

Figure 5.49: Doctor Password

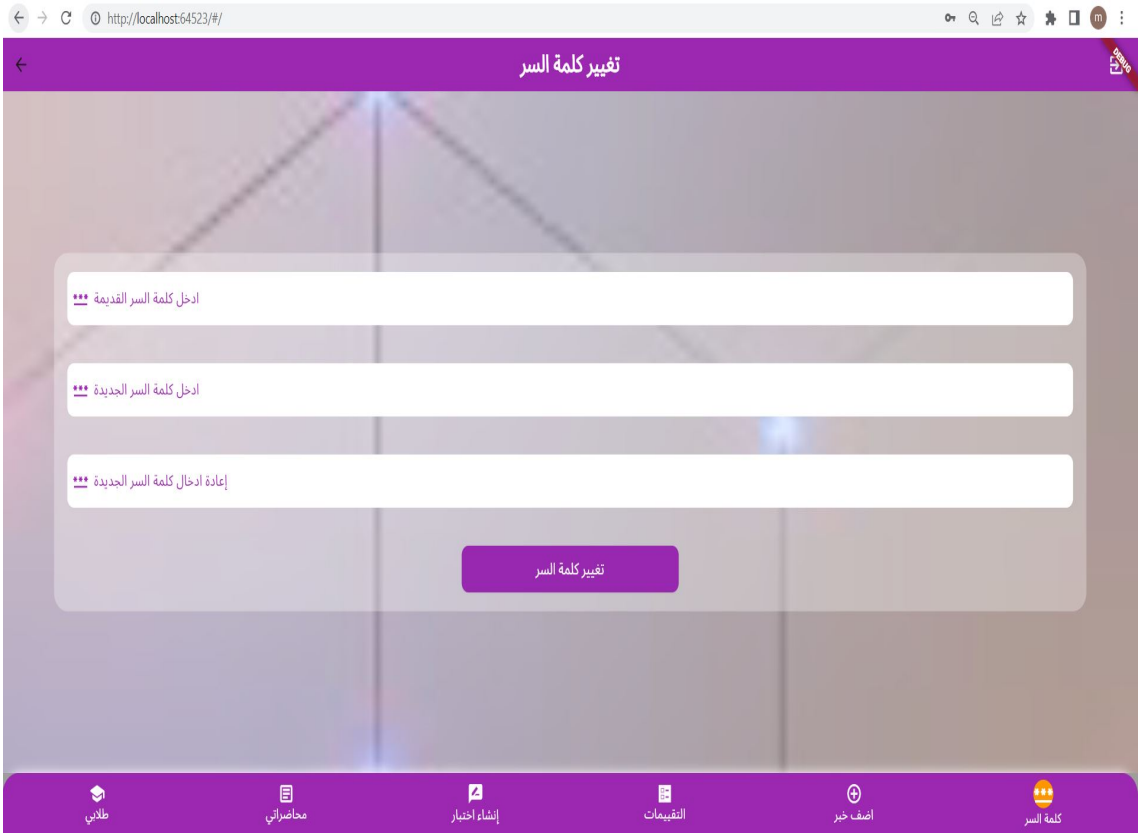


Figure 5.50: Web Doctor Password

Admin

5.2.14 Register a student

in this page the admin can register students by filling their information and then an email will be sent to the Student with all of his information including the automatically generated password so he can sign in:

Figure 5.51: Add Student

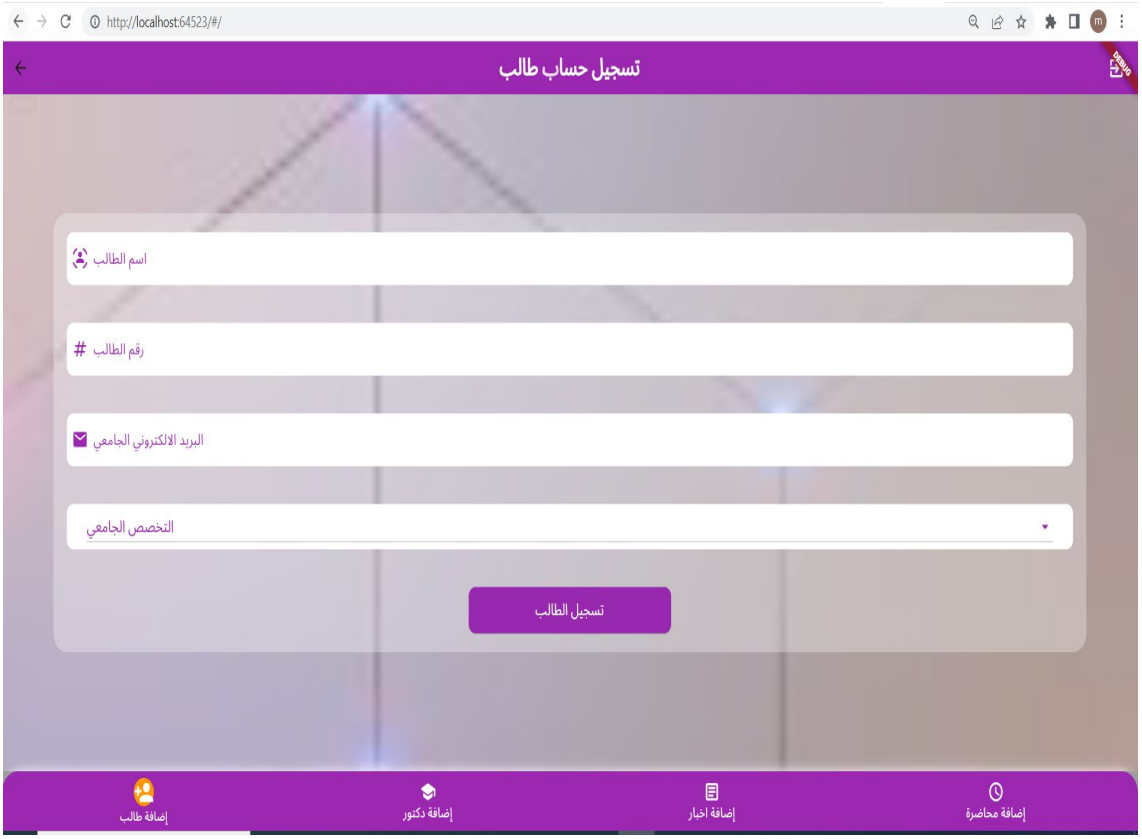


Figure 5.52: Web Add Student

If the admin didn't add the student specialty:

Figure 5.53: Add Student error

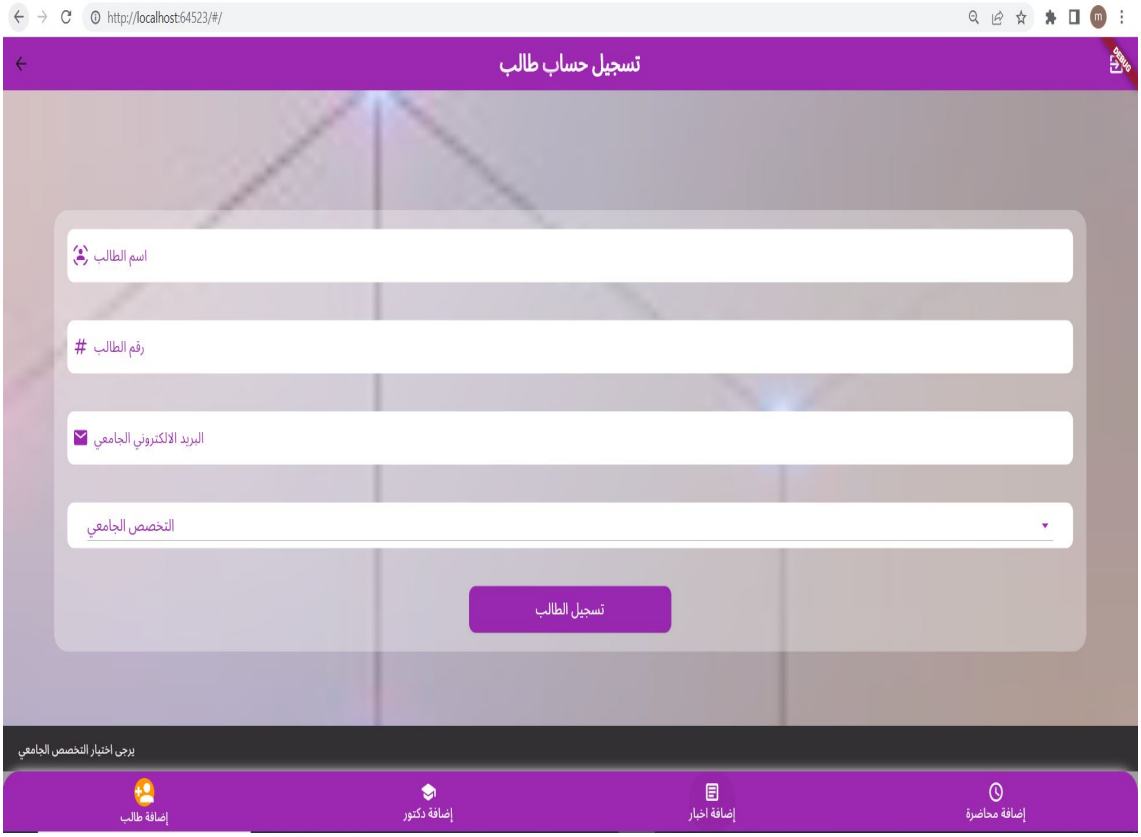


Figure 5.54: Web Add Student error

if the admin added the specialty but didn't add any of the other fields:

Figure 5.55: Add Student error

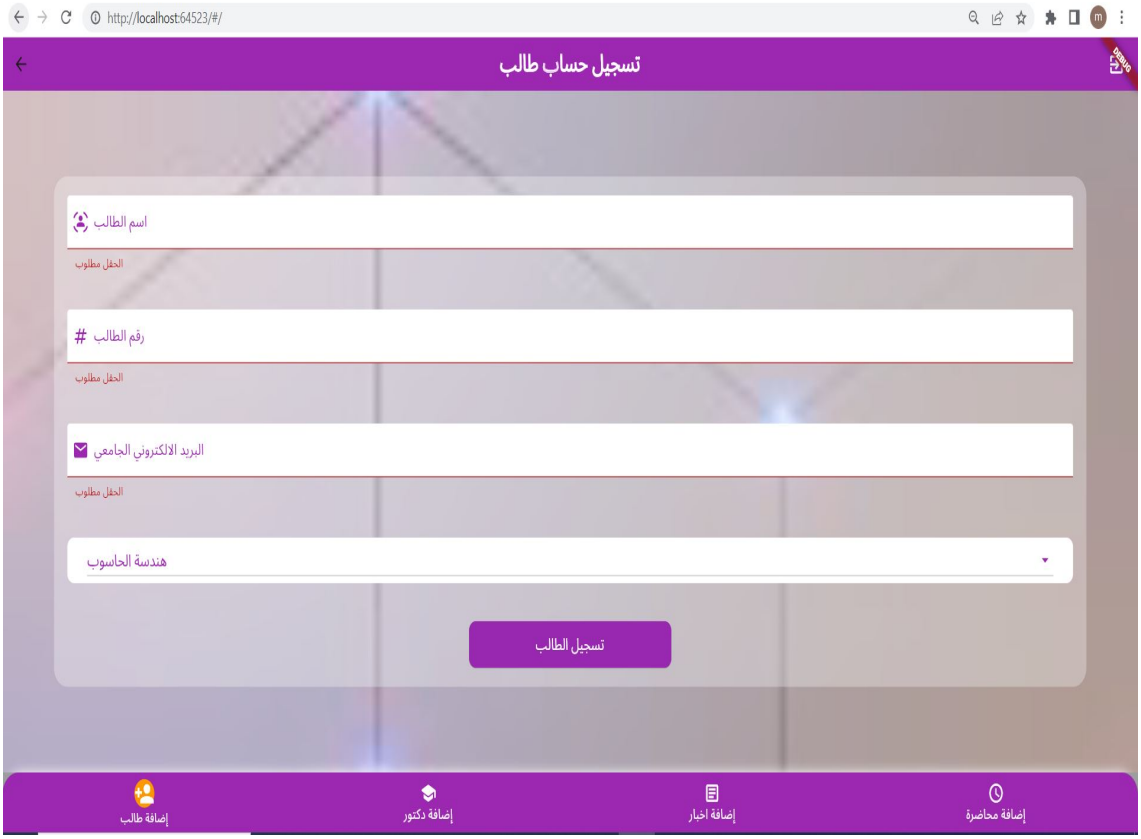


Figure 5.56: Web Add Student error

Figure 5.57: Add Student filled

When the admin fill the student information and clicks on register student button, an email will be sent for the student email as below:

Figure 5.58: Send Email

5.2.15 Register a Doctor

in this page the admin can register doctors by filling their information and then an email will be sent to the doctor with all of his information including the automatically generated password so he can sign in:

Figure 5.59: Add Doctor

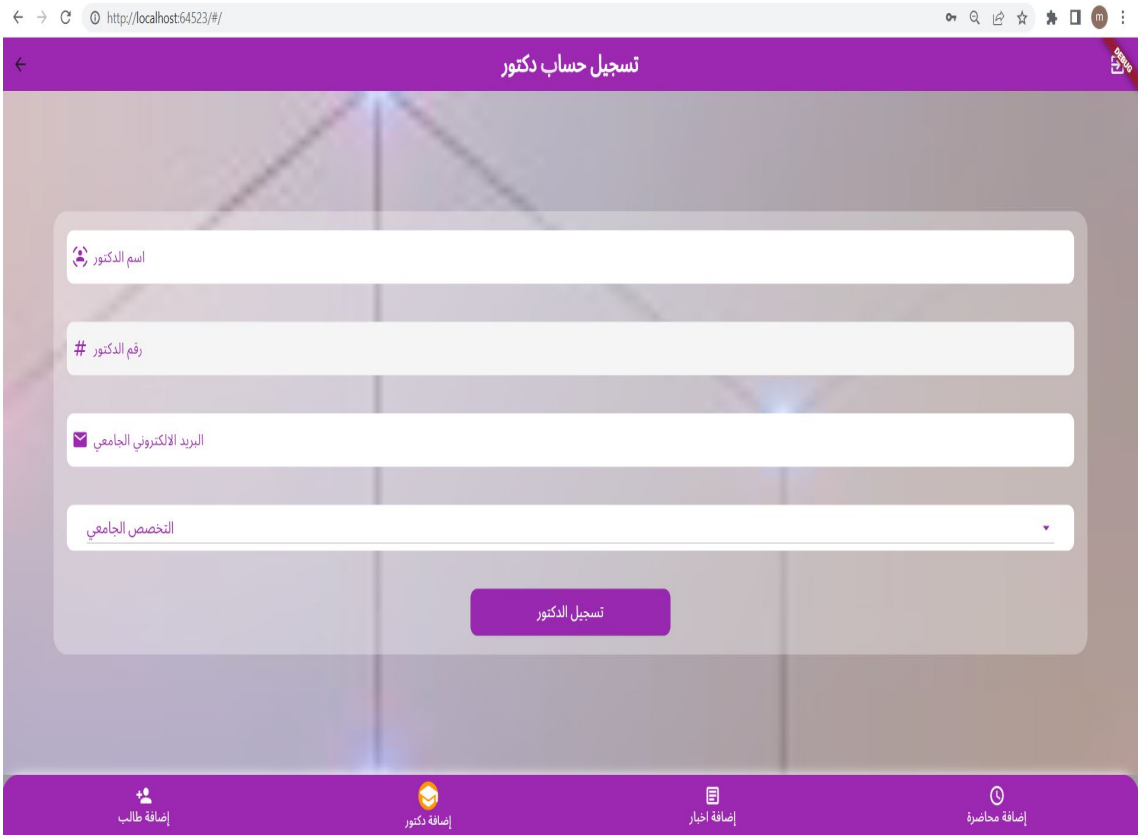


Figure 5.60: Web Add Doctor

If the admin didn't add the doctor specialty:

Figure 5.61: Add Doctor Error

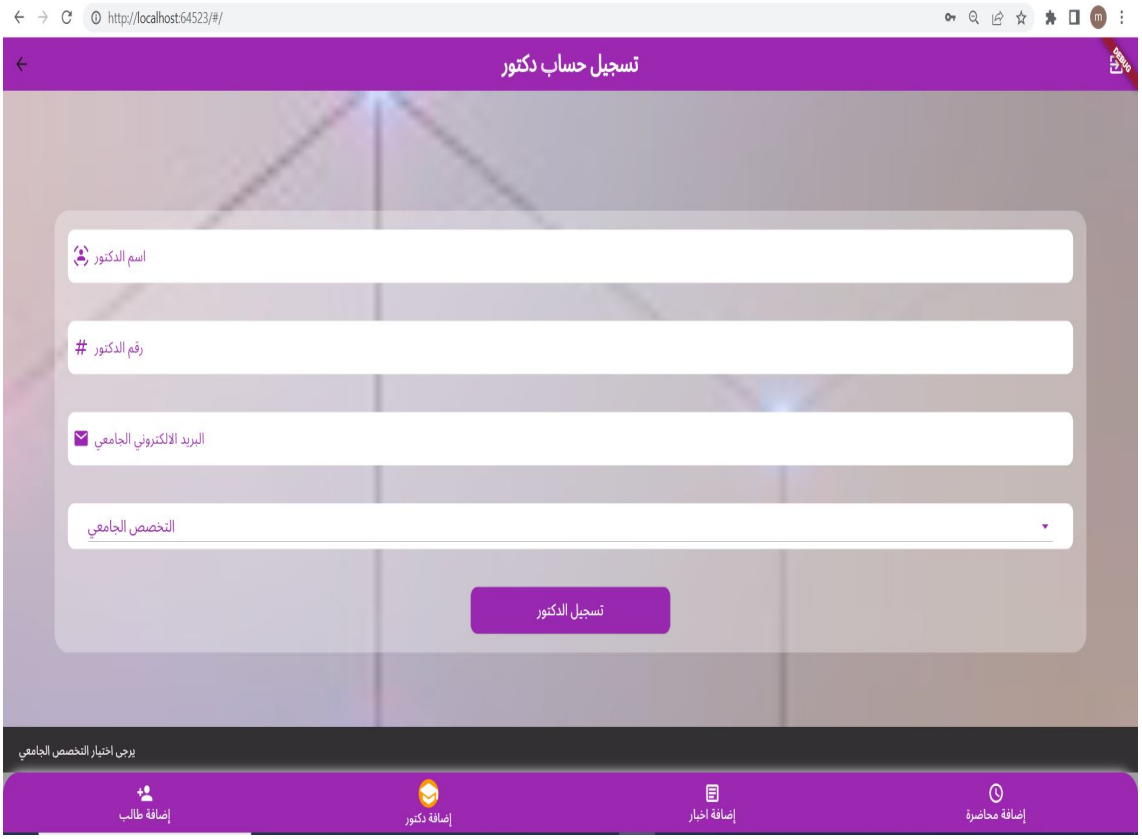


Figure 5.62: Web Add Doctor Error

if the admin added the specialty but didn't add any of the other fields:

Figure 5.63: Add Doctor Error

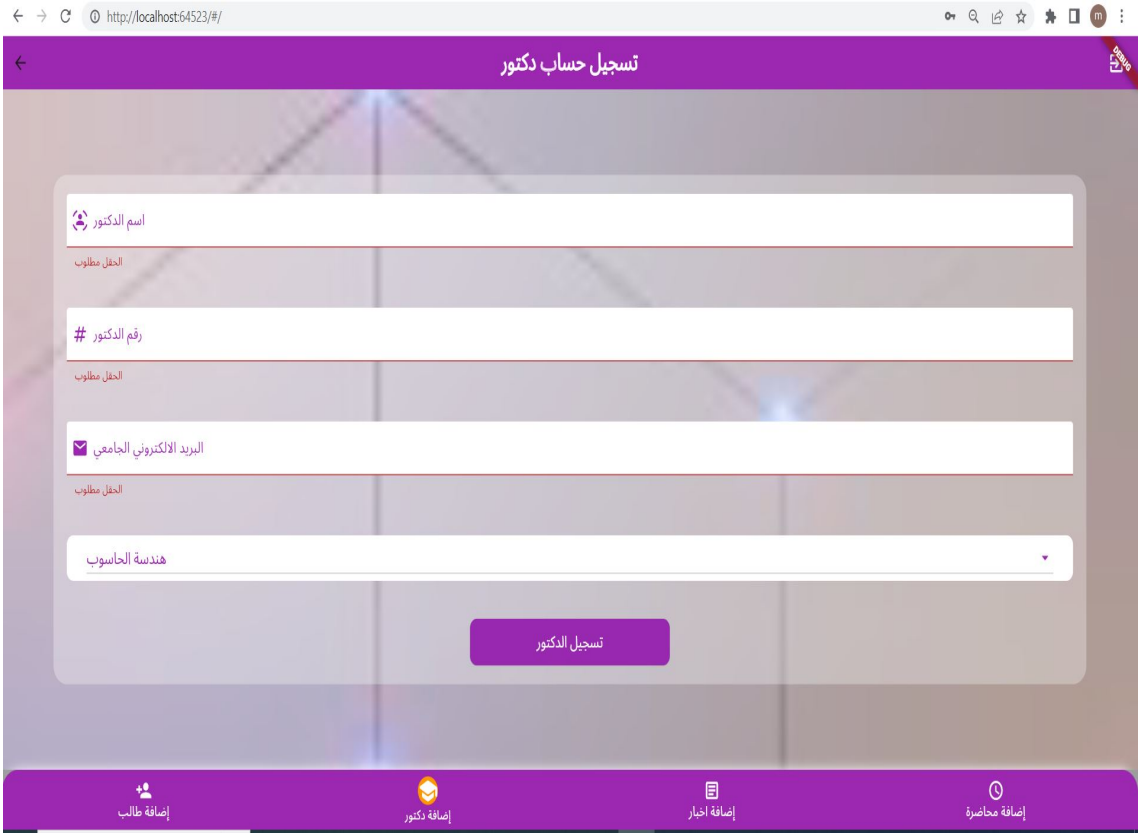


Figure 5.64: Web Add Doctor Error

Figure 5.65: Add Doctor information

When the admin fill the doctor information and clicks on register doctor button, an email will be sent to the doctor email as below:

Figure 5.66: Send Email

5.2.16 Registering courses

The admin can attach courses to the doctors by specifying the day, the time, the course and the doctor:

Figure 5.67: Add lecture

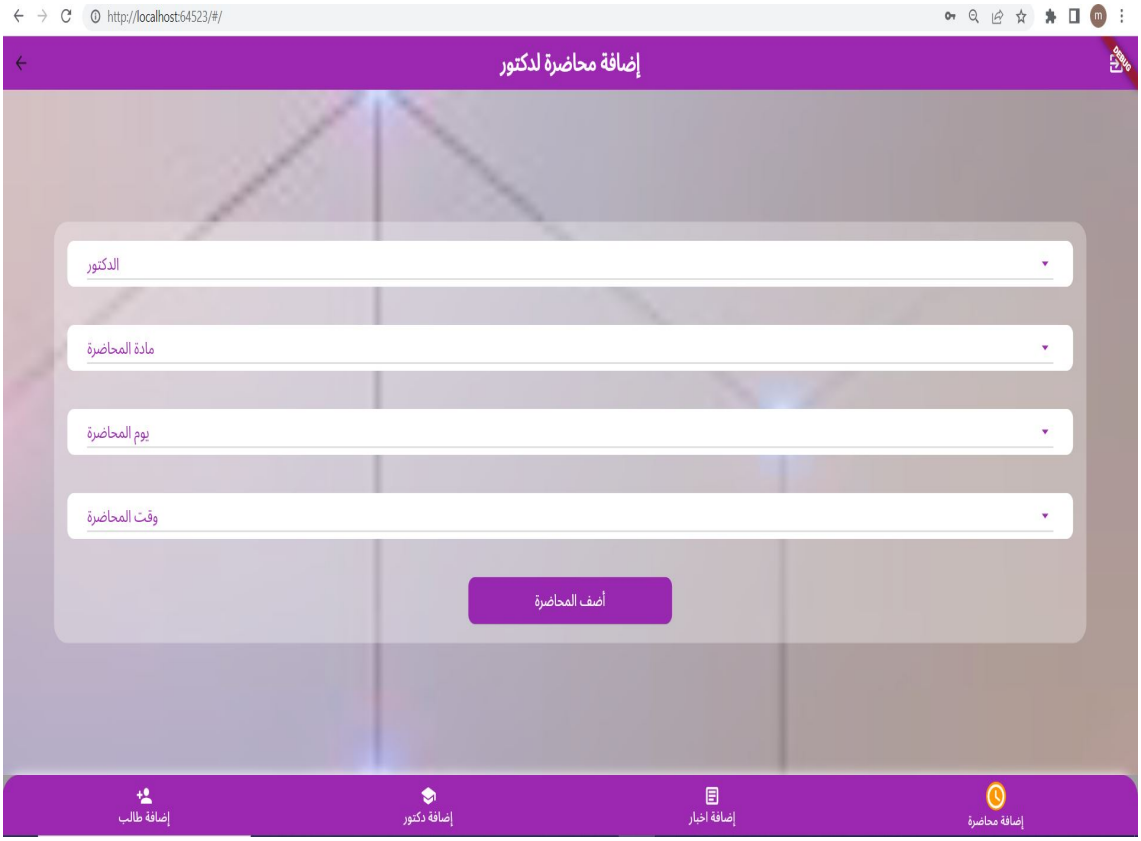


Figure 5.68: Web Add lecture

And if any of the fields is not filled, an error message will be shown:

Figure 5.69: Add lecture error

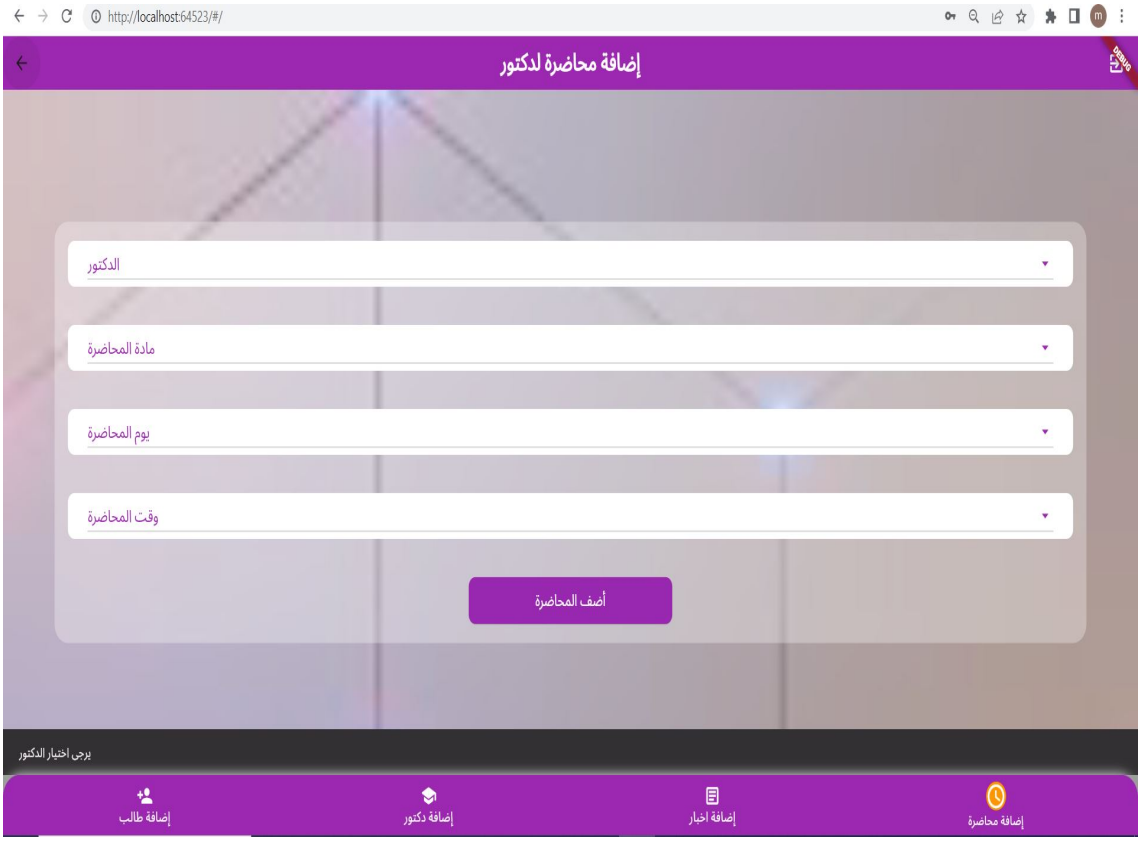


Figure 5.70: Web Add lecture error

5.2.17 Adding news

The admin here can add news to let the students see it on their news page:

Figure 5.71: Admin News

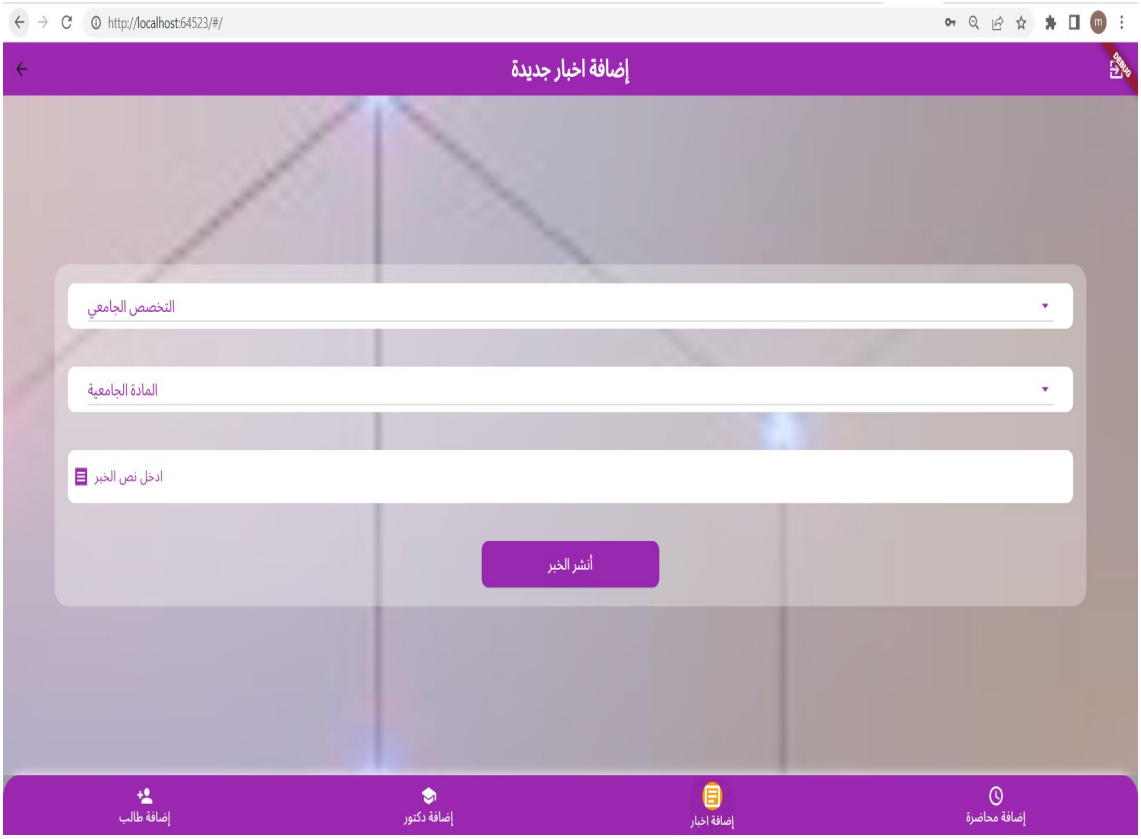


Figure 5.72: Web Admin News

And if any of the fields is not filled, an error message will be shown:

Figure 5.73: Admin News Error

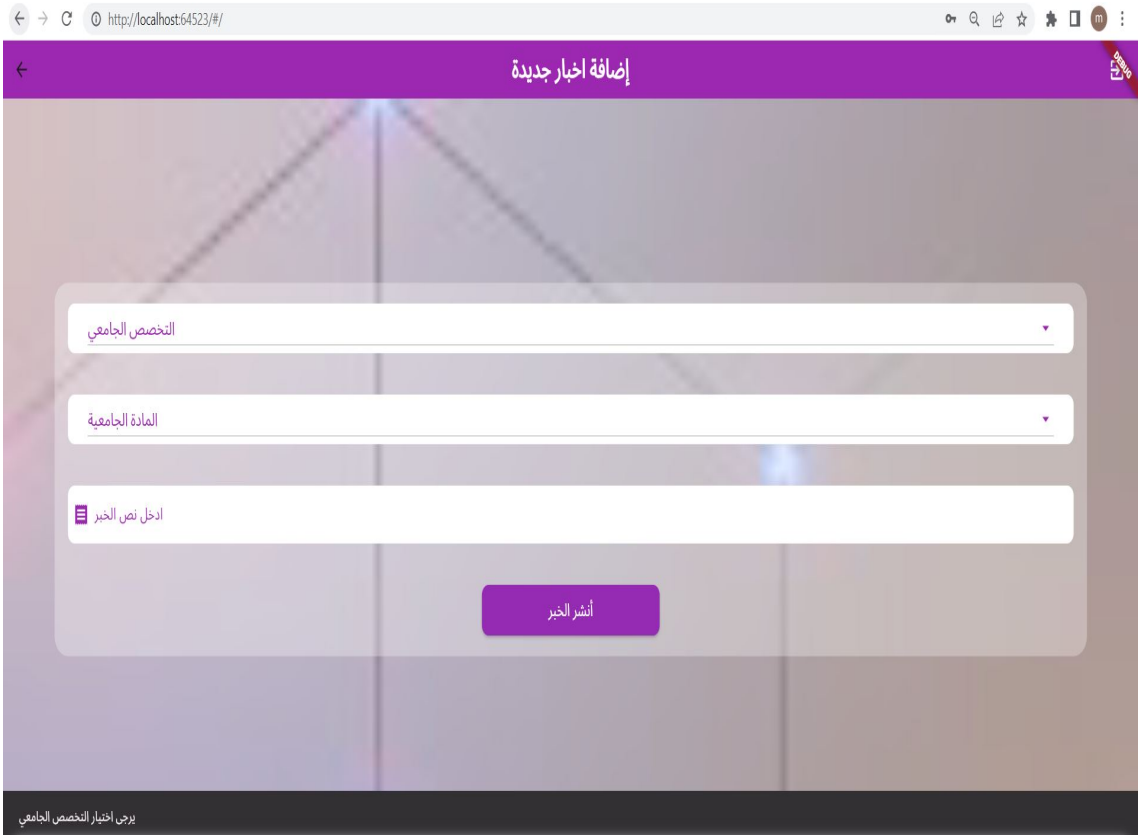


Figure 5.74: Web Admin News Error

Chapter 6

Results & Discussion

In this chapter we will talk about the project results and what is the expected from project.

it is a platform with mobile app and a website which allows the students, doctors and the admin to navigate through their needs and duties in consideration of the university easily.

1. Login in the app through the login page.
2. see the news by the students which are added by the doctor or the admin.
3. the courses can be attached to the doctors by the admin and can be registered in by the students.
4. The doctor can generate a PDF exam by specifying its name, its subjects an its mark and can add the students marks then the app will automatically calculate the final mark for the student and display it in the final marks section.

Chapter 7

Conclusion

7.1 Summary

The application, university portal, is a portal designed to help students, doctors (faculty) and admins. It serves as a way to assist academic staff and students with carious university related tasks. The application offers a user friendly interface for the students that assists them with course registration, viewing grades and staying updated with all news related to the subjects that they are rolled in. The portal empowers students by granting them easy access to their academic information and enabling efficient course management. Doctors can utilize features such as managing courses participation, generating automated exams that are dynamically generated, grading students assignments and exams and share news and updates. The admin plays a role with registering students doctors and adds news and makes sure everyone is up to date with university requirements. In summary the mobile application acts like a central hub between students, doctors and admins. Its user experience and essential features aim to enhance communication and makes the lessening environment better for all involved parties.

7.2 Future work

There are various areas that our app might improve, including:

1. Add absence system which allows the doctor to check if the students have attended the class.
2. give the admin more privileges like editing and deleting the users.
3. allow the doctor to publish assignments, online exams and students to submit their answers.

Chapter 8

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