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جامعة المجمعة
وزارة التعليم العالي
كلية العلوم بالزلفي

SAUDI DIET APPLICATION

Student Affairs System
For College of science Al Zulfi
Department of Computer Science and Information

Graduation Project

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Abstract

Having a healthy society is the main concern for many healthcare practitioners nowadays for this reason, many healthcare leaders, organizations and supporting societies are taking the path of preventive medicine to save people from future health problems. One of the main tools that can help in this is technology. Combining the Medical Field with knowledge in Technology can help people get self-educated and help them in preventing themselves from getting ill. This application was focusing on a Saudi Diet, to help Saudis specifically track their eating habits, and get support in preventing obesity and cardiovascular problems. The application has been targeted Saudi traditional food types, and lifestyle. This would make it a different application than others in the market. It would be suitable for the Saudi children, men and women.

Keyword: (diet, Wight, Dietitian)

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I cannot express enough thanks to my family especially to my mother for her constant support of me and my father to tell me that everything will become good and brother for his nice comments about my project.

My completion of this project could not have been accomplished without the support my friend .

CERTIFICATE BY STUDENT

This is to certify that the project titled “SAUDI DIET APPLICATION” submitted by me (SHAHD ALMATAQ,351205459) under the supervision of T. Hajer Abraham for award of Bachelor degree of the Majmaah University carried out during the Semester 1, 2018-19 embodies my original work.

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Chapter1:

1. Introduction:

Obesity is becoming a major health problem worldwide. The World Health Organization defines it as "abnormal or excessive fat accumulation that presents a risk to health" (WHO 2016) In recent years, the number of overweight people has increased significantly, so much that the World Health Organization (WHO) has called obesity an epidemic illness, since it can cause a very wide range of further health consequences; like high blood pressure, diabetes, cardiovascular diseases, and may lead to cancer as well (Al Dhaifallah 2015).

Many organizations or Nutrition centers started to create tools for people to help them decrease their weight and go to a healthy life style. There are many concepts like dietitians delivering healthy food home for obese patients, or others mimicked international applications to aid patients in logging the type of food they will eat. In the current era, having customized tools to fit the real needs for customers is a real need that will of course have a big impact on the change targeted.

1.1) Problem Definition:

In Saudi Arabia, the problem of obesity is highlighted in a different manner, since it is a major problem for the society in all ages. The population in KSA is having a sedentary lifestyle had resulted in many health problems to them (Al Dhaifallah 2015) Al Dhaifallah explained that the low activity level and sleeping in addition to the lifestyle caused by the hot weather most of the time redirect factors for obesity. This can be true especially that the activities that people can do are limited to be inside the house. From this point a true tool, customized to the real needs of the Saudi Society seems to be the key for a real change.

1.1.1) Goals:

The goal of this SAUDI DIET APPLICATION is to be the ultimate diet application used by the Saudi population in order to help them control their meals, and help them achieve their target weight. This is mainly by having this application customized to the special Saudi food types and life style of the Saudi Population.

1.1.2) Objectives:

- 1) To help the Saudi people lose weight in a healthy way, by aiding in scheduling their meals with respect to their lifestyle.**
- 2) To enlighten the Saudi population on the calories present in each food type, and the portions to be eaten, by having the application specific to the Saudi food types**
- 3) To help the Saudi population be and remain healthy by providing health tips, and advices.**
- 4) To enhance the Saudi eating lifestyle by being modernized taking the benefits of the technology presented by mobile development.**

1.1.3) Critical Success Factors:

The application is ought to succeed for different reasons, in the first place there is no previous diet application made specific to the Saudi people, having their food types,

advices, and health tips made specific to their lifestyle. The second reason is that the application will be a free one to be downloaded by all the people to try it. Third, the application will be as a medical file for each person, where after logging his daily food intakes, any diseases, or allergy, he or she can share the file with anyone.

1.1.4) Organizational Chart & responsibilities:



Figure (1, Organizational Chart & Functions)

1.2) General Rules (Assumptions):

In order to use the application, the users must have a smartphone, and to have the best results out of the application, they should be consistent in logging their data. Furthermore, the team behind the application should be aware to update it with food types, and new health tips and advices

Chapter2:

Literature review:

2.1. Introduction:

In the local market, the diet application became widely developed and used by Saudi people to enhance their lifestyle and improve their health by staying fit and taking the benefits of the technology presented by mobile development.

One big survey and study in Saudi Arabia concerning diet and health where 10753 individuals aged 15 years or older were included found that only a small percentage of the Saudi population met the dietary recommendations and programs to improve dietary behaviors are urgently needed to reduce the current and future burden of diseases like heart problem, blood pressure problems, diabetes and cholesterol.

2.2. Literature review

Concerning a Saudi dishes oriented app, Twazon can offer local meals but not very specified we can find one app that only provide recipes and not a diet application which is Saudi Arabian

Twazon mobile application

It is a diet application in Arabic language that helps people track their activities and calculate their calories to reach the perfect body weight.

Twazon contains steps counters that help clients calculate their daily normal activities.

Developers of this application say that this application is not meant for pregnant women and for people who have some diseases. However its feedback rate is low and there is a lot of negative feedback about its functionalities especially in login and registration where the app closed and need to be open every time.



Fig (2.1. Twazon mobile application)

D.r Barbara mobile application

D.r Barbara is a mobile application that fits for you personalized diet and help you in its daily use.

Specialsts such as doctor, nutritionist, medical analyst, home accountant, psychologist, coach and personal trainer for people using mobile devices designed it.

The application will remind you of upcoming meals, prepare a shopping list for you and let you watch your weight changes.



Fig(2.1. D.r Barbara mobile application)

Calories

The application of a phone that features the user can know the calories in his food, but the disadvantage that it is not dedicated to Saudi food



Fig (2.1. Calories)

2.3. Comparison with two other Diet applications in the market

Features	Tuazon	Dr Barbara mobile app	Calories	Saudi Diet application
organize meals	✓	✓	✓	✓
Track calories	✓	✓	✓	✓
Saudi dishes oriented diet plans	✓	✗	✗	✓
Communicate with special dietitians for special cases	✗	✗	✗	✓
Suitable for pregnant and people with diseases	✗	✗	✗	✓
Manage shopping list	✗	✗	✗	✓
Diet plans are regularly updated by dietitians	✗	✗	✗	✓

Table (1.1, Comparison with two other Diet applications in the market)

We can found that our application can excel very well in its features in the market around it. The main features which is offering Saudi pure dishes in its diet plans can have greater benefits on its importance as well as communicating with special dietitians for special cases.

2. 4. Data collection:

Although there are many ways in which information can be collected for analysis, the most common method is a survey, a set of questions that are carefully coordinated and placed in a paper called a survey or model.

Based on the above, we will collect data using the survey method. A random sample of community members (63) was selected to identify the project idea.

The questionnaire is designed using Google templates and contains many questions about the application.

SAUDI DIET APPLICATION.

Most people with this idea were to see the questions and survey results see Appendix.

After relying on God, the next step in the project began to represent the drawing of the project plans

Chapter 3:

System Analysis and Specification:

3.1 Introduction:

Fundamental four-phase model (planning, analysis, design, and implementation) common to all information systems development projects. It describes the evolution of system development methodologies and discusses the roles and skills required of a systems analyst. The chapter then overviews the basic characteristics of object-oriented systems and the fundamentals of object-oriented systems analysis, design, and closes with a description of the Unified Process and its extensions and the Unified Modeling Language.

(Teagarden ,Wixom, Dennis,2012)

3.2. Diagram of Prototype model Used:

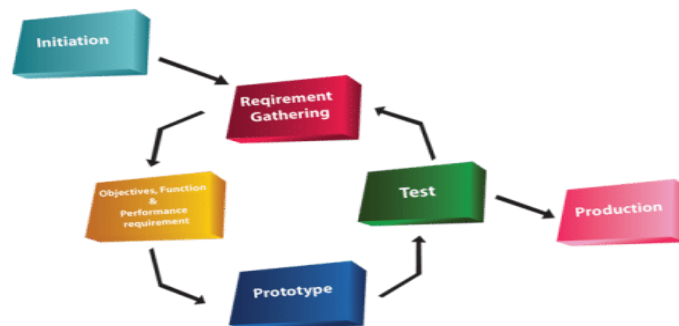


Fig (3.1. Diagram of Prototype model)

Retrieved from <https://www.testingexcellence.com/prototyping-model-software-development/>

3.2.1. Advantages of Prototyping

"1-The software designer and implementer can obtain feedback from the users early in the project.

2-The client and the contractor can compare if the software made matches the software specification, according to which the software program is built.

3-It also allows the software engineer some insight into the accuracy of initial project estimates and whether the deadlines and milestones proposed can be successfully met"

(Prototyping,2017, para2).

3.2.2. Disadvantages of Prototyping

"1-Often clients expect that a few minor changes to the prototype will more than suffice their needs. They fail to realize that no consideration was given to the overall quality of the software in the rush to develop the prototype.

2-The developers may lose focus on the real purpose of the prototype and compromise the quality of the product. For example, they may employ some of the inefficient algorithms or inappropriate programming languages used in developing the prototype. This mainly due to laziness and an over reliance on familiarity with seemingly easier methods.

3-A prototype will hardly be acceptable in court in the event that the client does not agree that the developer has discharged his/her obligations. For this reason using the prototype as the software specification is normally reserved for software development within an organization." (Prototyping,2017, para3).

3.2.3. When to use Prototyping Model

"1-Prototyping is very effective in the analysis and design of on-line systems.

2-Systems with little user interaction, such as batch processing or systems that mostly do calculations, benefit little from prototyping. Sometimes, the coding needed to perform the system functions may be too intensive and the potential gains that prototyping could provide are too small.

3-Prototyping is especially good for designing good human-computer interfaces. "One of the most productive uses of rapid prototyping to date has been as a tool for iterative user requirements engineering and human-computer interface design." (Prototyping,2017, para4).

3.3 Description of Data Flow Diagram (DFD):

Data flow graphical representation use to show us the relationships between components of the system. A lot of programmers use DFDs to show complex problem views and issues of the system in a simple way that can be understood by normal people.

Components of DFDs are: Entities, Processes, Data stores, Data flows.

3.3.1) Context Diagram:

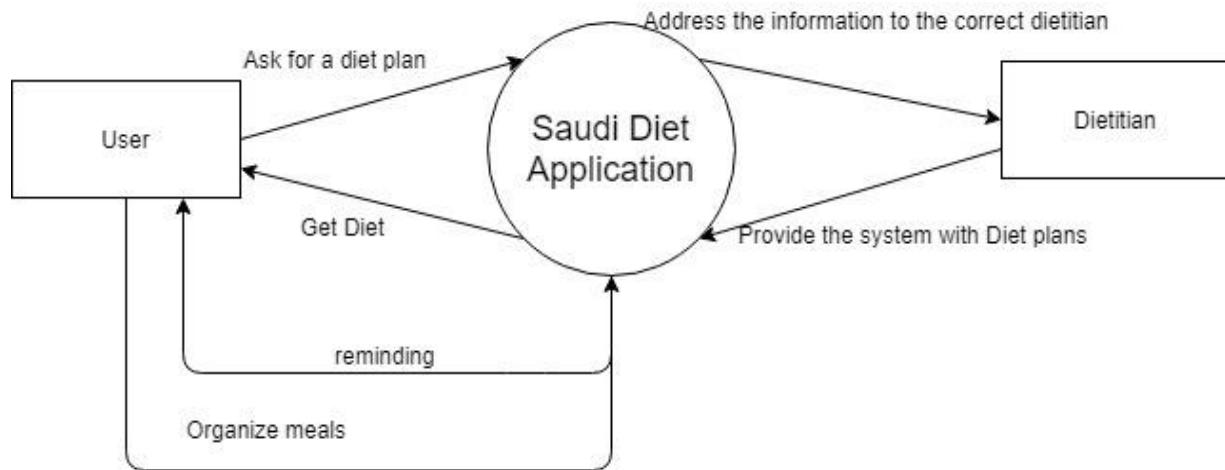


Fig (3.2. Context Diagram)

3.3.2) Overview diagram (level 0):

A context diagram is called a data flow diagram DFD level 0. The figure above can explain in a general way how the main component of the system interacts with each other. User can enter the application and ask for a diet plan. Based on his entered information while registering, the Saudi Diet App will find the perfect diet either by providing a ready diet or

by dealing with many dietitians that are working for the system. User can enter his meals to organize meal timing and calories intake.

3.3.3) Detailed DFDs Detailed DFDs:

A DFD will Show us how the data movement of between entities in a system. It will provide a big picture for how the system works all together and how the processes in the system are being directed

DFD Notations:

External Entity: Represents a human, subsystem or system

Process: A process is a business activity or function where the manipulation and transformation of data takes place.

Data Store: Represents the storage of persistent data required or/and produced by the process

Data Flow: Represents the flow of information, with its direction represented by an arrow head that shows at the end of flow connector.

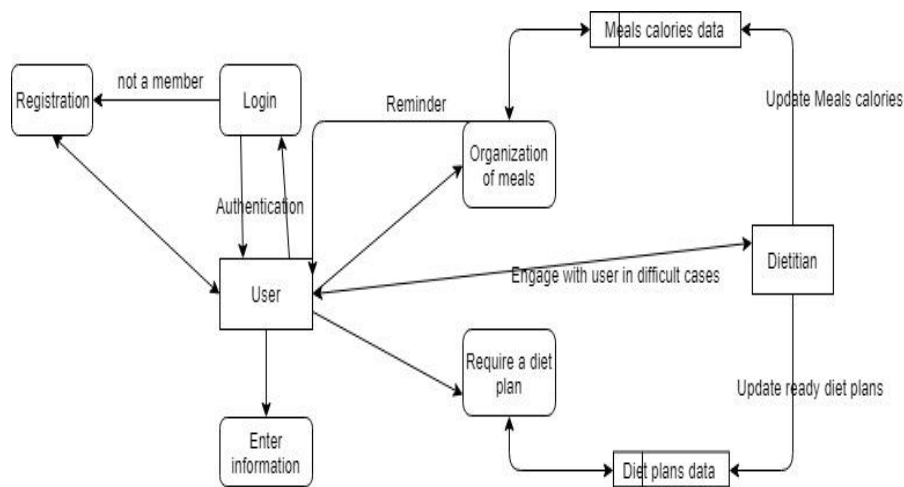


Fig (3.2. DFD Diagram)

3.4) Data Modeling Language:

3.4.1 . Use case diagram:

“A use case depicts a set of activities performed to produce some output result. Each use case describes how an external user *triggers* an *event* to which the system must respond” (DENNIS,WIXO ROTH,2009,P 149)

In our use case diagram, we have three actors:

USECASE DIGRAM FOR USER:

Actor 1: The main actor of the system is the User, he can write reports and rate dietitians, the user can organize his shopping list, he can request a diet plan and organize his meals.

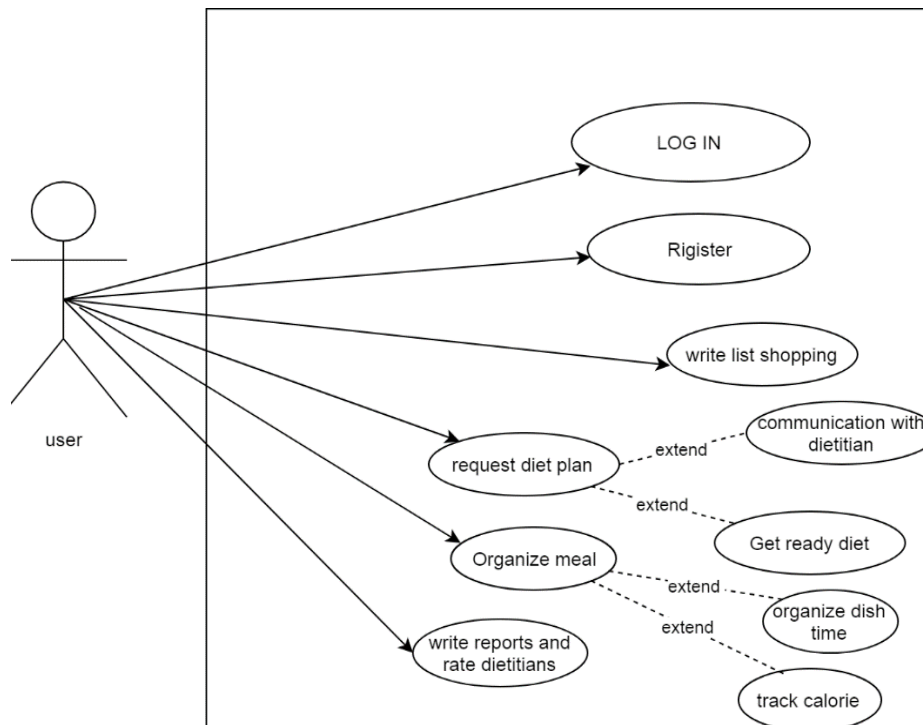


Fig (3.3. User case Diagram)

USE CASE DIGRAM FOR Dietitian:

Actor 2: The secondary actor is the Dietitian, the actions done by dietitian are:

Dietitian can login.

Dietitian can communicate with users.

Dietitian can update meals

Dietitian can update account

Dietitian can update items in the database and descriptions.

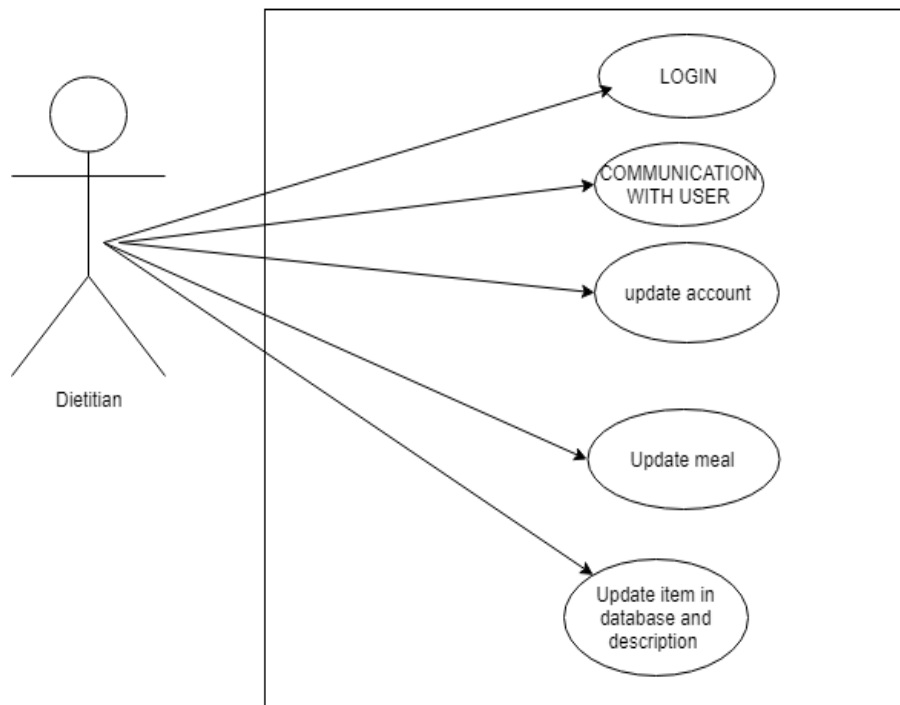


Fig (3.4. Dietitian Diagram)

USE CASE DIGRAM FOR Admin:

Actor 3: The third actor is the administrator of the system

-log in

-Admin can update account

- Admin can manage dietitian Hire or fire dietitians

-The admin can manage his account information, user, and reports

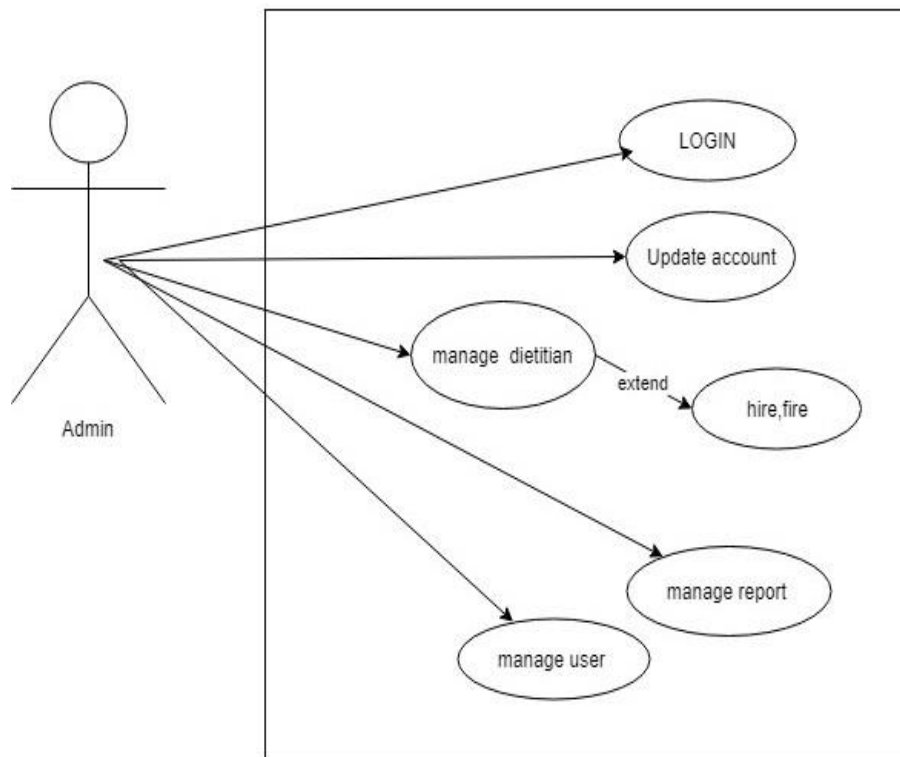


Fig (3.5. Admin Diagram)

3.4.2. Sequence Diagram:

The sequence diagram shows interactions in the system between objects put together respecting the sequence. It shows the message exchanged between the objects and what kind of interactions are done. In the Saudi diet application we look at the exchange between the actors and the system as well as the database. (Blaha,M ,Rumbaugh, J. 2010).

In the Saudi, diet application:

The login process: is the same to the user, dietitian or the admin, it is different when it comes to the database

User sequence diagrams

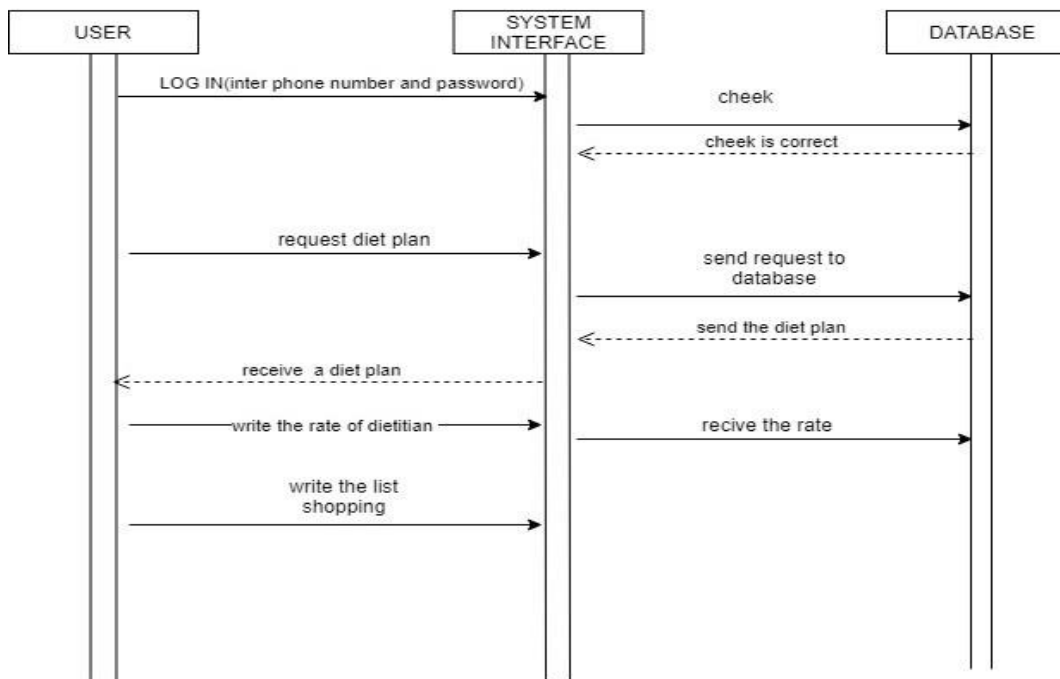


Fig (3.6. User sequence diagrams)

Dietitian Sequence Diagrams:

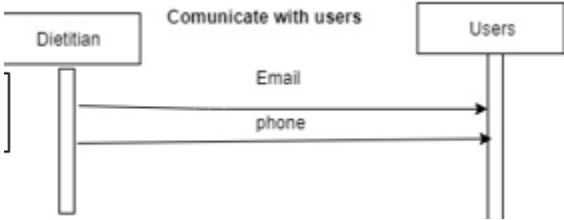
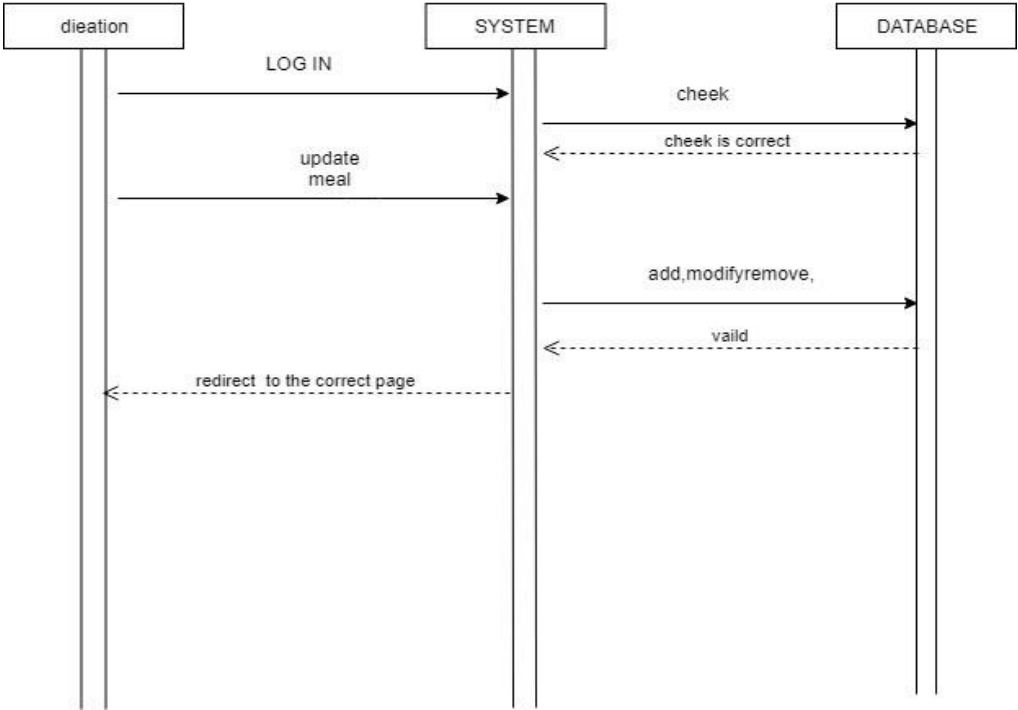


Fig (3.7. Dietitian Sequence Diagrams)

Admin Sequence Diagrams:

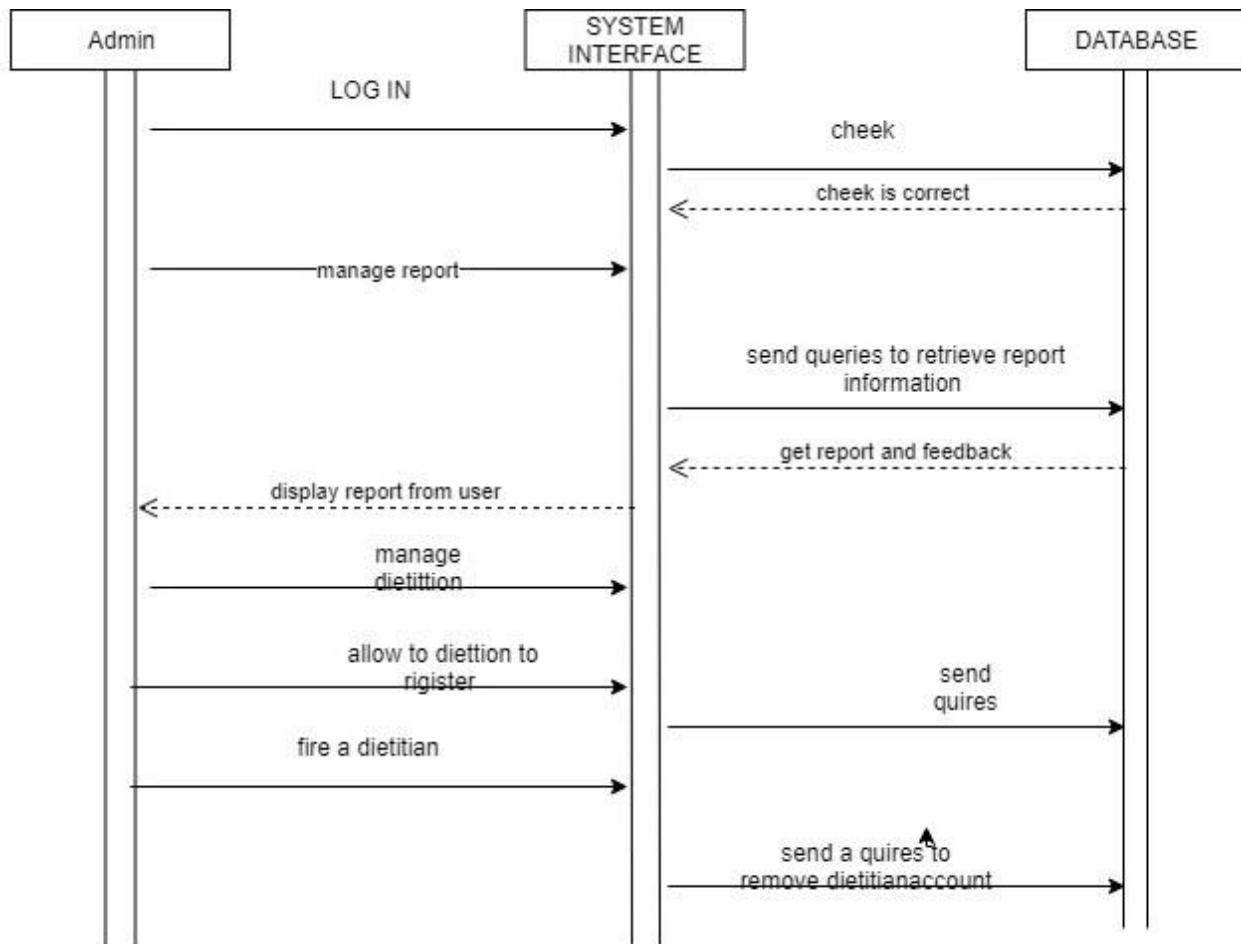


Fig (3.8. Admin Sequence Diagrams)

3.4.3 Class Diagram:

" type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among objects."(Visual paradigm,n.d,para1)

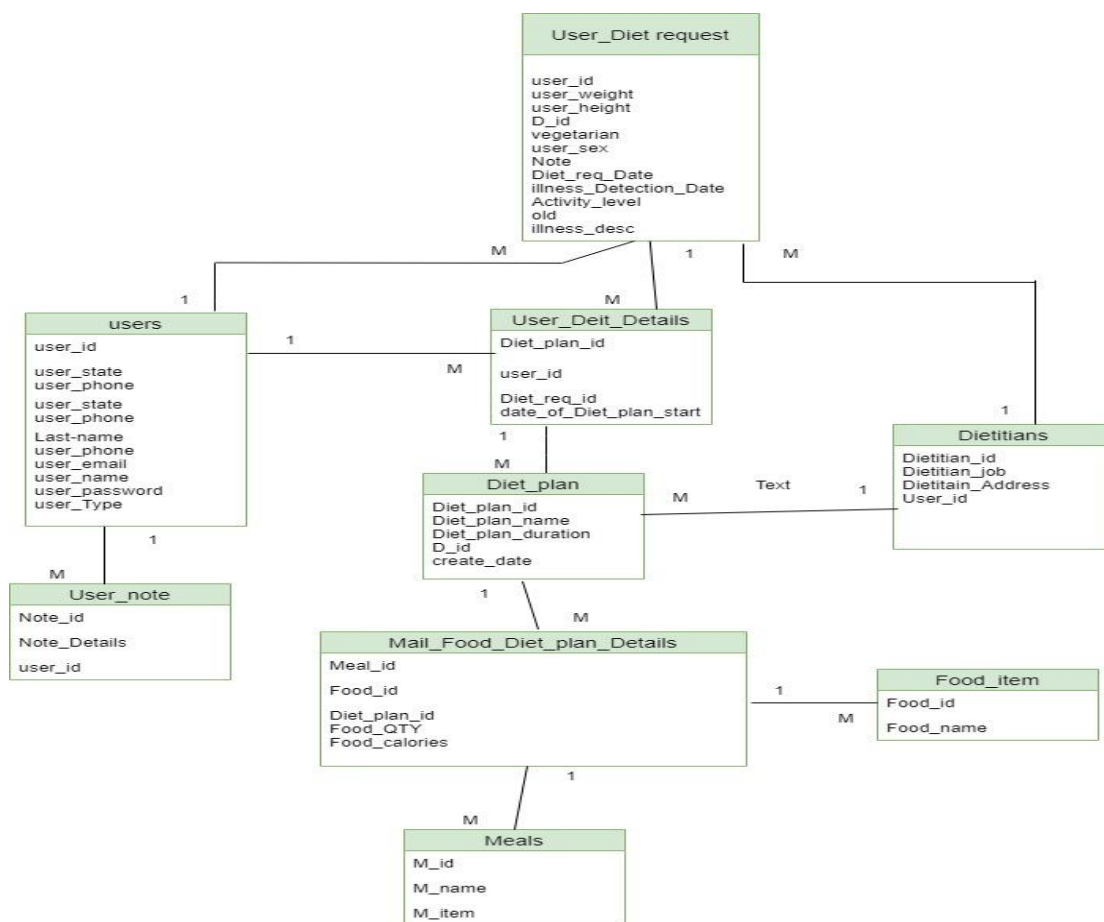


Fig (3.9. Class Diagrams)

The class diagram will show the static relationship between the components of the system. Every class has its data defined and a link to other class with the right type of association.

In the Saudi diet application, we have 9 classes that represent the component of the system and the relation between them. User can request a diet plan, so the relation between user and diet plan is “request relation” and 1.. to M

3.4.4. Activity Diagram:

The activity diagram give a wide look at the system, the activity diagram is a tool that can be offered to non-technical people to understand well the system.

An activity diagram will make us understand the business and software processes of a system. These actions and flows can be carried out by people, software components or computers. (Blaha,M ,Rumbaugh, J (2010)).

In the Saudi diet application we have for every actor of the system a main activity diagram.

Every activity diagram starts with a start sign (or begin) and ends with an end sign. A process is represented by a rectangle. The diamond shows a condition that if its content is met there will be a yes or no directions to follow. The black bar represents a fork or join process. Where a process could split to a different separated processes or multiple processes join to create and act on one single process.

Main activity diagram of the user

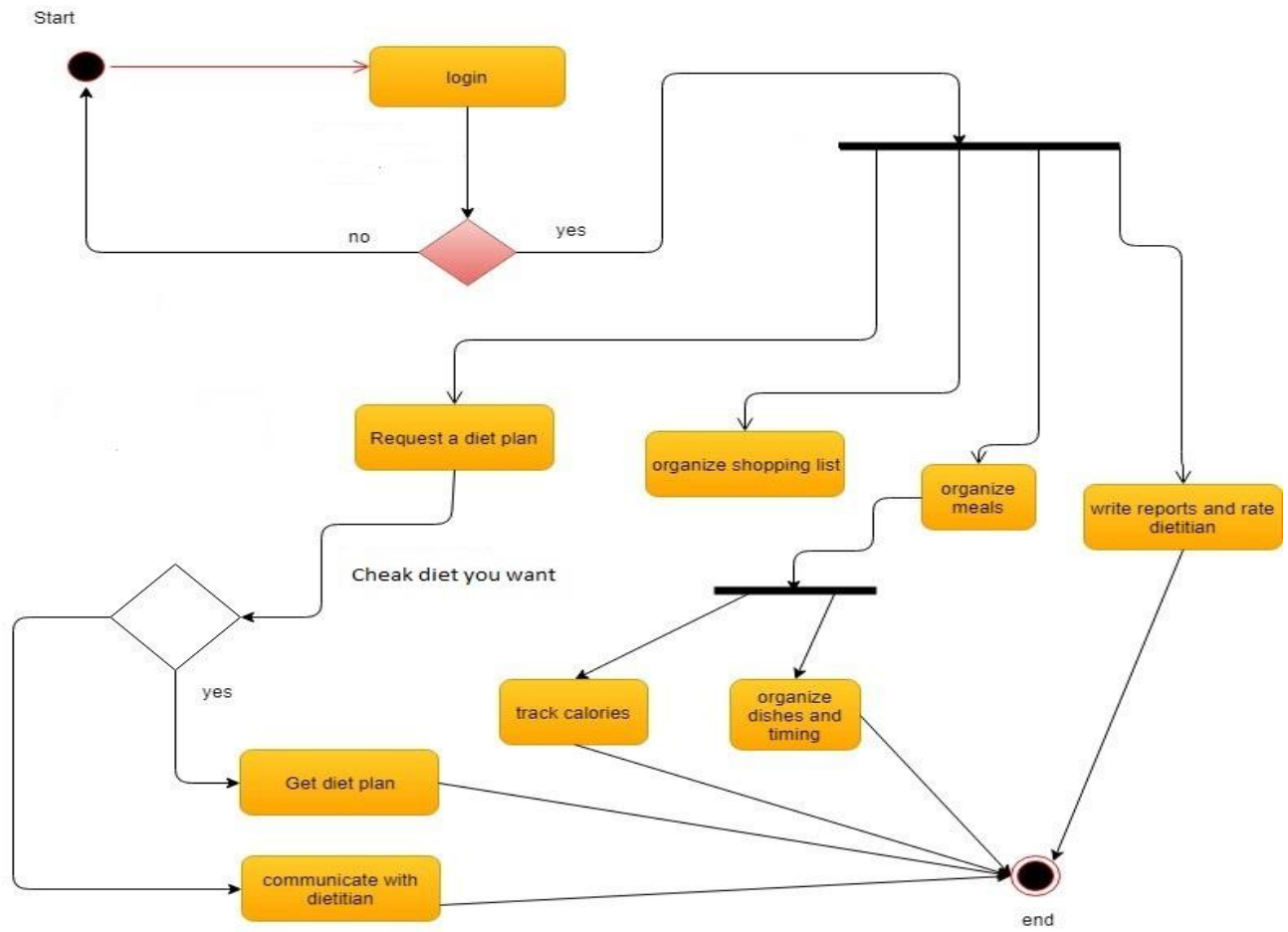


Fig (3. 10. Main activity diagram of the user)

Main activity diagram of the dietitian

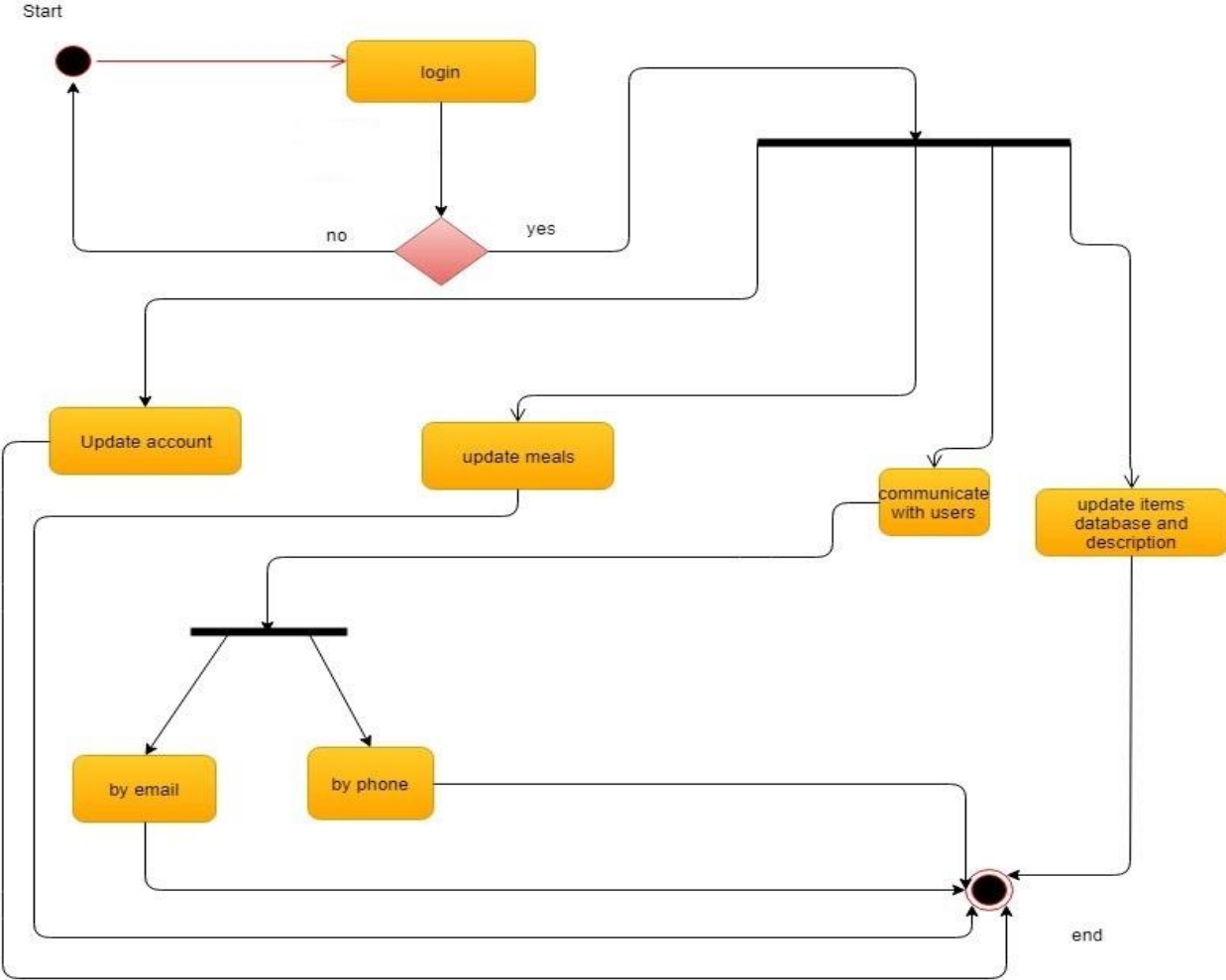


Fig (3. 11. Main activity diagram of the dietitian)

3.5. Entity Relationship Diagram (ERD)

Entity Relationship Diagram, also known as ERD, ER Diagram or ER model, is a type of structural diagram for use in database design.

3.5.1. Description of Entities:

User: The person entity is the user that uses the Saudi Diet application.

Meal: the Meal entity is the kind of meal and its description, it will be extracted from Saudi traditional food.

Food_ Item: The entity food item will represent mainly the number of calories inside an item.

Dietitian: Dietitian is the person who updates the system with diet plans corresponded to different categories of people. Dietitian will support the system with unknown or difficult Saudi dishes. Dietitian will provide one to one help for users if they did not find a convenient diet plan.

Diet_plain This entity is a type of diet system and its description, it will be created by a dietitian according to the user's request or according to previous studies.

User Notes: is Submissions sent by the user are reviewed by the responsible Dietitian and the system administrator.

3.5.2. Description of relations:

Relation between dietitian and diet plans entities: A dietitian can create and update a diet plans. A dietitian can create or update zero to many diet plans but one and only dietitian can create a diet plan

Relation between Diet plan and User entities: A User can request a diet plan that could be suitable for his body type or his plan. A diet plan can be requested by a zero or many persons and a person can request zero to many diet plans (zero if the person didn't use the feature or just stayed on organizing meals feature and many represents the case when the person will change his diet plan over time)

Relation between Person and Meal entities: A person can request or can prepare a meal. A person can prepare or request zero to many meals and zero or many person can request a meal.

3.5.3. Drawing ERD:

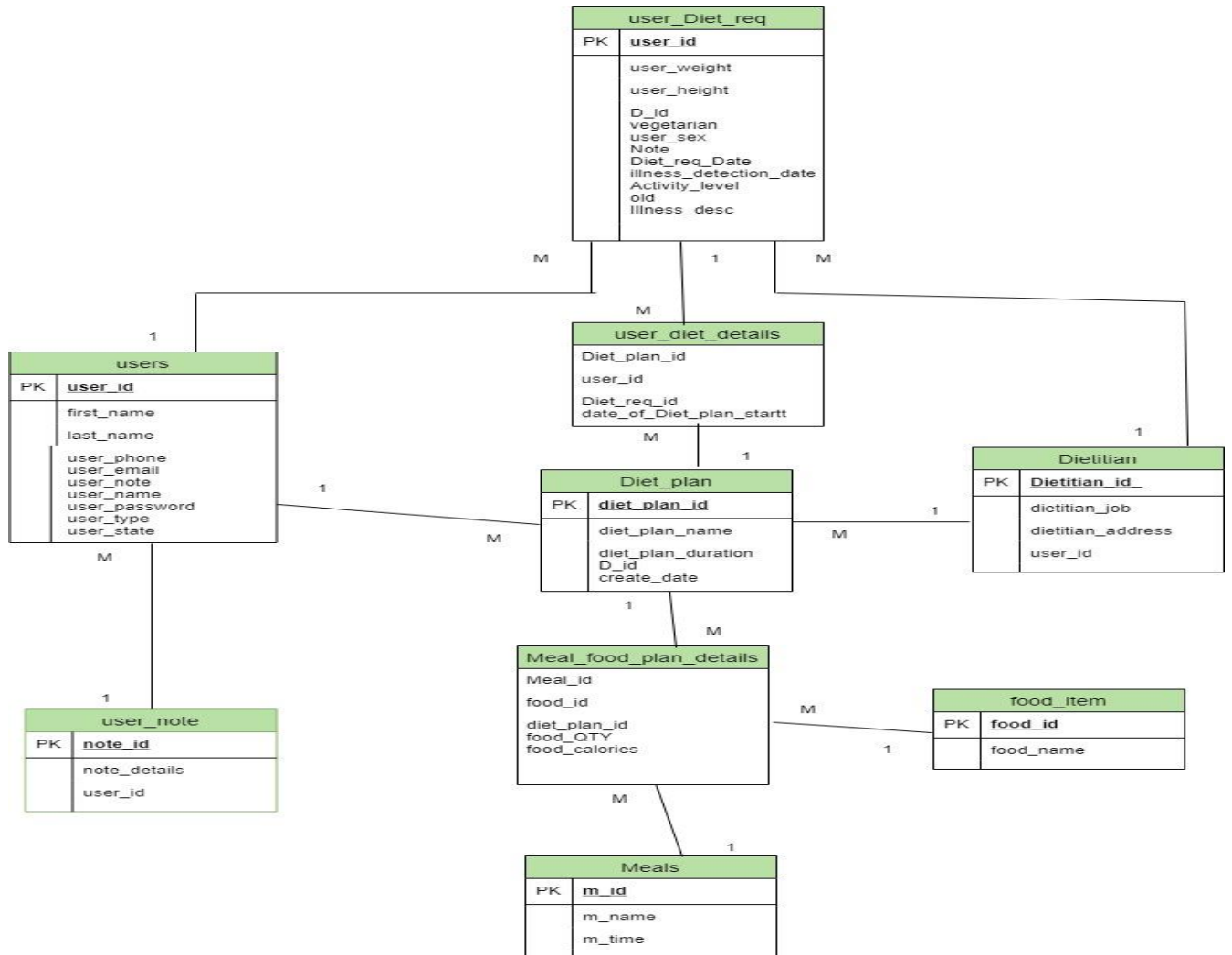


Fig (3. 12.ER diagram)




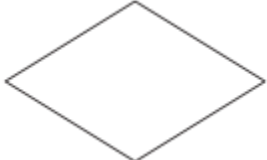

Chapter 4:

System design:

4.1 Description of procedures and function:

Flowchart diagram is a diagram that represents how the flow of procedures and function works in the system.

What are the symbols of a flow chart diagram?

Symbol	Name	Function
	BEGIN /END	Used to define Begin and End
	Arrows	used to indicate the direction of the flow of control.
	Proses	Processing symbols are used to indicate the arithmetic and data-movement instructions.
	Decision	have one entry point and there will be at least two exit points depending upon the decision taken inside the symbol.
	Input/output	are used to indicate the logical positioning of input/output operations.

(Agarwal,B , Tayal,S & Gupta,M,2009)

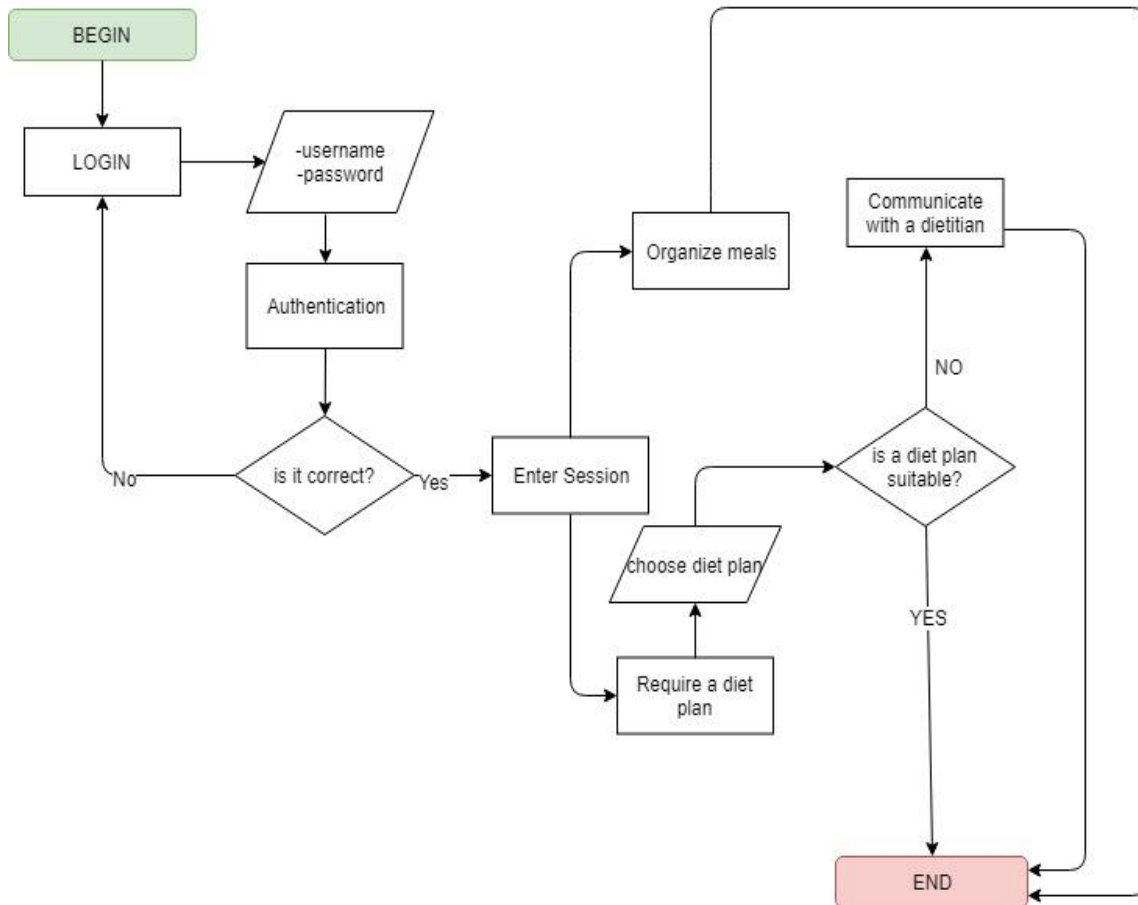


Fig (4.1.Description of procedures and function.)

Registration:

A user should register in order to use the Saudi diet application

Login:

Registration is required to do the authentication against the database. Login process is done by verifying the email and password from the database. If it is correct the user will open a session and can organize his meals or require a diet plan.

Meals organizing:

Users can organize their meals by knowing each item and dishes calories and can control their calorie intake by setting meals plans.

Request a diet:

Users can require a diet based on their information added while registering and more information required when they request a diet plan

Talk to a dietitian:

When a diet is not suitable for specific cases, users can speak to a dietitian and get special treatments.

4.2. Relation database schema:

A relational database (RDB) is a set of multiple data which can be organized by tables, records and columns. RDB can help developers to establish a well-defined relationship between tables. Tables communicate and share information, which facilitates data search ability, organization and reporting. RDBs use Structured Query Language (SQL). RDB is derived from the mathematical function concept of mapping data sets and was developed by Edgar F. Coded.

4.2.1 Tables:

The tables that should be used in the Saudi diet application are:

Users: holding information about the users.

Dietitian: holding information about the Dietitian and id of users

Diet_plan: holding information about the Diet plan

Food_item: holding the food name

Meal_food_datils_plan_datils: holding information about the food details plan details

Meal: holding information about meal

User_diet_datils: holding information about the User diet details

User_diet_req: holding information about User diet req

User note: holding information about holding information about

4.2.2. Attributes:

user			
Attribute Name	Data Type	Amount of Space	Constraints
user_ID	Integer		Primary Key
firstName	varchar	50	
lastName	varchar	50	
User_phone	varchar	14	
User_state	int		
User_email	varchar	50	
password	varchar	50	
User_type	int		

Table (4.1.user)

Dietitian			
Attribute Name	Data Type	Amount of Space	Constraints
Dietitian_ID	Integer		Primary Key
Dietitian_job	varchar	50	
Dietitian_address	varchar	50	
User_id	Integer		

Table (4.2. Dietitian)

Diet_plan			
Attribute Name	Data Type	Amount of Space	Constraints
Diet_plan_id	Integer		Primary Key
Diet_plan_name	varchar	50	
Diet_plan_duration	integer		
D_id	integer	14	
Create_date	date		

Table (4.3. Diet_plan)

Food item			
Attribute Name	Data Type	Amount of Space	Constraints
Food_id	Integer		Primary Key
Food_name	varchar	50	

Table (4.4. Food item)

Meal_food_datils_plan_datils			
Attribute Name	Data Type	Amount of Space	Constraints
Meal_id	Integer		
Food_id	Integer		
Diet_plan	integer		
Food_QTY	integer		
Food_calories	date		

Table (4.5. Meal_food_datils_plan_datils)

User_diet_datils			
Attribute Name	Data Type	Amount of Space	Constraints
user_ID	Integer		
Diet_plan_id	Integer		
Diet_req_id	Integer		
Diet_of_diet_plan_start	varchar	50	

Table (4.6. User_diet_datils)

User_diet_req			
Attribute Name	Data Type	Amount of Space	Constraints
diet_req_id	Integer		Primary Key
user_ID	Integer		
User_height	Integer		
User_weight	Integer		
User_sex	Integer		
D_id	Integer		
Diet_req_Date	date		
Illness_Detection_date	varchar	50	
Illness-desc	varchar	50	
Activity_level	int		
old	int		
vegetarian	Integer		
Notes	varchar	100	

Table (4.7. User_diet_req)

User Note			
Attribute Name	Data Type	Amount of Space	Constraints
Note_id	Integer		Primary Key
Note_details	varchar	100	
User-id	Integer		

Table (4.8. User Note)

Meal			
Attribute Name	Data Type	Amount of Space	Constraints
M_id	Integer		Primary Key
M_name	varchar	50	
M_time	time	7	

Table (4.9. Meal)

4.2.3 Hardware and software requirements

Software requirements:

Android Studio.

An application platform that makes it easier for developers to write source code for Android applications, allows developers to preview their application on various screen metrics instantly during development, and facilitates the development of multilingual applications.

Backend:

SQL Server



Visual Studio 2015



The language will used for the design Xml, Java and C#.

Hardware requirements:

Android phone or tablet: the android phone device will be used to install the application, open it, use it, and test it.

Chapter 5:

Implementation and Testing:

5.1. Introduction:

This chapter focuses on procedures, reports, layouts and report layouts.

5.2. Procedures:

I would like to mention that the application contains many important functions associated with each other, but here I chose the most important functions of the project from my point of view and frequent most of the application because of its importance.

1-onCreate ()

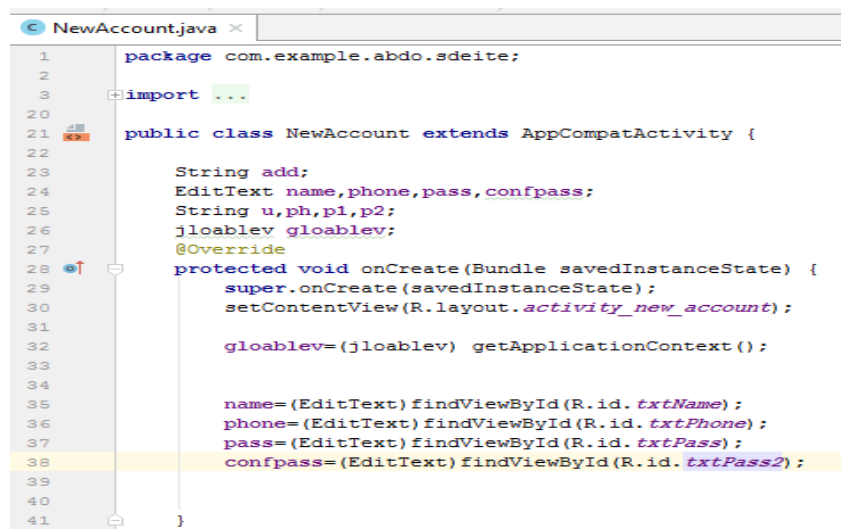
The first thing that happens when you run your application is often put in it

Activities related to the layout of buttons and menu.

2-getApplicationContext ()

We use it for Returns the context for all activities running in application.

This example of using two Procedures in the same function



```
1 package com.example.abdo.sdeite;
2
3 import ...
20
21 public class NewAccount extends AppCompatActivity {
22
23     String add;
24     EditText name, phone, pass, confpass;
25     String u, ph, p1, p2;
26     jloablev gloablev;
27     @Override
28     protected void onCreate(Bundle savedInstanceState) {
29         super.onCreate(savedInstanceState);
30         setContentView(R.layout.activity_new_account);
31
32         gloablev=(jloablev) getApplicationContext();
33
34
35         name=(EditText) findViewById(R.id.txtName);
36         phone=(EditText) findViewById(R.id.txtPhone);
37         pass=(EditText) findViewById(R.id.txtPass);
38         confpass=(EditText) findViewById(R.id.txtPass2);
39
40
41     }
```

Fig (5.1. Procedures)

5.3. Reports:

This Report takes form database SQL server 2012 for the SAUDI DIET APPLICATION

User Database

	User_id	First_name	Last_name	User_phone	User_Email	User_Name	User_password	User_Type	User_state
	1	شهد	عبدالله	000	sh1h698@gmai...	sh	123	3	1
✎	2	rema	saleh	12	h698@gamil,com	as	as	3	1
	1002	ahmed	NULL	123456789	NULL	NULL	123	3	1
	1003	ahmed	NULL	123456789	NULL	NULL	123	3	1
	1004	Fatema	NULL	25413678	NULL	NULL	1	3	1
	1005	Noor	NULL	254789	NULL	NULL	1	3	1
	1006	Hanen	NULL	254789	NULL	NULL	1	3	1
	1008	نهال	NULL	147	NULL	NULL	111	3	1
	1009	shahd	NULL	0550764914	NULL	NULL	123	3	1
•	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Table(5.1. User Database)

Dietitian Database

	Dietitian_id	Dietitian_job	Dietitian_Addr...	User_id
✎	1	طبيب صحة عامة	الزلفي	1
•	NULL	NULL	NULL	NULL

Table(5.2. Dietitian Database)

User Note Database

	Note_id	Note_Details	User_id
	1	ممتاز	1
	2	فاشل	1
	3	انا المستخدم شه	1
▶	7	good	1
	8	good	1
	9	تجربة ممتازة	1
	10	تجربة ممتازة	1
	11		1
	12		1
	..		.

Table (5.3. User Note Database)

Diet plan Database

	Diet_Plain_id	Diet_Plain_name	Diet_Plain_dur...	D_id	Create_date
▶	1	نظام ثبات الوزن	60	1	2018-10-01
	2	نظام التخلص من...	90	1	2018-10-01
	3	نظام المرضع و ا...	720	1	2018-11-04
	4	نظام الديتوكس	270	1	2018-11-04
	5	نظام رمضان	30	1	2018-11-04
*	NULL	NULL	NULL	NULL	NULL

Table(5.4. Diet plan Database)

Food item Database

Food_id	Food_name
1	خير ابيض صغير
2	... خير اسمر صغير
3	...شريحة توست اب
4	...شريحة توست ا
5	بيض مسلق
6	بيض مقلي
7	كوب لبن
8	... كوب حليب كامل
9	شريحة جبن
10	تفاح
11	برتقال
12	صور
13	شراب توت
14	شريحة جبن
15	ملعقة قشطه
16	اربعه ملاعق فول
17	ملعقة قشطه
18	...روب " زيادي" كام
19	...روب " زيادي" حال

Food_id	Food_name
22	قهوه عربيه
23	...نسكافيه بدون س
24	تمر
25	لوح مارس
26	كمنرى
27	لواكر
28	كوب مكرونة
29	...نصف كوب زرابى
30	... فخذ دجاج مشوي
31	... فخذ دجاج مشوي
32	سمك مشوي
33	الهريس
34	صحن جريش
35	...صحن ياميه مقط
36	صحن مطايز
37	مرقوق
38	كيسه لحم
39	شاورما"لحم صافى

Table (5.5. Food item Database)

Meal food details plan details

	Meal_id	Food_id	Diet_plain_id	Food_QTY	Food_calories
▶	1	1	1	2	208
	1	2	1	1	200
	1	3	1	4	270
	1	4	1	2	200
	3	2	1	5	201
	4	6	5	4	6
	5	7	1	1	210
	5	8	1	1	1
	5	9	1	1	250
	1	17	1	1	37
	1	20	1	2	90
	1	8	1	1	150
	1	16	1	4	255
	1	18	1	1	141
	1	6	1	1	91
	2	24	1	1	26
	2	21	1	1	104
	2	22	1	1	1

	Meal_id	Food_id	Diet_plain_id	Food_QTY	Food_calories
	2	21	1	1	104
	2	22	1	1	1
	2	23	1	1	5
	2	10	1	1	81
	2	25	1	1	242
	2	27	1	1	160
	3	28	1	1	344
	3	29	1	1	131
	3	35	1	1	25
	3	30	1	1	223
	3	37	1	1	101
	3	38	1	1	173
	3	39	1	1	317
	3	40	1	1	370
	4	22	1	1	1
	4	24	1	1	26
	4	25	1	1	242
	4	27	1	1	160

Table (5.6. Meal food details plan details)

User diet request Database

	Diet_req_id	User_id	User_height	User_weight	User_sex	D_id	vegetarian	Notes	Diet_req_Date	Illness_Detec...	Activity_level	Old	Illness_desc
▶	11	2	12	2	1	1	1	أرجو الرد في ا...	2018-11-04	12/4/2015	3	2	صداع
	12	1	150	1	1	1	2		2018-11-14	اختار تاريخ الا...	1	14	
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Table(5.7. User diet request Database)

Meal Database

	M_id	M_name	M_time
▶	1	فطور	06:30:30
	2	سناك 1	10:00:00
	3	غداء	13:00:00
	4	سناك 2	15:00:00
	5	عشاء	19:00:00
*	NULL	NULL	NULL

Table (5.8 Meal Database.)

User diet details Database

	User_id	Diet_plain_id	Diet_req_id	date_of_Diet_P...
▶	1	1	11	2011-11-01
*	NULL	NULL	NULL	NULL

Table(5.9. User diet details Database)

5.4. Layouts:



Fig (5.2.Logo interface)



Fig (5.3.user access)

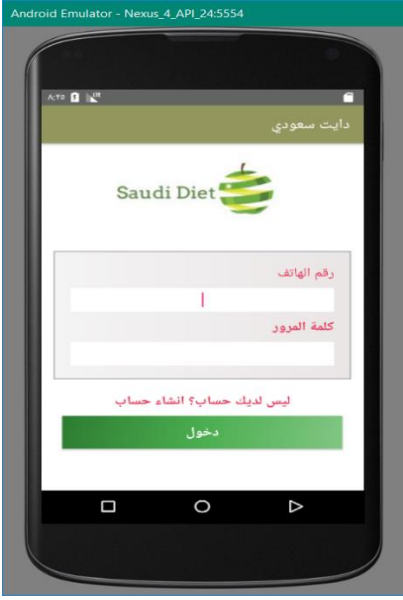


Fig (5. 4)LOG IN interface



Fig (5.5)Home page interface



Fig (5.6.Services interface)



Fig (5.7.Communication with Dietitian)



Fig (5.8. Write rate of Dietitian)



Fig (5.9. About the SAUDI DIET)



Fig (5.10..MEAL interface)

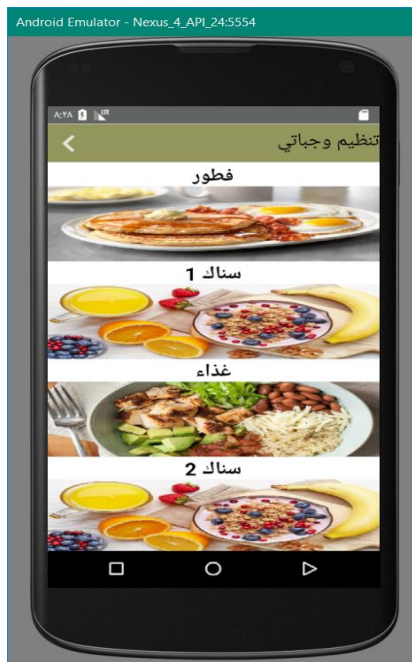


Fig (5.11 Organize meal time and calories)



Fig (5. 12..Breakfast food and calories)

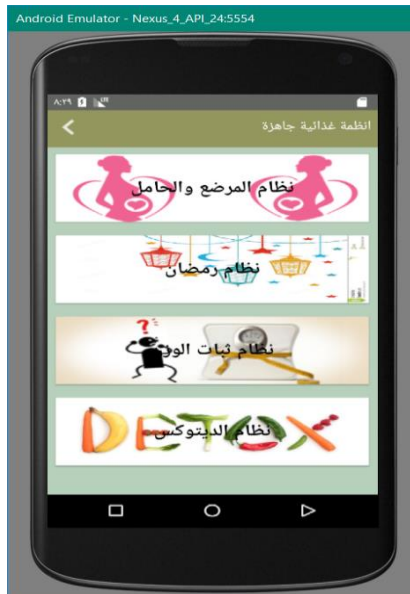


Fig (5.13.Ready Diet plan)



Fig (5.14.DIET Plan for parget and mother)



Fig (5.15LIST shopping interface)

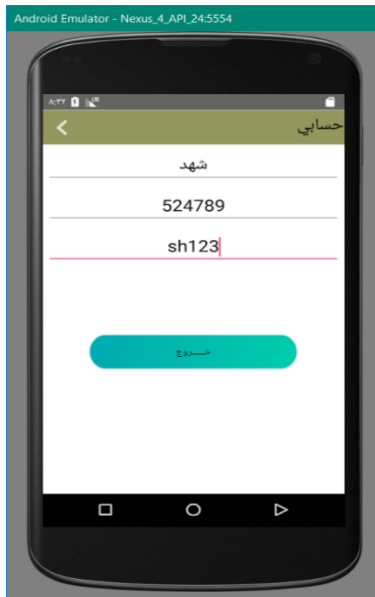


Fig (5.16.Account interface)



Fig (5.17.Side bar)

5.5. Report Layouts:



Fig (5.18.create account)

The figure 5.17. show us the information we should write it to create account the name of user, phone number and password after the user write this information, will see this statement "Account successfully added".



Fig (5.19.after register or login we well go to home page interface)

The fig 5.18. Show us what interface come after register or login



Fig (5.20.request diet plan from Dietitian interface)

The fig 5.19. request diet plan the user must write this form and press send to get a suitable diet.



Fig (5.21. Write rate of Dietitian interface)

The fig 5.20 the user can write his own assessment and experience with the Dietitian or if the reaction of the nutritionist is delayed.



Fig (5.22. list shopping interface)

The fig 5.21 the user can write food purchases for his diet.

Chapter 6:

Conclusion and Future Work:

This application aimed to highlight on a new application in the Saudi Market. This application is mainly about helping Saudis track their food habits and help them in preventing obesity, which indirectly might lead to other illnesses such as cardiovascular problems. The application will be having calories track, specialized to the Saudi meals such as (Foul, Kabsa, etc...). The technical team as well will be responsible to add and upgrade the food types; therefore, the application will not be limited to a specific number of food items. Furthermore, the customer that will choose to download this application will get the chance to communicate with a dietician. This will be a great privilege for patients having sensitive cases such as diabetes, gluten or lactose intolerance. The application designed in a user-friendly interface the application's vision is to back up the Saudi Population is getting healthier.

I suggest that you continue to update and add items to the database. Perhaps we can add other sections, for example, the restaurant section, the number of calories in it, activate the nutritionist's role very effectively, and perhaps we can add a therapeutic food specialist. Moreover, suggested that communication between the dietitian user and that should be done either by telephone or email.

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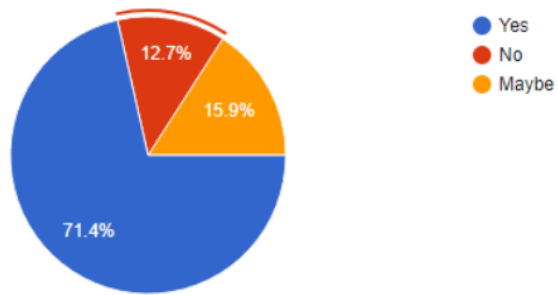
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Appendixes

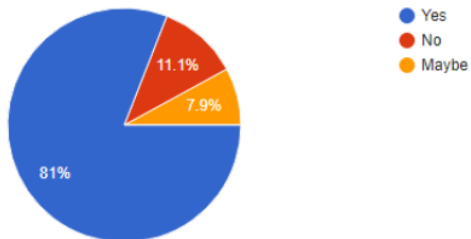
Appendix A

Survey Questions and results:

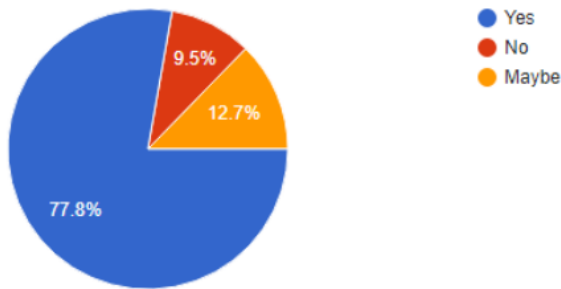
1. Do You need an application that helps you organize your meals?



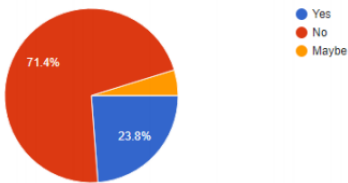
2. Do you need an application that helps you lose weight and has a Saudi dietary culture?



3. Do you believe that the application will help in the process of losing weight?



4. Have you ever used an application to organize meals in which Saudi culture is available based on the needs of the body?



5. You will use the application?

