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Software Graduation Project (Oregano App)

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DISCLAIMER

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Abstract

With the increase in cooking recipes, mothers are confused about cooking! Our Project (Oregano) suggests that mothers cook recipes based on the food substances they choose. Besides suggesting a specific recipe based on the food substances in the refrigerator, Oregano can count calories for every meal and provide tips for people on a diet. Our application serves the Palestinian mothers category, especially those who have no cooking experience.

In the application development process, we need to develop a background service that builds a database using web scraping. The service will use the selenium driver to automatically open URLs, read text and data, follow links, extract underlying HTML code, analyze data, and store the needed information in a database. We are also looking to use React native for mobile applications and build web administrators.

1. Introduction

Many people find it difficult to know the cooking recipes that are near to their experience and to find the recipes that provide how much calories included .

This report is organized as follows, section two will discuss some of our constraints during the project , section three will discuss the literature review , section four will discuss Experimental procedure in our report , section five will discuss the results and analysis and section six will talk about our conclusion .

1. Constraints, Standards/Codes and Earlier course work

1.1 Constraints

The courses that are taken in the Computer Engineering Department taught us a lot of important ideas and basics that helped us to develop this app, such as Web Programming , Software Engineering , Module View Controller and Object Oriented Programming. Moreover, we took online courses about React Native, React js, Node.js , Express.js and web scrapping in python which facilitate the process of implementing and developing our project. So working with new frame works was also challenging and interesting at the same time .

1.2 Earlier work

Preparing the project was one of the most interesting phases , we managed to look for new frameworks which can help us to accomplish our goal. This step helped us to save time learning these frame works and gave us a good idea about the available frame works and techniques used in mobile application development.

2. Literature Review

There is much available application today similar to Oregano like Cookpad and tasty. However, Oregano differs in suggested cooking recipes from things in the house. Calculating the actual time needed in cooking and how many calories the meal also contains many features that make it not just food application.

4. Methodology

The purpose of this chapter is to summarize the developments that took place within the Oregono project and put them in a larger scientific and technological context.

4.1 Programming Language

4.1.1 Front End

We use the React Native language where is an open-source mobile application framework created by Facebook. It is used to develop mobile applications for iOS and Android. It's a JavaScript framework.

4.1.2 Back End

For the Back End we use:

MySQL (MyPHPAdmin) with XAMPP server. Which it is free software tool written in PHP, intended to handle the administration of MySQL over the Web. phpMyAdmin supports a wide range of operations on MySQL and MariaDB. Frequently used operations (managing databases, tables, columns, relations, indexes, users, permissions, etc) can be performed via the user interface, while you still have the ability to directly execute any SQL statement. In our app, we used it for Sign up, Login, Store product, daily & monthly reports form staff to manager and cart.

4.1.3 Server side:

The server is implemented as MVC[1]. Node.js: It is a server-side open-source platform built on Google Chrome's JavaScript Engine (V8 Engine). It is used for easily building, fast and scalable network applications. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight, efficient and perfect for data sensitive and real-time applications

4.2 Nonfunctional Requirements

The main non-functional requirements of our Application:

1. Availability : Oregano can be Downloaded and used by anyone at any time .
2. Acceptability : Oregano is as easy and clear as possible to use. Also, we worked on the interface in a way that it would be simple, comfortable for the eye, without much extra-details in a page to avoid confusions .
3. Security : we made sure that all passwords are encrypted .

5. Results and Discussion

In this chapter , were going to show and discuss the final results of our project. This chapter will discuss a feature or more provided by Oregano app application.

5.1 Log in / Sign up page

This page is one of the first pages designed in our application. This page was designed using React native components . We choose logo for Oregano app as show below and we use icon for text input user name and password . Password is encrypted for more security .

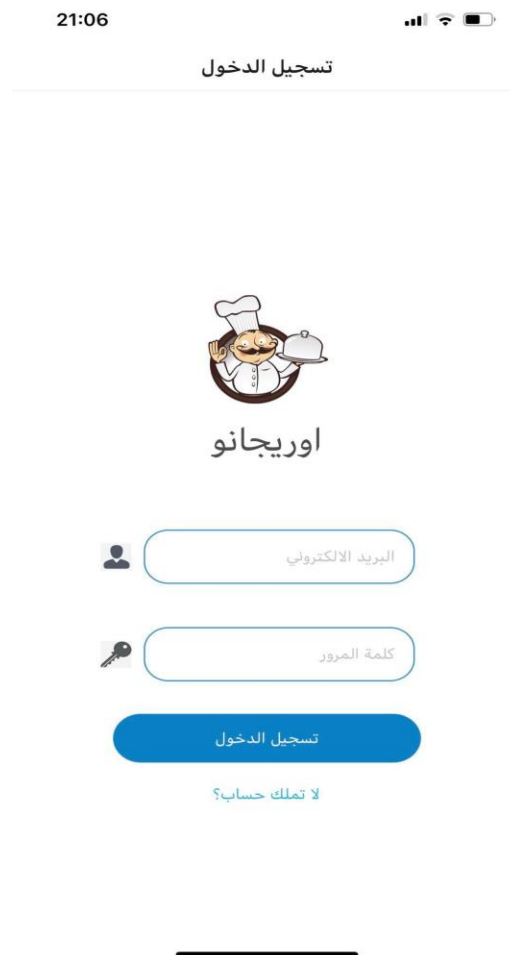


Figure 5.1: Oregano app Log in page .

Next we have the sign up functionality , which we implemented as a modal with picker component to collect data about user. The data contain personal information about person's health .

20:35

عمل حساب جديد تسجيل الدخول

الاسم الاول

الاسم الاخير

كلمة المرور

تاكيد كلمة المرور

حساب الایمیل

هل تعاني من حساسية من اصناف الطعام؟

Select an item...

هل تعاني احدى هذه الامراض؟

Select an item...

تسجيل

Figure 5.2: Oregano app sign up page .

When you create an account and log in, you will enter the application and move between tab home , setting , add your recipe also we can search for any food recipe you want.

5.2 Home page

The application is implemented to provide tab screen navigation to allow users move easily between screens .Home screen contain Swiper React Native component also contain button for healthy nutritional advice and some cooking recipes. Cooking recipes contain ranking which is a library in react native allow user to rate the recipe .

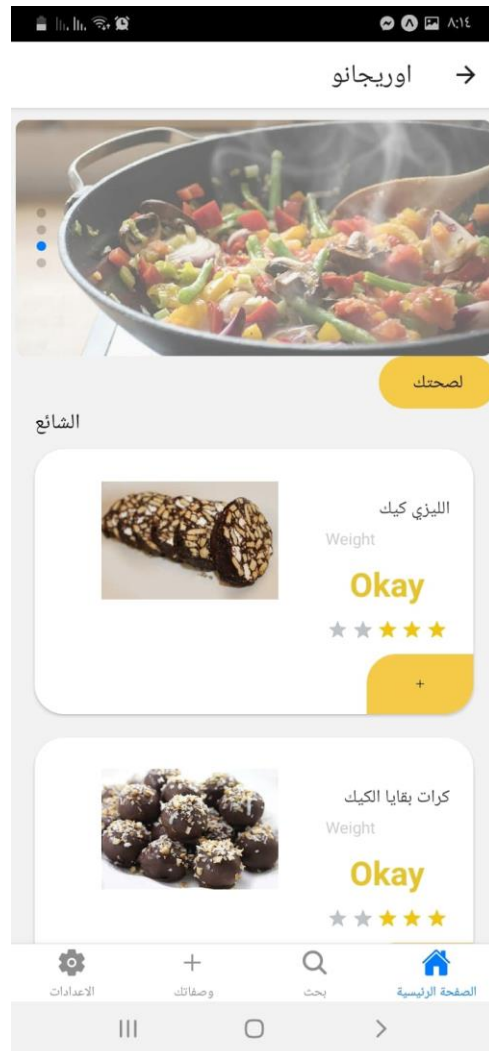


Figure 5.3: Home page .

5.2.1 Cooking recipes in home page

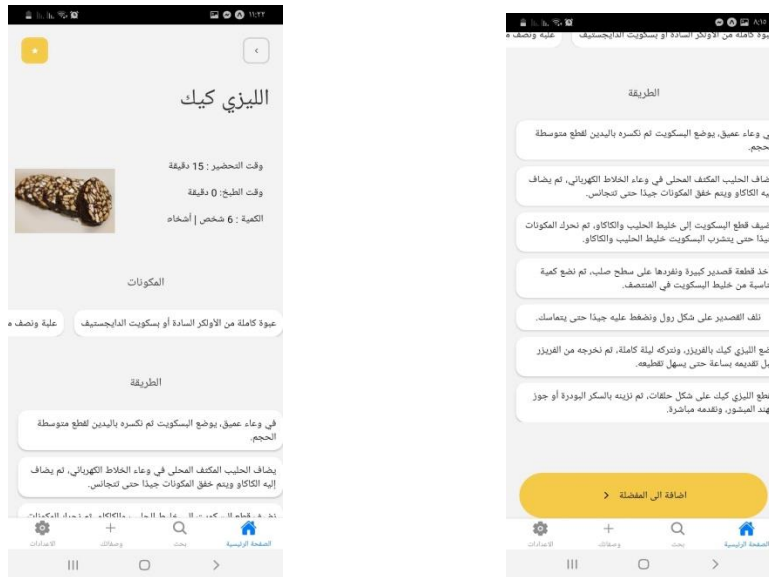


Figure 5.4: Cooking recipes in home page .

5.2.2 Healthy nutritional advice

This is one of the most important pages in our application , because we use data collected in webscraping scrapy spider from taabkh [2] website .we store all data return by scraping in our database by writing python code to open all html pages in taabkh website and return the <div> , , ,<p> and all tags we need to store data.

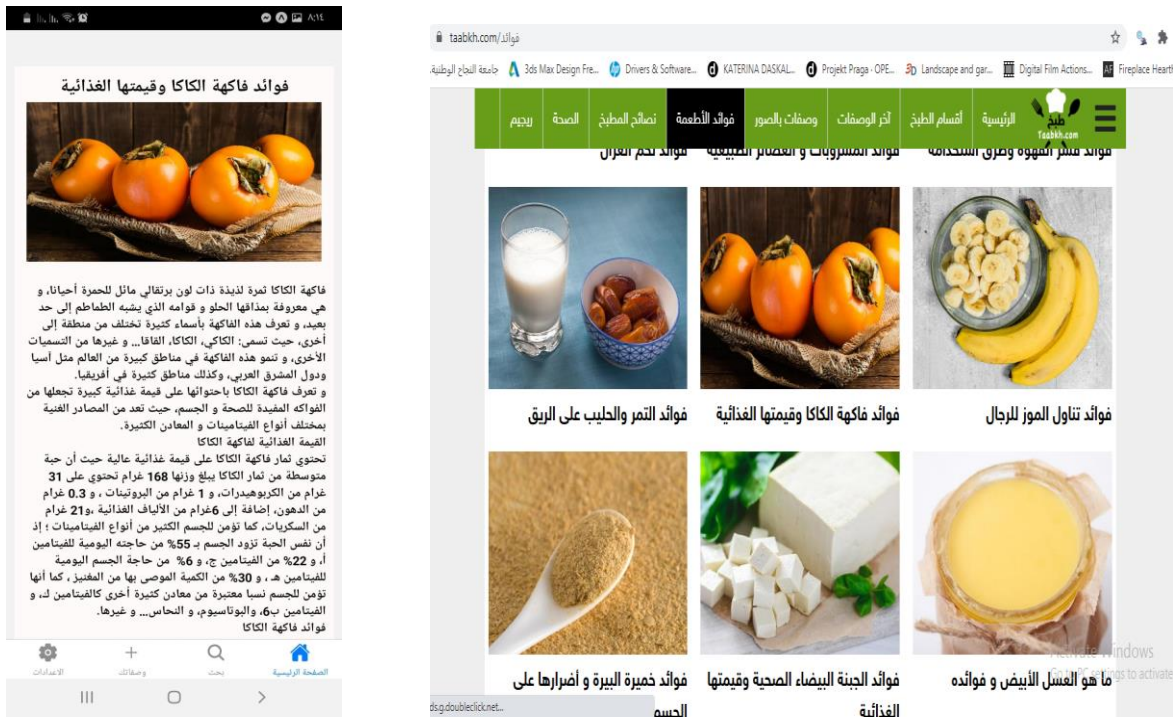


Figure 5.5: Healthy nutritional advice .

5.3 Search pages

The search page has tab screens on top which help users to search depends on names of food recipes, food substances, and calories. All data is also collected by scrapy spider .

Search function implemented by using searchbar react native component and in server side we use sql statement to select the food recipe “like” what we want .

We also added the ability to comment and rate the recipe and store comments on database also it stored in admin panel to see the feedback for users.

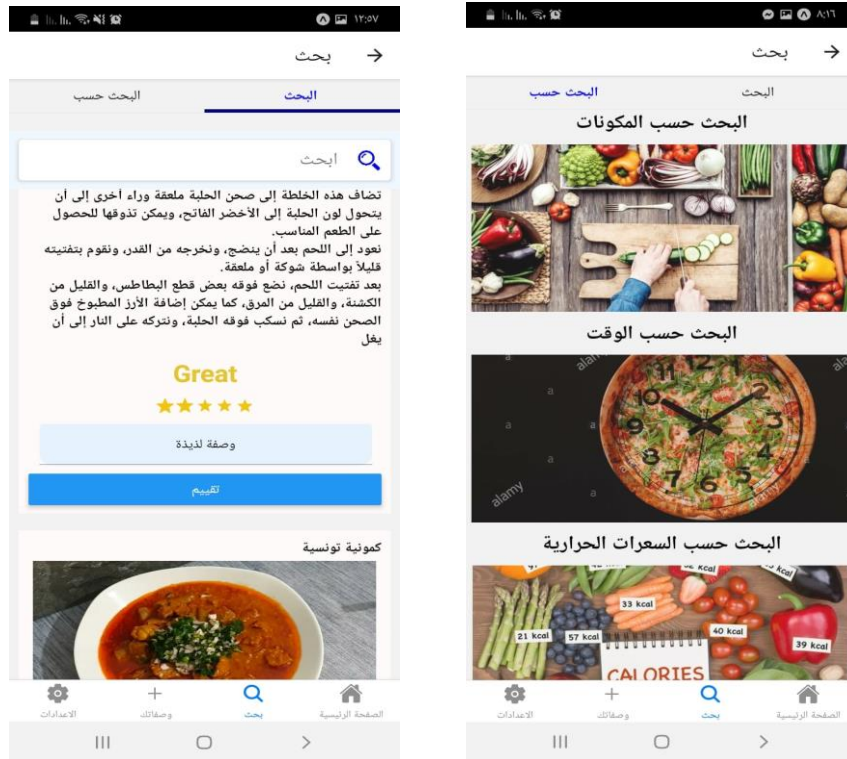


Figure 5.6: search pages .



5.4 Add food recipes

Here the user can add food recipes then it added to database for users .

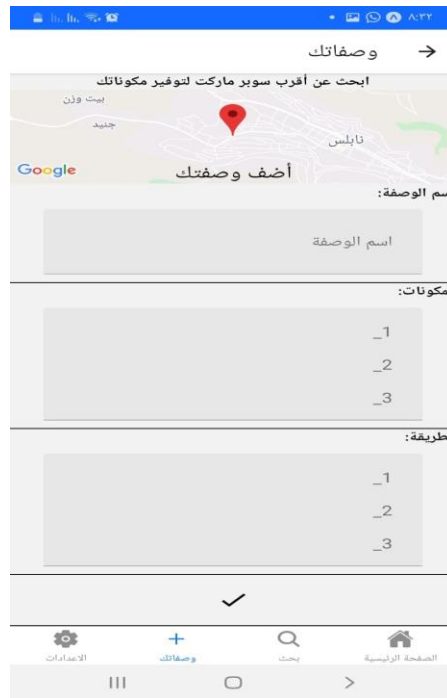


Figure 5.7: Add recipes .

5.5 Setting tab

Setting tab contain user update profile which allow user to update his/her data like name and password also the user can see the recipe that added by him. And there is another simple things in setting like favorite cooking recipe and another .

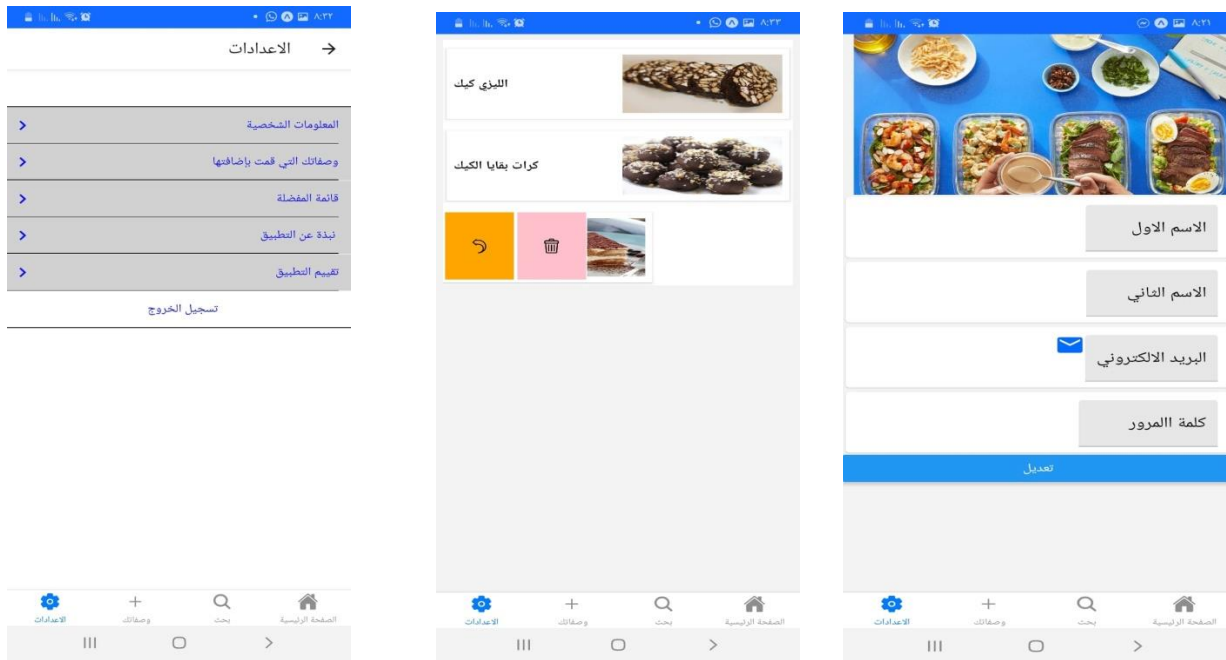


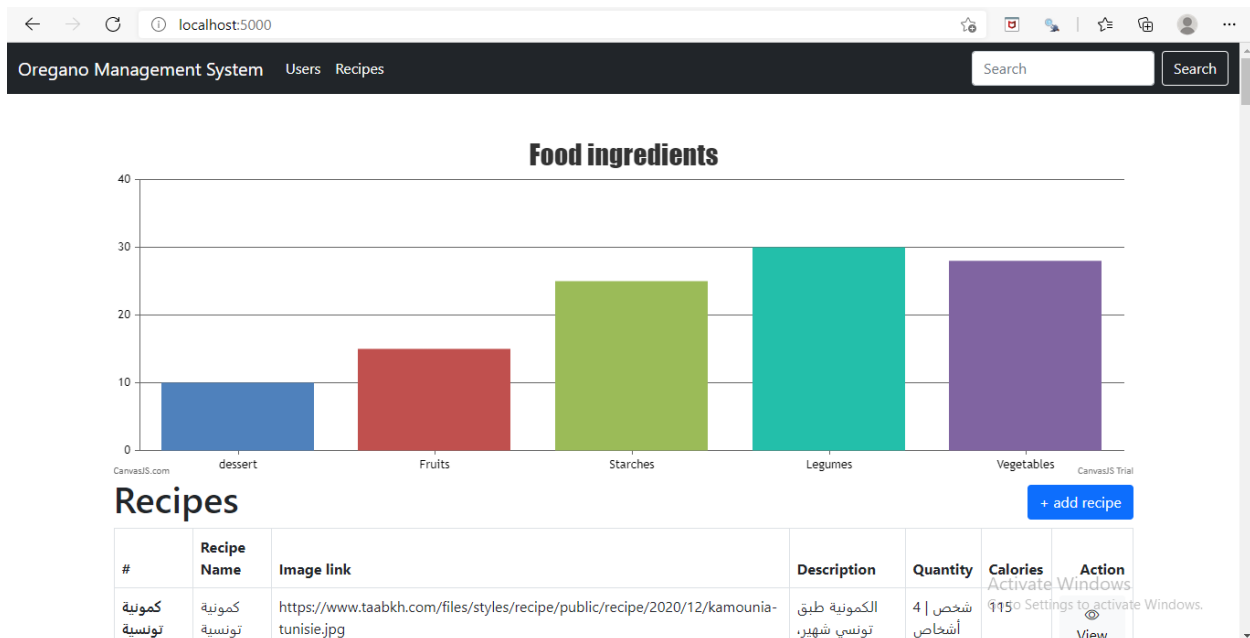
Figure 5.8: Setting tab .

5.6 Admin panel

We decide to implement admin page as small website because it was easier to see users behavior and update users data, update food recipes that added by users ,and that collected by webscraping. We use react js for frontend, Express Handlebars and node js for server side and mysql for database.

What is Handlebars?

Handlebars is one of the most used templating engines for web applications “competing” with other well-known ones like Mustache js, Pug, EJS and others. It’s especially used on the server side along with the express js framework [3].



localhost:5000/home2

Oregano Management System Users Recipes

Search Search

Users

+ add user

#	First Name	Last Name	Email	Password	Action
1	Amanda	Nunes	anunes@ufc.com	01277345	View Edit Delete
2	Alexander	Volkanovski	avolkanovski@ufc.com	0123945	View Edit Delete
3	Khabib	Nurmagomedov	knurmagomedov@ufc.com	0123745	View Edit Delete
4	Kamaru	Usman	kusman@ufc.com	012345	View Edit Delete
6	Henry	Cejudo	hcejudo@ufc.com	0123345	View Edit Delete
7	Valentina	Shevchenko	vshevchenko@ufc.com	01233345	View Edit Delete
9	Rose	Namajunas	rnajunas@ufc.com	67891330	View Edit Delete
10	Tony	Ferguson	tferguson@ufc.com	78910	View Edit Delete

localhost:5000/viewrecipe/كمونية20%تونسية

Management System Users Recipes

Search Search

Recipes / View Recipe

كمونية تونسية

Recipe Name	Image link	Description	Time for preparation	Time for cooking	Quantity	Calories	Ingredients	Preparation Method
كمونية تونسية	https://www.taabkh.com/files/styles/recipe/public/recipe/2020/12/kamounia-tunisie.jpg	الكمونية طبق تونسي شهير، يعتبر من الأطباق التونسية وأكثرها غنى بالقوائد، حيث تعدد كمونية الكبد الغني بالعناصر	دقيقة 20	دقيقة 45	شخص 4 أشخاص	115	500 كبد خروف 1 ملعقة طعام معجون طماطم 1 حبة بصلة مفرومة نصف ملعقة طعام فلفل الحار نصف ملعقة طعام	قطع الكبد إلى قطع متساوية الحجم ثم نضعها في وعاء ونحفظها من الماء، نضيف التابل، الفلفل الأسود والملح ثم نقلى

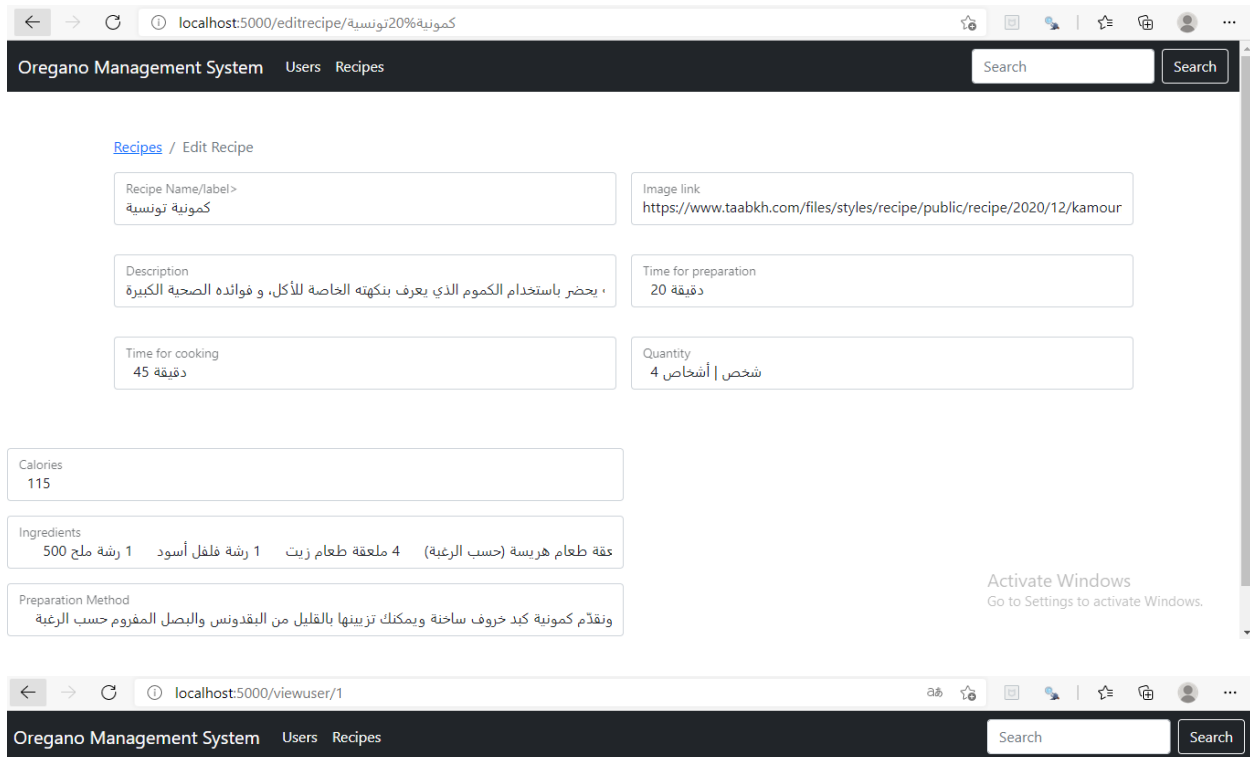


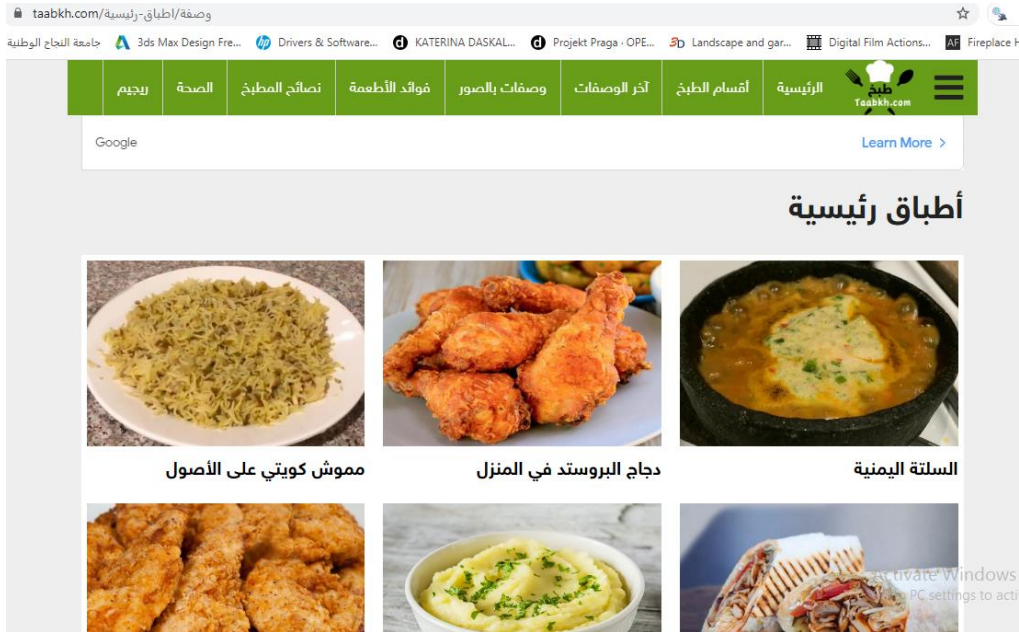
Figure 5.9: Admin pages .

5.7 Database and scrapy

Scrapy is a **python** framework for large scale web scraping. It gives you all the tools you need to efficiently **extract** data from websites, **process** them as you want, and store them in your preferred **structure** and format [5]. We store data in mysql database as below . The technique of collecting data in scrapy is :

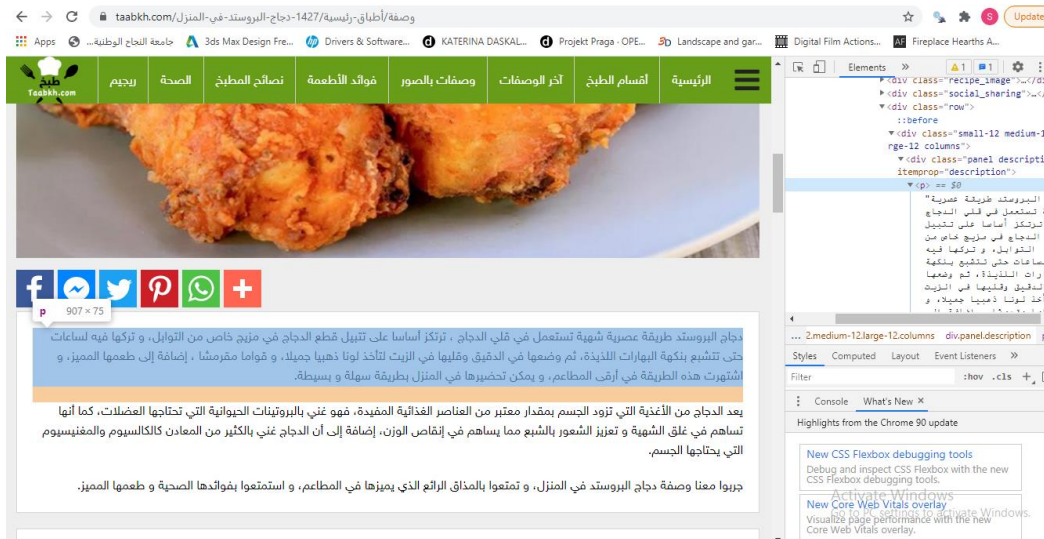
1) Firstly detect the (allowed_domains) for the website you want to scrap data from it , in our application was www.taabkh.com .

2) give the scrapy spider (start_urls) , we gave it the html page which contains all urls for all cooking recipe as shown in figure below :



3) the code will go to all links .

4) return tags that we want by using XPATH as shown in figure below:



5) yield items that you returned and crawl it by scrapy library .

Database:

The screenshot shows the phpMyAdmin interface for the 'gradproject' database. The left sidebar displays a tree view of databases and tables. The main panel shows the 'Structure' view for the 'gradproject' database, listing five tables: comment, finalfinal, recipe, tips, and user. A summary row at the bottom indicates 5 tables with a total of 60 rows and 304 KiB size.

Table	Action	Rows	Type	Collation	Size	Overhead
comment	Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_general_ci	16.0 KiB	-
finalfinal	Browse Structure Search Insert Empty Drop	12	InnoDB	utf8mb4_general_ci	64.0 KiB	-
recipe	Browse Structure Search Insert Empty Drop	7	InnoDB	utf8mb4_general_ci	16.0 KiB	-
tips	Browse Structure Search Insert Empty Drop	18	InnoDB	utf8mb4_general_ci	176.0 KiB	-
user	Browse Structure Search Insert Empty Drop	21	InnoDB	utf8mb4_general_ci	32.0 KiB	-
5 table(s) Sum		60	InnoDB	utf8mb4_general_ci	304 KiB	0 B

The screenshot shows the phpMyAdmin interface for the 'comment' table in the 'gradproject' database. The main panel displays the SQL view with a query: `SELECT * FROM `comment``. A message indicates that the current selection does not contain a unique column, so grid edit, checkbox, Edit, Copy, and Delete features are not available. The interface shows 2 rows (0-1) and a query execution time of 0.0012 seconds. There are options to show all rows, filter rows, and view table options.

```
SELECT * FROM `comment`
```

localhost/phpmyadmin/sql.php?server=1&db=gradproject&table=recipe&pos=0

phpMyAdmin

Server: 127.0.0.1 Database: gradproject Table: recipe

Browse Structure SQL Search Insert Export

```
SELECT * FROM `recipe`
```

Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

title	integrades	way
بسكويت الزبده	٢٠٠ جرام زبده كاسين طحين كاس سكر داعم	ضع الزبده في وعاء اضيف الطحين شكلها
كراوات جوز الهند والتوتيل	كاسين جوز الهند كاس حليب مكثف توتيل	تخلط الجوز والحليب تتراح ١٠ دقائق وتكوره
بسكويت	٥ اكواب دقيق كوب سكر بودره ٢ كوب زيت	تخلط معا تترك نصف ساعه تقطع حسب الرعيه
حلى النشا	٢ ملعقه نشأ نزه ٥ ملعقه سكر ٣ كوب ماء	ضعي المكونات على نار تصيح جاهزه لونها ش
مقلية	ارز بالنجان دجاج	قلي طبخ
ملوخية	ملوخية دجاج ارز	سلي الدجاج
بامية	بامية ارز دجاج	سلي الدجاج

Console

localhost/phpmyadmin/sql.php?server=1&db=gradproject&table=tips&pos=0

phpMyAdmin

Server: 127.0.0.1 Database: gradproject Table: tips

Browse Structure SQL Search Insert Export Import Privileges Operations

Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

Showing rows 0 - 17 (18 total, Query took 0.0038 seconds)

```
SELECT * FROM `tips`
```

Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

list_title	list_img	list_idiv
فوائد فكهة التانكا وقيمها الغذائية	https://www.taabkh.com/files/article/2021/04/persi...	فانكهة التانكا لمره تلبده ذات لون برتقالي مائل للبح
فوائد لحم الخزال	https://www.taabkh.com/files/article/2021/04/Deer...	لحم الخزال هو نوع من انواع اللحوم المعروفة منذ ا
فوائد اللب الابيض الصحيه وقيمته الغذائية	https://www.taabkh.com/files/article/2021/03/Pumpk...	اللب الابيض هو بذور القرع التي تجفف وتلح وتنت
فوائد قش الفهوه ومزق استخدامه	https://www.taabkh.com/files/article/2021/04/coffe...	تجفف الفهوه بانها من المنتجات المعروفة في العالم
فوائد المشروبات والحماض الطبيعية	https://www.taabkh.com/files/article/2021/04/Benef...	تعد الحماض والمشروبات الطبيعية من أكثر المشروب
فوائد الإسناكورا السحبه وقيمها الغذائية	https://www.taabkh.com/files/article/2021/04/lobst...	تعد الإسناكورا بأنها من المأكولات البحرية التي
أفراح الملح بأنه مده أساسية في كل المطابخ العالم	https://www.taabkh.com/files/article/2021/04/salt...	يعد الملح بأنه مده أساسية في كل المطابخ العالم
فوائد الرجيبيل للتخفيف	https://www.taabkh.com/files/article/2021/04/Ginge...	الرجيبيل ذات طعم مر، من الفصيلة الإحليلية، تستخدم

Console

localhost/phpmyadmin/sql.php?server=1&db=gradproject&table=finalfinal&pos=0

phpMyAdmin

Server: 127.0.0.1 » Database: gradproject » Table: finalfinal

Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

Showing rows 0 - 11 (12 total, Query took 0.0038 seconds.)

```
SELECT * FROM `finalfinal`
```

Number of rows: 25 Filter rows: Search this table

list_title	list_img	list_p	list_time	list_timeA	list_time1	list_time1A	list_count	list_countA	list_calories
كوبية تونسية	https://www.taabkh.com/files/styles/recipe/public/...	الكوبية طبق تونسي	وقت التحضير: 20 دقيقة		وقت الطبخ: 45 دقيقة		4 شخص		السرات: 4 شخص
معدون دجاج	https://www.taabkh.com/files/styles/recipe/public/...	معدون الدجاج بروتست	وقت التحضير: 25 دقيقة		وقت الطبخ: 20 دقيقة		2 شخص		السرات: 2 شخص

Console

localhost/phpmyadmin/sql.php?server=1&db=gradproject&table=finalfinal&pos=0

phpMyAdmin

Server: 127.0.0.1 » Database: gradproject » Table: finalfinal

Grid edit, checkbox, Edit, Copy and Delete features are not available.

Showing rows 0 - 11 (12 total, Query took 0.0038 seconds.)

```
SELECT * FROM `finalfinal`
```

Number of rows: 25 Filter rows: Search this table

list_time1	list_time1A	list_count	list_countA	list_calories	list_caloriesA	list_amount	list_name	list_ldiv	list_way	list_name1	list_ldiv1
وقت الطبخ: 45 دقيقة		4 شخص		السرات: 4 شخص	115	مقادير	كوبية تونسية	500 غرام	كوبية تونسية	كوبية تونسية	كوبية تونسية
وقت التحضير: 20 دقيقة		2 شخص		السرات: 2 شخص	140.26	مقادير	معدون دجاج بروتست	صندوق معدون	طريقة تحضير	طريقة تحضير	طريقة تحضير

Console

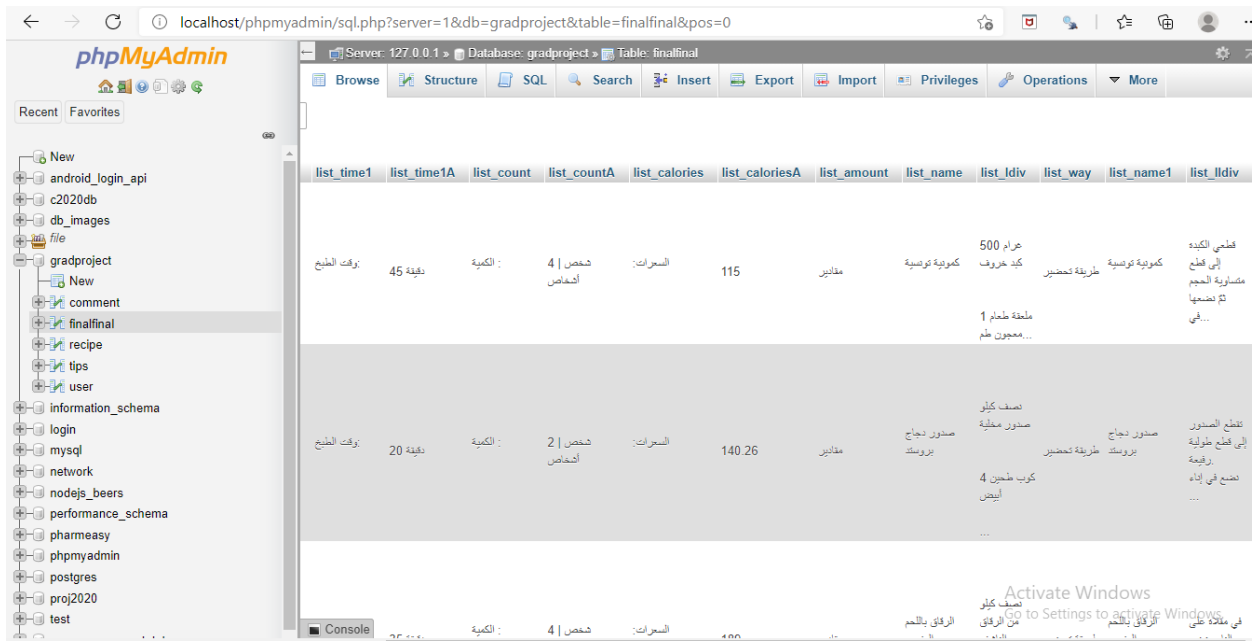


Figure 5.10: Database .

6 Conclusion and recommendations

6.1 Conclusion

Since we finished developing our application we gained a lot of useful knowledge and skills such as, dealing with several React Native packages to complete our work, implantiing back-end by Node.js, learning how to use a scraping in python .

6.2 Recommendations

It is recommended to use React Native for building a cross platform mobile application, because it is easy to learn and has a lot of packages that help in implementing the app.

6.3 Future work

For the short-term future we aim to continue our work by adding more feature and enhancing or fixing any bugs found in our implementation . On the other hand , for the long-term future we aim to scrap more data from more than one website to collect it in our database To make the app serves all user's needs in cooking.

References

- [1] <https://en.wikipedia.org/wiki/Model%E2%80%93view%E2%80%93controller>
- [2] <https://www.taabkh.com/>
- [3] <https://waelyasmina.medium.com/a-guide-into-using-handlebars-with-your-express-js-application-22b944443b65>
- [4] overview of scrapy / <https://www.analyticsvidhya.com/blog/2017/07/web-scraping-in-python-using-scrapy/>