**2. CHAPTER TWO: REQUIERMENTS**

**2.1 Gathering Requirements**

We’ve chosen the questionnaire technique as a requirement gathering technique we’re depending on future user’s opinions and how do they react with the system any feedback or suggestion from our future users will be considered and put in action in order to update our application and make it more efficient.

استبيان لمشروع التخرج

1-هل تعتقد بان توفر استشارات طبية عبر تطبيق هاتفي امر جيد ام سيء؟

\*جيد

\*سيء

2- هل تشعر بالخصوصية اذا كانت الاستشارة الطبية مقدمة عن طريق تطبيق هاتفي؟

\*نعم

\*لا

3-هل وجود تطبيق هاتفي يوفر الاستشارات الطبية يساهم في توفير الوقت و مساعدة الاشخاص الذين لا يمتلكون الوقت للذهاب للطبيب او المستشفى؟

نعم

\*لا

4-هل تؤيد فكرة وجود تطبيق هاتفي يربط الطبيب بالمريض ؟

\*نعم

\*لا

5-هل من الممكن ان تعتمد العلاج الذي ينصح به الطبيب عبر التطبيق و تلتزم به ؟

\*نعم

\*لا

6-هل من الممكن ان تثق بنصيحة طبيب مقدمة عن طريق تطبيق هاتفي؟

\*نعم

\*لا

**الاجابات :**

السؤال الاول:

94.4% جيد

5.6 % سيء

---------------------------------------------------------------------------------------السؤال الثاني:

74.3 % نعم

25.7 % لا

---------------------------------------------------------------------------------------السؤال الثالث:

77.1 % نعم

22.9 % لا

---------------------------------------------------------------------------------------

السؤال الرابع:

91.4 % نعم

8.6 % لا

---------------------------------------------------------------------------------------

السؤال الخامس:

65.7 % نعم

34.3 % لا

---------------------------------------------------------------------------------------

السؤال السادس:

72.2 % نعم

27.8 % لا

**2.2 Problem statement**

Due to the fast life style that the majority of the people are living right now we all don’t have the spare time to go to the hospital or to the doctors office for getting an opinion or consultation where it comes to a lab or x-ray report or non-critical cases that can be diagnosed without clinical examination in the hospital or practice so we’ve created the application “tabeeb online” to solve this problem and to be reachable on any hand held android device users (patients) can provide their symptoms lab reports or any other non- critical consultations registered doctors will view these cases and provide users with the suitable reply to their questions.

**2.3 Functional, Non-Functional Requirements and System Constraints:**

**2.3.1 Functional requirements:**

1. **Application registration:** both doctor and patient have to register and provide their information in order to use the application.
2. **Logging in to application:** both doctor and patient must provide a valid username and password in order to use the application properly guest don’t have to do the same thing he can just login to the application and review previous consultations and answers.
3. **Determine doctor area:** patient has to choose the area of the doctor clinic in order to shorten the travel distance if he/she wants to get checked in the doctors clinic.
4. **Selecting doctor specialty:** patient has to select the specialty of the doctor among available specialties in order to get an accurate reply to his consultation by getting the consultation answered by a professional doctor in the area of consultation.
5. **Write consultation:** patient has to write his consultation to provide the doctor with his symptoms or his question.
6. **Maintain email:** both doctor and patient can use the email to send the consultation and the reply in a private way so that no one can see it except a specific doctor and the patient.
7. **View other consultations and replays:** guest who uses the application can view the most recent consultations and their replies.
8. **Browse application contents:** all users of the application can search for specific consultation and reply or a specific doctor and specialty.
9. **View specialty notification:** doctor will get a notification to indicate that he has a consultation to answer based on his specialty.
10. **Write reply to consultation:** doctor will write a reply to the consultations that he gets and submit the reply.

**2.3.2 Non-Functional requirements and System constraints:**

1. Usability: the system must be easy to use by any user and the process of the system should be easy and understandable to any user including how the system rotates the user form one screen to another.
2. Efficiency: the system must have a fast response to user actions and commands and we ensure that by using multi threading for the application processes as well as network threads.
3. Compatibility: the system must be compatible with all android versions such that it can be downloaded and run on android devices that run different versions of android Os such as (ice cream sandwich 4.0 ,jelly bean 4.1 , kitkat 4.4).
4. Security: the system must control the I/O data processes by using validation rules and constraints on its database and entry fields.
5. Availability: the system must be available for use at anytime and anywhere.
6. Reliability: the system must be reliable and have to room for error in the process or the connections with the database.

**2.4 System Models**

**2.4.1 Use case Model**

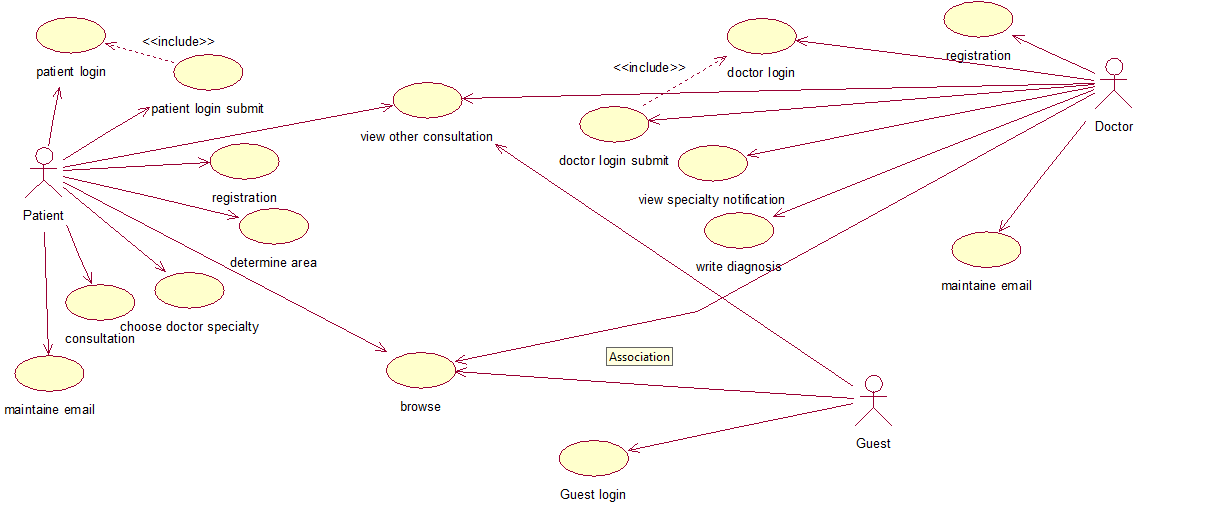
****

Figure (2) use case diagram.

**2.4.2 Domain Class Model**

****

Figure (3) class domain model.

**2.4.3 Use case Description “scenarios”:**

|  |  |
| --- | --- |
| **Use Case Name:** | Patient registration |
| **Scenario:** | Patient wants to use the application so he has to register. |
| **Triggering Event:** | Using the application for the first time. |
| **Brief Description:** | Patient has to enter some information about him in order to complete the process. |
| **Actors:** | Patient. |
| **Stakeholders:** | Users of the application. |
| **Preconditions:** |  |
| **Post conditions:** | Open the patient’s login form. |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. Choose actor type.  2. Choose to register.  4. Fill information. | 3. Open the Patient registration page.  5. Store the data in the database and proceed to the next page. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

|  |  |
| --- | --- |
| **Use Case Name:** | Patient login |
| **Scenario:** | Patient enters his user name and password to login to the app. |
| **Triggering Event:** | Patient is already registered and want to use the app. |
| **Brief Description:** | Patient has to enter his username and password to proceed to the next page. |
| **Actors:** | Patient. |
| **Stakeholders:** | Users of the application. |
| **Preconditions:** | Patient is registered. |
| **Post conditions:** | Open the patient main page. |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. Choose that he already has an account.  3. Enters username and password. | 2. Opens the patient login page.  4. Check entered data.  5. Open patient’s main page. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

|  |  |
| --- | --- |
| **Use Case Name:** | Determine area. |
| **Scenario:** | Patient wants locate the closest doctor to his area by locating the area. |
| **Triggering Event:** |  |
| **Brief Description:** | Patient will choose the area which is close to his area of residency from a list of areas. |
| **Actors:** | Patient. |
| **Stakeholders:** | Users of the application. |
| **Preconditions:** |  |
| **Post conditions:** |  |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. Choose the area from a list of areas. | 2. System will save the area to the form then to database. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

|  |  |
| --- | --- |
| **Use Case Name:** | Choose doctor specialty. |
| **Scenario:** | Patient will choose the doctors specialty in order to send him a consultation. |
| **Triggering Event:** |  |
| **Brief Description:** | Patient will choose a doctors specialty from a list of specialties. |
| **Actors:** | Patient. |
| **Stakeholders:** | Users of the application. |
| **Preconditions:** |  |
| **Post conditions:** |  |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. Choose the doctors specialty form a list of specialties. | 2. System will save the specialty to be shown in consultation. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

|  |  |
| --- | --- |
| **Use Case Name:** | Consultation. |
| **Scenario:** | Patient is going to write his consultation and submit it. |
| **Triggering Event:** |  |
| **Brief Description:** | Patient will write his consultation in a text box using virtual keyboard. |
| **Actors:** | Patient. |
| **Stakeholders:** | Users of the application. |
| **Preconditions:** |  |
| **Post conditions:** | Open the patient registration form. |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. Write consultation. | 2. Saves the consultation. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

|  |  |
| --- | --- |
| **Use Case Name:** | Maintain email. |
| **Scenario:** | Patient will write his consultation in the form of email to maintain privacy. |
| **Triggering Event:** |  |
| **Brief Description:** | Patient will write his consultation to be sent to the doctor in the form of email to maintain privacy. |
| **Actors:** | Patient. |
| **Stakeholders:** | Users of the application. |
| **Preconditions:** |  |
| **Post conditions:** |  |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. Patient will write his consultation in the specific place.  2. Patient will send his consultation. | 3. Saves the email in database.  4. Show the consultation in doctor page as an email. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

|  |  |
| --- | --- |
| **Use Case Name:** | View other consultation. |
| **Scenario:** | Users of the app will be able to see previous consultations and the provided answers to these consultations. |
| **Triggering Event:** |  |
| **Brief Description:** | Users of the app will be able to serf previous consultations and the answers provided to the consultations as well as the rate of doctors who has answered the consultation. |
| **Actors:** | Users of the app. |
| **Stakeholders:** | Users of the application. |
| **Preconditions:** |  |
| **Post conditions:** |  |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. View previous consultations. | 2. Retrieve previous consultations form the database. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

|  |  |
| --- | --- |
| **Use Case Name:** | Brows. |
| **Scenario:** | Users of the app will search app contents by pressing the brows button. |
| **Triggering Event:** |  |
| **Brief Description:** | Users of the app can search all app contents by any date by pressing the browse button. |
| **Actors:** | Users of the app. |
| **Stakeholders:** | Users of the app. |
| **Preconditions:** |  |
| **Post conditions:** |  |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. Users will enter the query in the text box. | 2. Search the database for users’ query and show results. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

|  |  |
| --- | --- |
| **Use Case Name:** | Guest login. |
| **Scenario:** | Guest will press the login button to enter the app . |
| **Triggering Event:** | Opening the app and choose to login as a guest. |
| **Brief Description:** | Guest will press the login button and enter the app to be able to see the previous consultations and there answers. |
| **Actors:** | Guest. |
| **Stakeholders:** | Users of the application. |
| **Preconditions:** |  |
| **Post conditions:** |  |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. Choose to login to the app as a guest. | 2. Open the guest page. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

|  |  |
| --- | --- |
| **Use Case Name:** | Doctor registration. |
| **Scenario:** | Doctor wants to use the application so he has to fill the registration form . |
| **Triggering Event:** | Opening the application. |
| **Brief Description:** | Doctor has to write some information about him in order to complete the process. |
| **Actors:** | Doctor. |
| **Stakeholders:** | Users of the application. |
| **Preconditions:** |  |
| **Post conditions:** | Opening the doctor’s login form. |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. Choose actor type.  3. Fill the form and submit. | 2. Open the doctor’s registration form.  4. Store the data in the database and proceed to the next page. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

|  |  |
| --- | --- |
| **Use Case Name:** | Doctor login |
| **Scenario:** | Doctor enters his username and password in order to login to the app. |
| **Triggering Event:** | Doctor already registered and wants to use the app. |
| **Brief Description:** | Doctor has to enter his username and password to proceed to the next page. |
| **Actors:** | Doctor. |
| **Stakeholders:** | Users of the application. |
| **Preconditions:** | Doctor is registered. |
| **Post conditions:** | Open the doctor main page. |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. Choose that he already has an account.  3. Doctor enters his username and password. | 2. Opens the doctor’s login page.  4. Check entered data.  5. Opens the doctor’s main page. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

|  |  |
| --- | --- |
| **Use Case Name:** | Maintain email. |
| **Scenario:** | Doctor will write answer to consultation in the form of email to maintain privacy. |
| **Triggering Event:** |  |
| **Brief Description:** | Doctor will write his answer to consultation to be sent back to the patient in the form of email to maintain privacy. |
| **Actors:** | Doctor. |
| **Stakeholders:** | Users of the application. |
| **Preconditions:** |  |
| **Post conditions:** |  |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. Doctor will write his answer to the consultation.  2. Doctor sends his reply to consultation. | 3. Show the reply in patient page as an email. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

|  |  |
| --- | --- |
| **Use Case Name:** | Write diagnosis. |
| **Scenario:** | Doctor will write his answer to the patient consultation and submit it. |
| **Triggering Event:** |  |
| **Brief Description:** | Doctor will write his answer to consultation using virtual key board. |
| **Actors:** | Doctor. |
| **Stakeholders:** | Users of the application. |
| **Preconditions:** |  |
| **Post conditions:** |  |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. Write his answer to consultation.  2. Send his answer to consultation. | 3. Show the consultation answer in the patients’ page. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

|  |  |
| --- | --- |
| **Use Case Name:** | View specialty notification. |
| **Scenario:** | Doctor will be able to see specialty notifications from a list. |
| **Triggering Event:** | Pressing the list arrow. |
| **Brief Description:** | Doctor will see what kind of notifications that he has based on his specialty. |
| **Actors:** | Doctor. |
| **Stakeholders:** | Users of the application. |
| **Preconditions:** |  |
| **Post conditions:** |  |
| **Flow of Event:** | |  |  | | --- | --- | | Actor | System | | 1. Check the notification list.  3. Doctor can select which notification he prefers to view first. | 2. Provide the notifications form the database. | |
| **Exception Conditions:** | 1. User don’t know how to open the app. |

### Activity & System Sequence Models



Figure (4) patient activity diagram.

****

Figure (5) doctor activity diagram.



Figure (6) Guest activity diagram.



Figure (7) patient registration sequence diagram.



Figure (8) patient login sequence diagram.



Figure (9) write consultation sequence diagram.



Figure (10) maintain email sequence diagram.



Figure (11) Browse.



Figure (12) doctor registration sequence diagram.



Figure (13) Doctor Login sequence diagram.



Figure (14) view other consultation sequence diagram.



Figure (15) view specialty sequence diagram.