

Abstract

Background: Saudi productive families' projects can be considered as one of the main sources to generate employment opportunities especially for low and limited income families. This type of project promotes self-employment among Saudi families through manufacturing variety of products at home (e.g. traditional food, women's traditional clothes, etc.).

Purpose: In line with Vision 2030 and seeking to empower the local women economically, this project conducted to develop a mobile application for promoting and marketing family-made products with lowest cost.

Method: This project will be carried out by building an Android application that is written in java, android studio and SQLite

Keyword: Productive Families, Mobile Application, customer,
, Admin

Acknowledgements

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and T. Noura Alnagimishi willingness to give time so generously them been very much appreciated.

And also great thanks to my friends.

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Chapter 1: Introduction

1.1 Overview

The success of Saudi women in many businesses and projects reflects the true will and confidence of the role they play because in many cases it is the responsibility of the woman to maintain the family and provide the necessary needs for her family.

Within the concept of entrepreneurship, a productive household is a living example of entrepreneurship. A family that has the courage to diversify its sources of income by doing manual or domestic work, no doubt it entered the world of entrepreneurship from its widest.

It is considered that the projects of families produced by the nucleus model for small women's projects. It offers the opportunity to work and produce and even manage the project from its home and then achieve a financial income and independent income can be increased with every success, one of the most important factors for the success of the projects of the productive families is the creation of a suitable and good marketing environment and arrive food as needed for the consumer (to keep it clean / properly stored/upgraded)

on the other hand, I believe that "houses are the best factories and that the best brand is the man who made it, not the product. My view of the success of applications that serve public restaurants has been very successful and obvious to consumers. Such as applications (requests / hyperlinks / attachments) and others

I have found an application (productive families) with pride and hope to serve this group to develop their income and deliver food to the consumer as it should clean and better way

This application provides an easy, simple and efficient way to market household products and connect them to the consumer in a quick way

Based on this, motivated myself to develop a Saudi productive families' project

1.2 Problem definition

Women are a great help for their families and children, many of whom work in local production to use their time and make it a source of income. However, despite the large number of productive families of our time, these families were unable to continue marketing their products for different reasons, these reasons include:

- Productive family shops: a big percentage is taken from each product by the shop.
- Public places: not a safe environment and can affect the quality of the products.
- Selling from home: this has two problems, 1- some families can feel ashamed to do this 2- delivering the products usually requires a third party to do the task, which can cost them more.

Based on these problems that are facing productive families, we have chosen this project as a support for the wishes of productive families and a support method from charities.

1.3 Project goals

This project is mainly intending to implement a mobile app that can support low- and limited-income families and help them utilize their own resources and skills to establishing their small businesses or small enterprise.

1.4 Objectives

In line with Saudi vision 2030, this project is aiming to:

- Create a suitable and safe working environment for low-income families that capable of producing goods to market its produce
- Empower the local women economically
- Contribute towards better living standards of the low-income families.
- Help to improve productive family's skills and production quality through providing features that allows customers to comment and evaluate product that they buy which in turn will help to stimulate the growth and development of such small enterprise.

1.5 Critical success factors

In this proposed project, a several factors will be carefully considered in the design stage in order to ensure success for this app, which are:

(1) Usability

The simpler the mobile apps are, the more time a user spends than other apps that makes it harder to navigate and use. The productive family mobile app will have clear tools and steps to get user directed to different parts of the app.

(2) Understandability

The application will be implemented in a way that allows easy understanding of its functionality and behavior in a consistent screens and stable menus.

(3) Security

The sensitive data that the app will maintain such as customer details, productive family data etc., will be highly protected through fulfil certain requirements that meets with the data protection act (DPA).

(4) Portability

The mobile application will be installed and run by most of the existing Android mobile device.

1.6 Organization chart and responsibilities

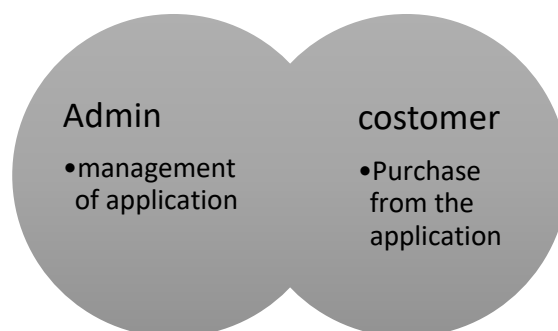


Figure 1.chart

Chapter 2: literature review

2.1 Introduction

Saudi vision 2030 determined to reinforce and diversify the capabilities of kingdom economy and keep more resources in the country. Among Saudi vision outstanding goals by 2030: create more job opportunities for citizens and lower the rate of unemployment from 11.6% to 7% and increase women's participation in the workforce from 22%to30%. Also increase SME contribution to GDP from 20%to 35% through create economic opportunities for the entrepreneur, the small enterprise as well as the large corporation and. What is more, the recently established SME authority plans to " support SMEs in marketing and help export their products and services, by leveraging e-commerce and collaborating with international stakeholders" (investment, 2016)

and the result to the some statistical studies for ordering food online (yougov, 2015), the study was conducted 418 respondents in Saudi Arabia "56% of respondents in the kingdom are requesting food at least once a week ,44% of respondents request food once a month.in addition,42% respondents now trust the ability of electronic channels to order food to conduct & deliver demand successfully , while most respondents (55%)prefer to order food by phone and when respondents were asked what would most affect their decision to order food online ,68%chose "Ease" ,64%"food quality "and 59% "quality of service and menu" as the most preferred factors"

This project is aiming to take advantage of apps capabilities to create jobs and online market to reach a wider audience through work from home, for those who unable to commute to work, or have some other constraint that prevents them from finding a full-time job, and they have a penchant for cooking.

2.2 Productive families

Productive families are one of the small enterprises that Saudi vision 2030 is aiming to create an economic opportunity for it, to play an active role in the local economy. Support for productive families can help to reduce unemployment rates as well as continuity of economic growth.

For the purpose of this project we can define productive families as: families that capable of producing goods and services that have monetary or exchange value but do not have economic abilities that helps them to upraise their business activities. Development of online sales outlets, such as mobile apps, will not only boost the sale of family-made products in comfortable work environment, but it will also expand the participation and independency of women, who are usually an active member that handle the biggest responsibilities in productive family's projects.

2.3 Mobile application

Uses of mobile application, which is new developing segment of the global information and communication technology, is rapidly growing day by day (Islam, Islam, & Mazumder, 2010)

Mobile applications, which are also known as apps, are "consist of software/set of program that runs on a mobile device and perform certain tasks for the user" (Islam, Islam, & Mazumder, 2010). Those apps are designed with a limited functionality; Mobile apps are individual software units that offer the user a clear value, for example, calling, messaging, browsing, gaming, chatting, accessing news, books, and more.

Mobile application wide use is due to its features; the mobile application is inexpensive, moveable, easy to use, accessible, downloadable and runnable in most of the mobile phones (Islam, Islam, & Mazumder, 2010)

Mobile application plays a powerful role in every aspect of our daily life. Mobile application plays a powerful role in every aspect of our daily life. The use of mobile apps is not limited to a specific sector; mobile apps can be seen in variety of areas such as education, shopping, banking, communication, etc.

According to Islam, Islam, and Mazumder, (2010), the mobile application, has a critical impact on today's businesses environment growth. Mobile application "can have two effects, better support for existing mobility in business processes and enabling of mobility where it was not possible before" (gumpp & pousttchi, 2005) Mobile apps can help to reinforce business brand and improve engagement with customers through creating a direct marketing channel.

2.4 Food Ordering Apps

In today's food delivery industry, a number of food brands had set up their ordering apps (e.g. Pizza Hut), as a core part of their business in order to help grow a new customer base and to keep up with their loyal customers. There are also numbers of apps that works with hundreds of restaurant and cafes chains and independents to deliver food to customers.

Food ordering apps can facilitate the process of marketing food products. There are many perceived benefits related to food ordering applications, with using such application, customers do not need to concern about traffic congestion, finding a parking, or even waiting in line. In turn it can help food business owners to reach a wide range of customers in very trendy and effective way with less cost and pressure.

There is an increasing global interest in studying current state of smartphone applications in supporting food ordering and how to improve its capabilities.

2.5 Related studies

There is an increasing global interest in studying current state of smartphone applications in supporting food ordering and how to improve its capabilities.

(yang, 2014), conducted a study to "build a food ordering client server application for Tom Yum Thai Oy, which is a Thai restaurant in Vaasa" (p2.). According to the author "Tom Yum Thai Oy' restaurant is characterized by cheap prices and delicious food and many people prefer to go to this restaurant, however, the problem faced by the restaurant is that it is unable to host this increasing number of customers due to its limited area size. In his study, Yang developed application that enables customers to order their favorite meals without the need to go to the restaurant. In general, this developed application helped to improve customer service and satisfaction and solve problem of congestion in the restaurant.

Similarly, a study conducted by by (Ricky, 2014) aimed to develop an ordering food application known as "Pick the Food" based on Android. "Pick the Food" app works with unspecified number of restaurant to deliver food to customers through providing number of features those facilities the ordering task.

In "Pick the Food" application, users or customers can make an order by two ways. The first one is using "Make a new order" feature to choose a restaurant and menus provided freely. The second way is by using "My Favorites" feature to make an order by choosing one of the top

three favorites restaurants. Developed app has Variety of features such as "Order History" which is divided to three parts, which are Last order, Last 3 orders, and Last 7 orders that have been made by customer. Additional feature provided by this app, is that it allows customer to make a direct call to the restaurant through this feature. "Pick the Food" can also show order status for customer which can be either "order received", "order confirmed", "cooking", "delivering order" or "done". What is more, in "delivering order" status, customer can show the delivery map while order being delivered.

2.6 Similar apps in the market

Food delivery apps popularity is growing in Saudi Arabia, there are verity of food delivery apps already available on the market. in this section a short review of the most successful food delivery apps will be conducted.

2.6.1 Hunger station

Hunger Station is an application developed in March 2012 as online food-ordering portal operates across Saudi Arabia and Bahrain. This application (See figure below) helps to bring food from customer favorite restaurant to customer doorstep and pay cash on delivery with giving them diverse options that meet with their needs (HungerStation, 2012).



Figure 2. Hunger Station app

received from <https://hungerstation.com/en>

2.6.2 Talabat

Talabat (See figure below) is a food ordering app was found in 2004 by a group of young entrepreneurs who took advantage of the online food ordering opportunity that existed in the Kuwait market. A decade later, Talabat operates across seven more Arabic countries (Kingdom of Saudi Arabia, Bahrain, United Arab Emirates, Oman, Qatar, and Jordan) which made it as one of the largest online food ordering platform in the Middle East. Talabat work with over 4,300 restaurant partners including brands (e.g. KFC, Pizza Hut) giving user or customer variety of options (talabat, 2014)



Figure 3. Talabat app
Received from <https://www.talabat.com/ar/ksa>

However, as we saw in the previous studies and examples none of them support productive families. This Project intention is to create electronic channels that support these families and gives local woman the opportunity to market their diverse food products that they made from their home. To sell these items, user can register on the app charge a small fee for hosting pro

Chapter 3: System Analysis

3.1 Introduction

This chapter, we use the system analysis by drawing (UML design), because there are certain requirements must meet the proposed application to achieve project objectives.

3.2 UML design

“The objective of the Unified Modeling Language is to provide a common vocabulary of object-based terms and diagramming techniques that is rich enough to model any systems development project from analysis to design “ (John Wiley & Sons, Inc., 2012)

The requirements to be achieved:

In Background Management Platform:

- Administrator can search item

- Administrator can be log in
- Administrator can manage categories
 - Add category
 - Update category
 - Delete category
- Administrator can delete item
- Administrator can create reports

In the store management platform

In the customer platform

- customer can be view item
- customer can be search item
- customer can be view account
- customer can be creating account
- customer can be confirming order
- customer can be add to chart
- customer can be view payment ways

These requirements are described in Figure 4

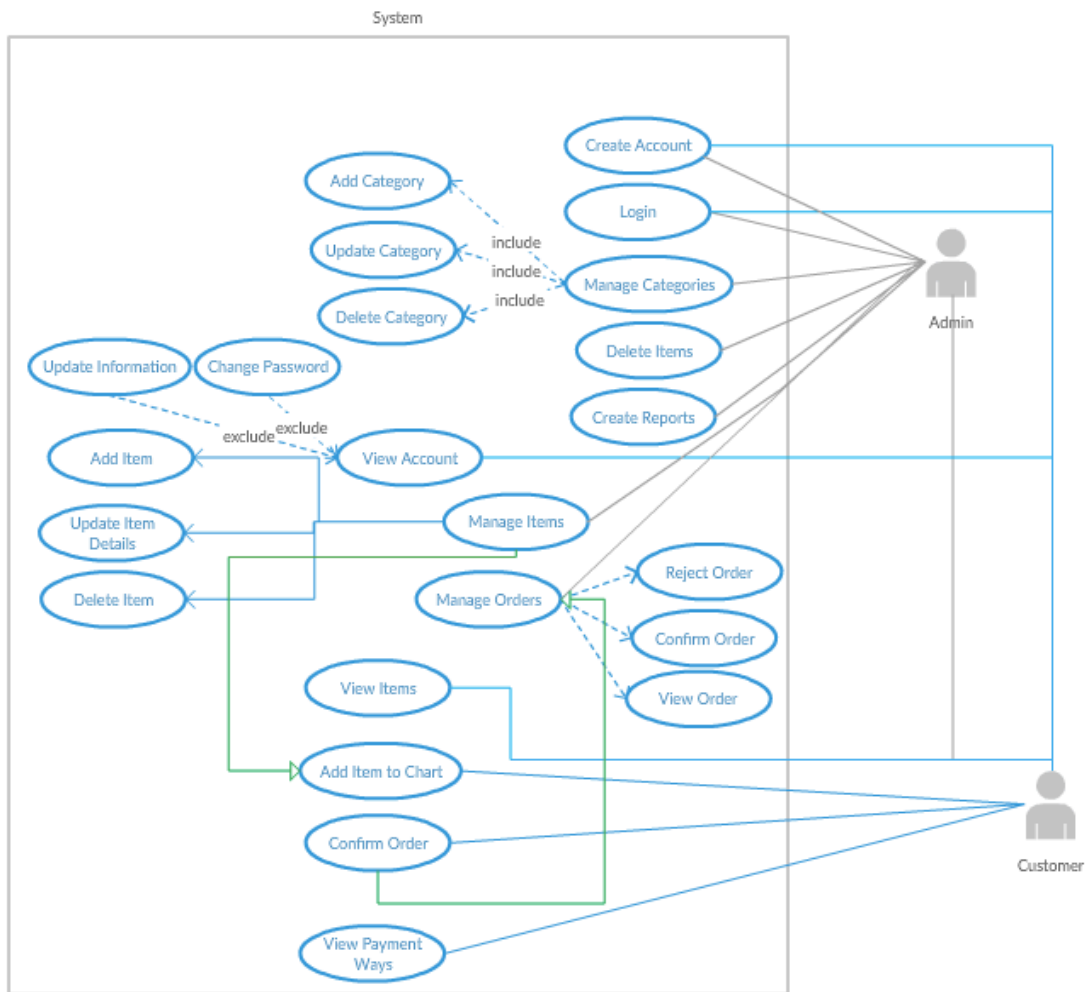


Figure 4. use case

“Use case diagrams are UML’s notation for showing the relationships among a set of use cases and actors. They help a software engineer to convey a high-level picture of the functionality of a system”. (Laganière T. C., 2005)

3.2.1 Description of Data Flow Diagram (DFD)

“data flow diagramming is a technique that diagrams the processes and the data that pass among them.” (John Wiley & Sons, Inc., 2012)

3.2.2 Overview diagram (level 0)

Once you have the set of DFD fragments (one for each of the major use cases), you combine them into one DFD drawing that becomes the level 0 DFD, there are no formal layout rules for DFDs (John Wiley & Sons, Inc., 2012)

The context level data flow diagram (DFD) is describe the whole system. The (o) level DFD describe the all user module who operate the system. Below data flow diagram of online shopping app shows the users can operate the system Admin & customer



Figure 5. context level 0

The Admin side DFD describe the functionality of Admin, Admin is an owner of the app.

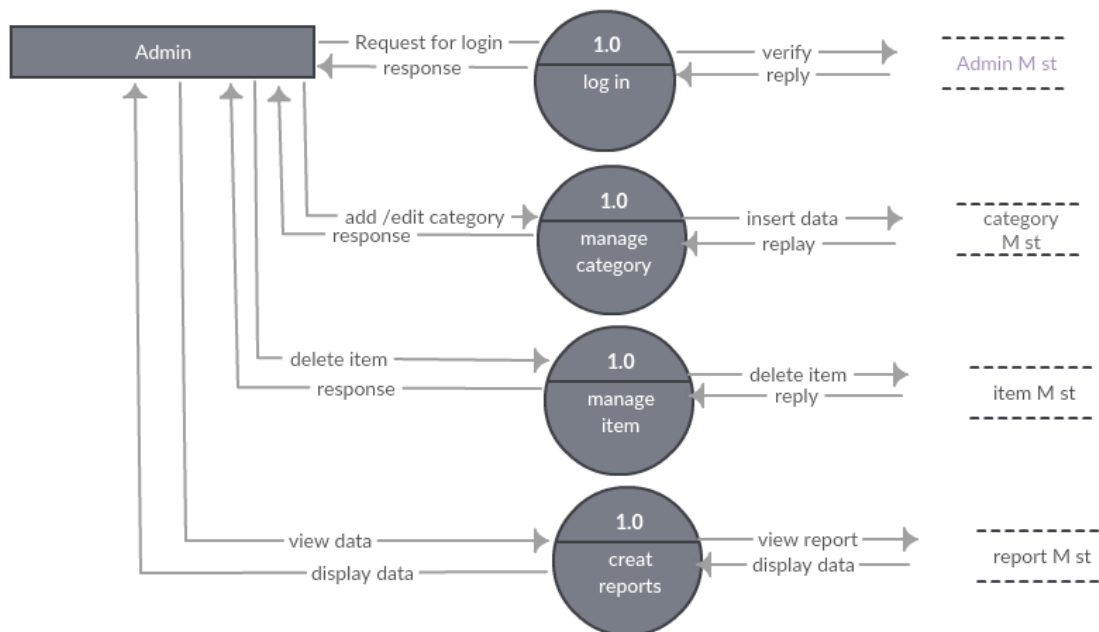


Figure 6. level 1

- Log in/out
 - Password
 - User name

When the administrator connects the background management platform, a log in interface will be displayed. The administrator needs to input correct username and password to log into the main page of the background management page. One admin username and password is pre-set when the application is initialized.

➤ Manage category

1. Add food category

○ Name of category

○ Note

When the administrator clicks “Category Manage”, a list view of dish category will be displayed. On the bottom of the list view page, there are two buttons: “Add Category” “update” and “delete”. While clicking the “Add Category” button, the page will be linked to a dish-adding interface, the administrator can add a new dish category here.

2. Delete food category

○ Name of category

When the administrator clicks “Category Manage”, a list view of dish category will be displayed. On the bottom of the list view page, there are two buttons: “Add Category” “update” and “delete”. While clicking the “delete” button, the page will be linked to a dish-deleting interface, the administrator can delete dish category here.

3. Update food category

When the administrator clicks “Category Manage”, a list view of dish category will be displayed. On the bottom of the list view page, there are two buttons: “Add Category” “update” and “delete”. While clicking the “update” button, the page will be linked to updating interface, the administrator can update category’s here.

➤ Manage item

○ Delete item

Name of item

When the administrator clicks “item Manage”, a list view of items will be displayed. On the bottom of the list view page, there are one buttons: “delete item”. While select item then clicking the “delete item” button, the administrator can delete item here.

➤ create report

The customer side DFD describe the functionality of customer. customer can make order

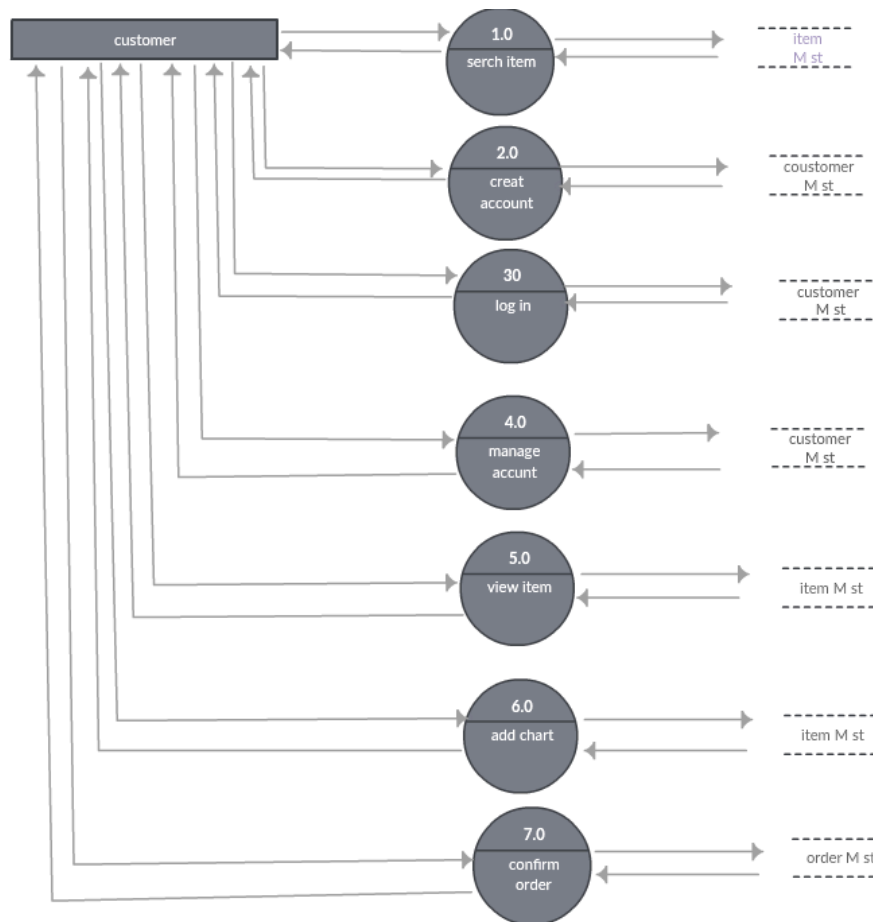


Figure 7. customer level 1

➤ Create account

- User name
- Password
- Email
- Phone
- Address
- Chose how to use this app

The customer will only be able to dial after registration and there are two button: login or create account. When clicking on a create account you will be required to enter the previous data.

➤ Log in/out

- User name
- Password

The customer will only be able to dial after registration and there are two button : login or create account . When clicking on login, he / she will be required to enter the previous data.

➤ Manage account

- Update information
- Change password

If the customer wants to update the information or change the password, he will click on the button Account Management

- View item

If the customer wants to display the item, he/she can click on it

- Add chart

When the customer selects the desired item, add to chart is pressed into the basket and this button is close to the image of item

- Confirm order

When the customer is grouped for the items to be desired, the order is confirmed by selecting the method of payment and then confirming the request and thus the request is made

3.3 Entity Relationship Diagram (ERD)

“Entity-relationship diagrams (ERD) are essential to modeling anything from simple to complex databases”. (Lucidchart, 2018)

I. Description of Entities

customers: they have attribute (Name, ID, password, phone) than can make order

order have attribute: (address, items, date, price)

admin management of items (Name, ID, password, phone, Email)

II. Description of relations

the customer can make orders, the order have many item & the admin manage of items

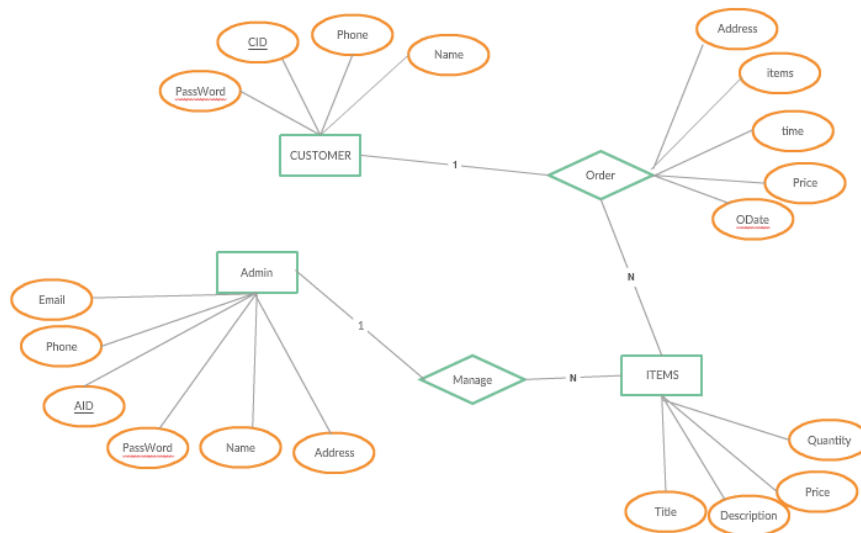


Figure 8. E

3.4 sequence Diagram

“ A sequence diagram illustrates the objects that participate in a use case and the messages that pass between them over time for one use case.” (John Wiley & Sons, Inc., 2012)

Customer make order

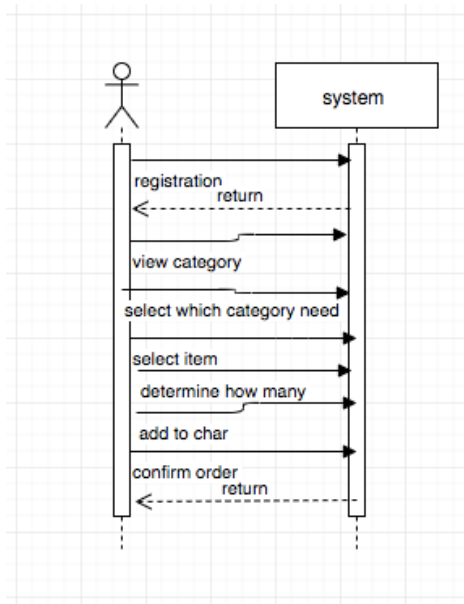


Figure 9. sequence

3.5 Class Diagram

“Class diagrams describe the data found in a software system” (Laganière T. , 2005) . in Figure 12 class members have all attribute for admin & customer & function for members create ID(), the class members have inherited the admin and the customer and order have class members have all attribute for shopkeeper & customer & function for members create ID, the class members have inherited the admin and the customer and each one of them have special attribute different from each other, namely the customer number of the purchases and the admin number of items and the number of selling ,order have attribute and function create ID()& the last one in the diagram item have attribute same function of order.

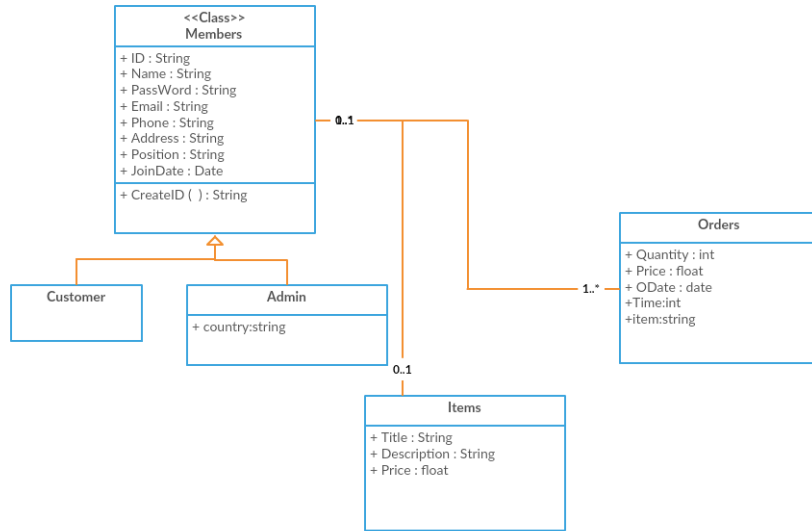


Figure 10. class

3.6 Activiti diagram

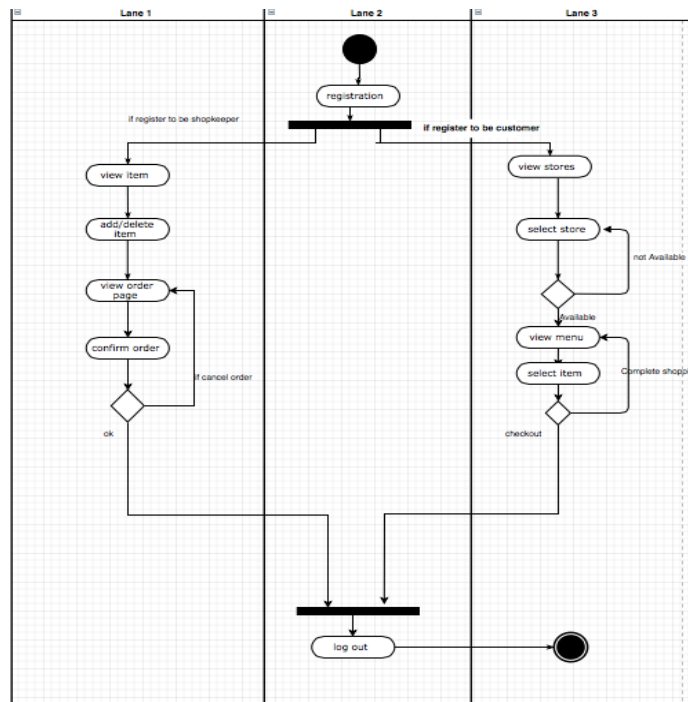


Figure 11. Activiti

Chapter 4: System design

4.1 Relation database schema

Entity name	Entity description	Attribute Name	Data Type	length	Primary key
Admin	The application manager	ID	String	50	√
		F name	string	50	-
		Email	string	50	-
		Phone	string	50	-
		address	string	50	-
		Password	string	50	-
costumer	Review products, add to the purchasing page	ID	string	50	√
		name	string	50	-
		Phone	string	50	-
		Password	vachar	50	-
		Email	string	50	-
		address	string	50	-
Item	The shopkeeper displays it by uploading an image to market it & customer select which want to order	ID	string	50	√
		Title	string	50	-
		Description	string	50	-
		price	string	50	-
		image	string	50	-
Order	It's make by customer	ID	String	50	√
		price	string	50	-
		C Name	String	50	-
		O Date	string	50	-
		Quantity	String	50	-

Table 1.relationship database schema

4.2 Hardware and software requirements

Device MacBook Ram: 8 G or more

Front End: Android Studio & java

Database: firebase

Chapter 5: Implementation and Testing

5.1 Introduction

In this chapter we will show my app and describe how to work it

5.2 Procedures

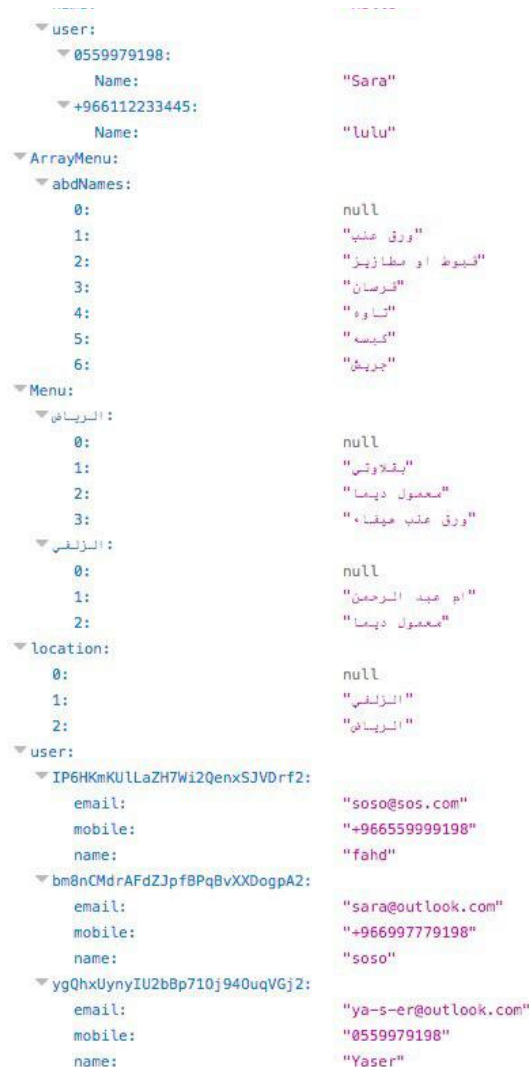
//Calculate the total price&show

```
ConfirmCartTotal = (TextView) findViewById(R.id.ConfirmCartTotal);  
ConfirmCartTotal.setText(CartFragment.carttotal+"SR");
```

//confirm order

```
finishOrderBtn = (Button) findViewById(R.id.finishOrderBtn);  
finishOrderBtn.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        Intent i = new Intent(getApplicationContext(), OrderConfirmedPage.class);  
        startActivity(i)
```

5.3 Reports



```
{  
  "user": {  
    "0559979198": {  
      "Name": "Sara"  
    },  
    "+966112233445": {  
      "Name": "lulu"  
    }  
  },  
  "ArrayMenu": {  
    "abdNames": {  
      "0": null,  
      "1": "ورق عنب",  
      "2": "نبيوط او سطاؤيز",  
      "3": "فوسان",  
      "4": "لباوه",  
      "5": "عنبه",  
      "6": "چريش"  
    }  
  },  
  "Menu": {  
    "الرياق": {  
      "0": null,  
      "1": "بقلاتوي",  
      "2": "محمول ديما",  
      "3": "ورق عنب هيغنا"  
    },  
    "الزلفي": {  
      "0": null,  
      "1": "ام عبد الرحمن",  
      "2": "محمول ديما"  
    }  
  },  
  "location": {  
    "0": null,  
    "1": "الزلفي",  
    "2": "الرياق"  
  },  
  "user": {  
    "IP6HKmKULLaZH7wi2QenxSJVDrf2": {  
      "email": "soso@sos.com",  
      "mobile": "+966559999198",  
      "name": "fahd"  
    },  
    "bm8nCMdrAFdZJpfBPqBvXXDogpA2": {  
      "email": "sara@outlook.com",  
      "mobile": "+966997779198",  
      "name": "soso"  
    },  
    "ygQhXUynyIU2bBp710j940uqVGj2": {  
      "email": "ya-s-er@outlook.com",  
      "mobile": "0559979198",  
      "name": "Yaser"  
    }  
  }  
}
```

Figure 12report for registration & menu &location

5.4 Layouts

- Application for customer
 - Welcome interface



الاسر المنتجة السعودية



Figure 13 Welcome interface

- Login/register interface



دخول

انشاء حساب جديد

تخطي



Figure 14 login/register interface

- Register interface



Figure 15 register interface

- category interface

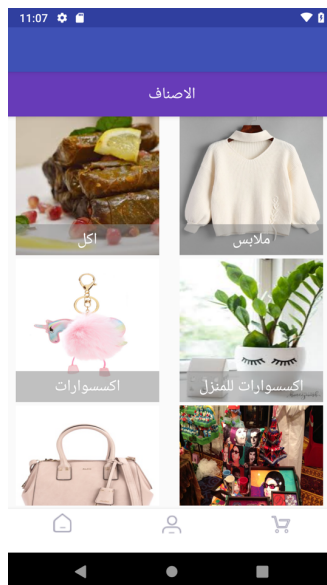


Figure 16 category interface

- shopping Bag interface

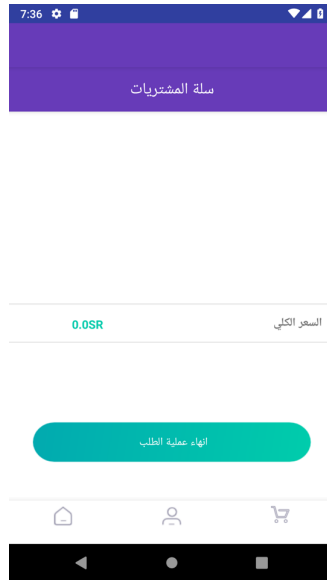


Figure 17 shopping Bag interface

- check out interface



Figure 18 check out interface

- profile interface

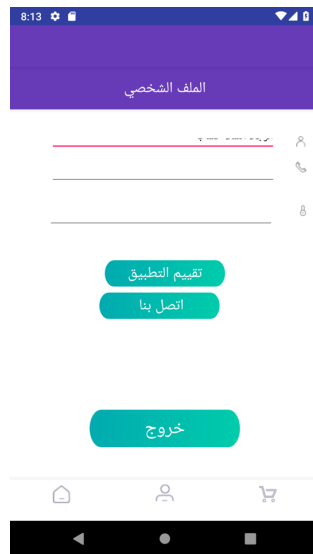


Figure 19 profile interface

- Application for Admin

- Login/register interface

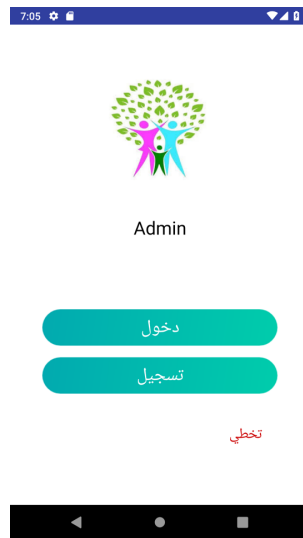


Figure 20 Login/register interface

- Home for Admin interface



Figure 21 Home interface

- items interface

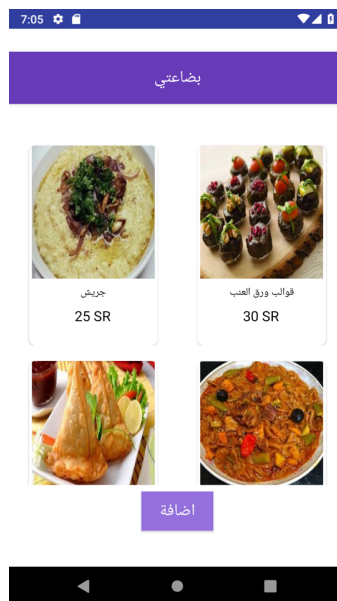


Figure 22 itims interface

- Add items interface

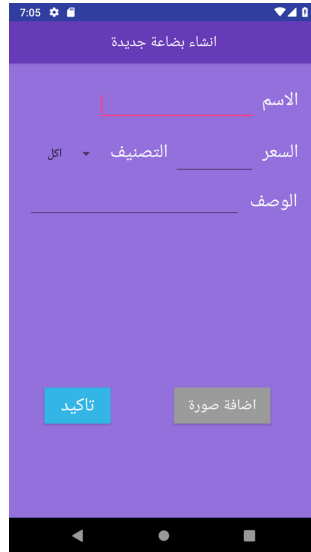


Figure 23 Add items interface

- Order interface for Admin



Figure 24 Order interface for Admin

5.5 Reports layouts

1- How to be registration

Productive Families

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تأكيد كلمة المرور

تسجيل

ليس لديك حساب؟ ادخل الان
تم التسجيل بنجاح.

Figure 25 report for register

2- How to be SGIN-IN

Productive Families

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كلمة المرور

ليس لديك حساب؟ سجل الان

دخول

The Password Is Invalid, Please Try Valid Password

Figure 26 report for enter

3- If confirm add the item to cart



Figure 27 add to cart

4- Show the cart

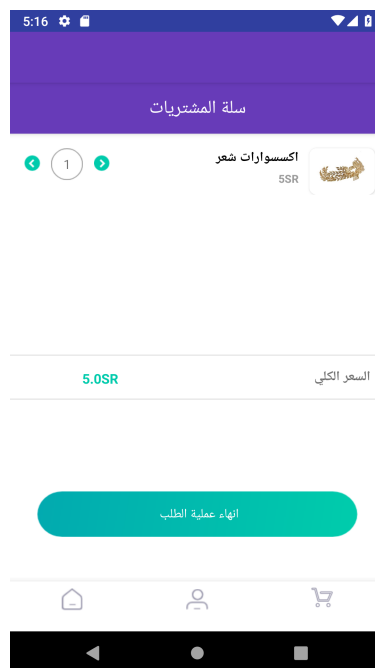


Figure 28 check out

5- Confirm the order after filling the requirements



Figure 29 confirm order

6- Evaluation the app



Figure 30 evaluit app

Chapter 6 : conclusion & future work


6.1 Conclusion

This project will be in line with Saudi vision 2030. It will help low-income families that capable of producing goods and services to sell and market their products. Moreover, this Application will empower the local women economically and increase women's participation in the workforce. This application would be one of tools that will help to create more job opportunities for citizens and lower the rate of unemployment.

6.2 future work

Application subscription is added to the user
Add comment on the product to the user

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