Chapter One

Introduction

1.1. Introduction:

Organ donation is where a person donates their organs for transplant to someone who has damaged organs that need to be replaced , that may save a person's life or significantly improve their health and quality of life.

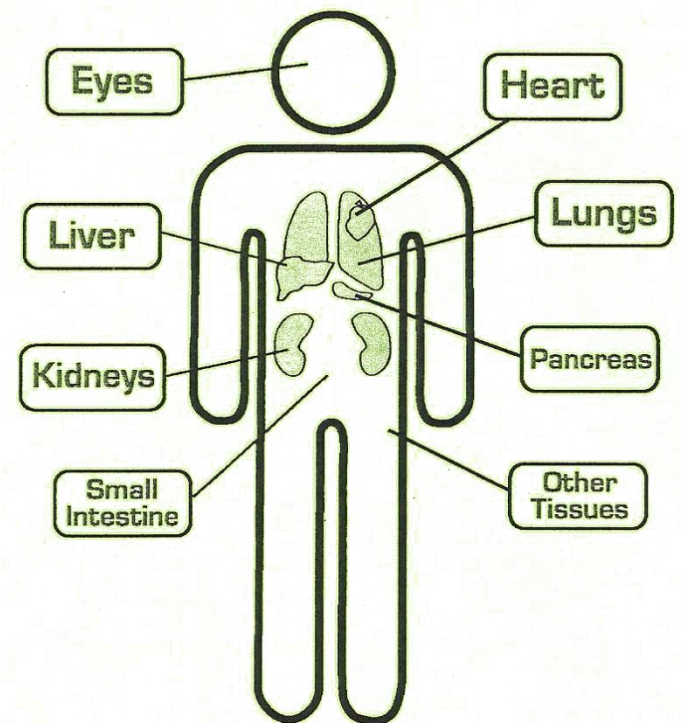
Organ transplantation has become a successful worldwide practice. However, there are large differences between countries in access to suitable transplantation and in the level of safety, quality, efficacy of donation and transplantation of human cells, tissues and organs. The ethical aspects of transplantation are at the forefront. In particular, the unmet patients' needs and the shortage of transplants lead to the temptation of trafficking in human body components for transplantation.

So that every country embarked its own policies and lows that mange organ transplantation process :

1- To prevent the practice of commercial transplantation.
2- To protect the poorest and vulnerable groups from "transplant tourism".
3- To extent the use of living organ donation in order to meet end stage organ failure patient needs.

Most people waiting for a donated organ need to have a kidney, heart, lung or liver transplant *(Figure 1.1)* . One donor can help several people as they can donate a number of organs, including:

Figure 1.1: Organs can be transplanted



- kidneys
- liver
- heart
- lungs
- small bowel
- pancreas

Tissues that can be donated include :

- the cornea (the transparent layer at the front of the eye)
- bone

skin

- heart valves
- tendons
- cartilage

There are three different ways of donating an organ *(Figure 1.2)*. These are known as:

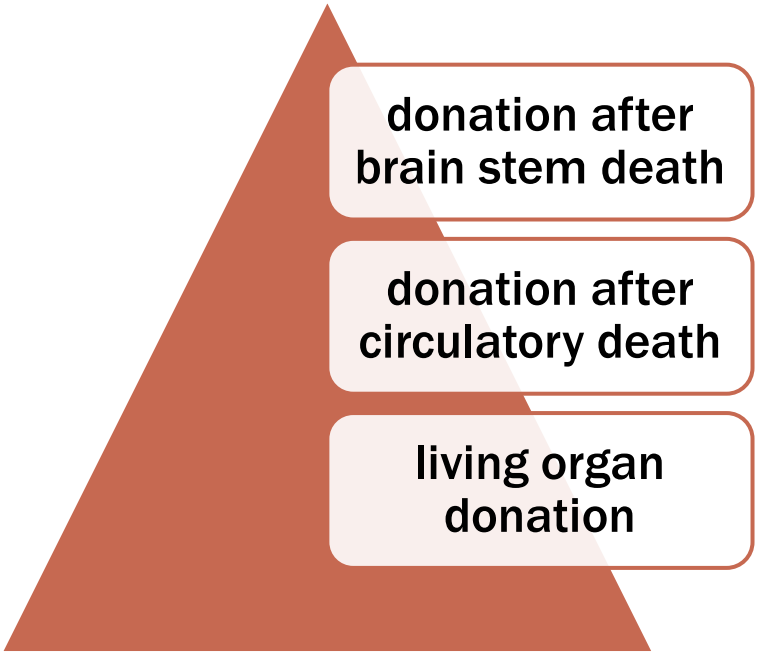


Figure 1.2 : Organ Donation types

- donation after brain stem death
- donation after circulatory death
- living organ donation

Donation after brain stem death:

Most organ donors are patients who die as a result of a brain haemorrhage, severe head injury or stroke and are on a ventilator in a hospital intensive care unit (ICU). These donors are called donation after brain stem death donors.

Death is diagnosed by brain stem tests. There are very strict standards for doing these tests and they're always carried out by two experienced doctors.

A ventilator provides oxygen, which keeps the heart beating and blood circulating after death. Organs such as hearts, lungs and livers can be donated by a DBD donor.

Donation after circulatory death :

In these cases, the organs must be removed within a few minutes of the heart stopping to prevent them being damaged by a lack of oxygenated blood.

Living organ donation:

Living organ donation usually involves one family member donating an organ to another family member or partner. The relative is usually related by blood – a parent, brother, sister, or child.

It's also now possible to be an altruistic donor. Altruistic donors are unrelated to the patient but become donors as an act of personal generosity.

Kidneys are often donated from living donors as a healthy person can lead a normal life with only one kidney.

1.2. Problem definition:

Despite advances in medicine and technology, and increased awareness of organ donation and transplantation, the gap between supply and demand continues to widen *(Figure 1.3)*.

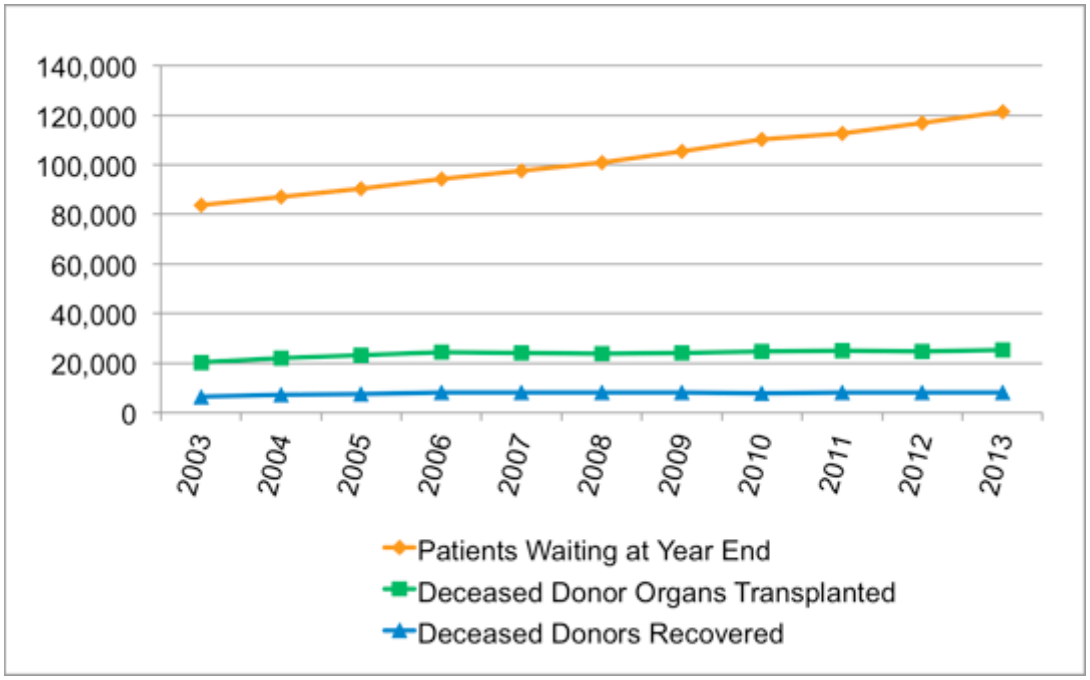


Figure 1.3: The gap between supply and demand in US

The number of people on the waiting list continues to grow, while rates of donation and transplant stagnate so that there is a need for more participants in organ donation.

This organ shortage crisis has deprived thousands of patients of a new and better quality of life and has caused a substantial increase in the cost of alternative medical care such as dialysis.

There are many reasons effect on many people refrain from donating their organs, and those reasons vary in its importance depending on its community .

There is no doubt that cultural factors play an important role, even in the most advanced societies , So it is the society institutions must work to spread the culture of organ donation.

1.3. Project Goals and Objectives:

There is a big influence of technique on human life. especially the Internet is becoming more and more important for nearly everybody as it is one of the newest and most forward-looking media.

the Internet changed our life enormously in a positive way, there is no doubt about that. There are many advantages of the Internet that show you the importance of this new medium.

People use this kind of medium to get information about all kinds topics.

The main aim of this project is initial dynamic website concerning with organ transplant information , and organ donation benefits , polices and laws , because the promoting donation and organ transplantation in a multicultural environment represents one of the major challenges facing the transplant community.

Different countries cannot tackle donor shortage in a standardized way, given the different attitudes and the cultural and moral Whatever the approach, however, this should involve a team of healthcare workers who are sensitive to the values and the traditions of each individual group in addition to a coordinated effort to clear any misconceptions about organ donation, improve public education and awareness and promote Respect for cultural diversity and a better understanding of the cultural influences are means of building a stronger support for transplantation and ensuring the success of organ donation campaigns.

The new system must provide the following:

- Religion view about organ donation.
- General medical information about brain stroke.
- Definition of the importance of organ donation and urged people for donate.
- Organ donation types.
- Organ transplant laws and restriction.
- Sanctions of organ trafficking.
- Donors registration data and their contact information's.
- Patients registration data with medical report and their contact information's.

- Pass both donors and patients data to governmental institutions which responsible for organ donations regulating.
- List of institutions, associations and specialized hospitals concerning with organ transplant.
- How to be donor step by step.
- Web forum includes life discussion about organ donation.
- Highlight the success stories of organ donation operations.

1.4. Solution:

Create and publish a dynamic website to spread the culture of organ donation in the Arabian communities specially in Saudi Arabia .

This website contains :

- some necessary information that interest both donor and patient.
- Registration form for donor and patient and their contact information to pass it the governmental institutions which act the medical follow-up process , extraction and sending donation cards to donors, study the patients cases to determine priorities.
- Web forum or discussions board because it become one of the most popular ways of engaging and interacting with others online.

To implement this system we need to:

- Collect the material subjects from trusted websites or other registered documents.
- Establish the website.
- Establish the forum.
- Use web-programming languages (such as: CSS, JAVA, PHP).
- Built the database by database server such as MySQL.
- Setup other helpful application such as Dreamweaver , Photoshop.

Chapter two

Web technology

2.1-Introduction:

This section will provide information about web technologies which include markup languages, The two most popular are (HTML , XML , XHTML)

Programming interfaces and languages .

To take full advantages of these technologies, you need to know how to use them .

2.2 -markup languages :

HTML (Hypertext Markup Language) is the set of markup symbols or codes inserted in a file intended for display on a World Wide Web browser page .

Each page contains a series of connections to other pages called hyperlinks .

Every web page you see on the Internet is written using one version of HTML code or another .

Advantages of HTML:

- ✓ It is plain text so it is easy to edit and only requires to text editor .
- ✓ It is free not need buy any software .
- ✓ Fast to download and easy to learn .
- ✓ It is now standard with wide use .
- ✓ HTML can be used to represent any kind of data .

Drawback of HTML :

- ☒ All pages must edit individually which waste a lot of time which mean long code to create simple page .
- ☒ Usually not quite as clean and not easy to read.
- ☒ It is not useful when we need a dynamic pages

XML ()

XML is not HTML . XML is SGML with some differences .

" It is also a 'metalanguage' because it can be used to develop other markup languages, and to include 'tags' (pointers) which provide additional information about data held in a document "[..].

Advantages of XML:

- ✓ we can write our own markup language with set of tags enhancements.
- ✓ XML is not restricted or limited .
- ✓ XML allow us to develop our own tag sets to meet our needs without forcing the developers to settle for a generic tag set that is too generic to be useful.
- ✓ The real power of XML is not only writing your own tags , but allow you to define all sorts of tags with all sorts of rules .

✓

Drawback of XML :

- ☒ XML is more difficult and prices than HTML
- ☒ Is not supported by many browsers and lack the end users applications .
- ☒ XML does not support many types of data : XML provides no specific notion of “integer”, “string”, “boolean”, “date”, and so on.

2.3 - XHTML (Extensible Hyper Text Markup Language)

Benefits Of XHTML :

- ✓ Many developers seen it as future of web pages .
- ✓ Using XHTML now instead of HTML makes any future conversion of the website easier.

Drawback of XHML :

- ☒ XHTML is not supported by many web browsers such as (Microsoft Internet Explorer) .
- ☒ We must to use “application/xhtml+xml” media type to tell browser to serve the content .

2.4 -ASP.NET :

Its unified Web development model that includes the services necessary for you to build enterprise-class Web applications with a minimum of coding.

Benefits of ASP.NET :

- ✓ Reduce the code to build large application .
- ✓ Your application with ASP.NET is more secured .
- ✓ ASP.NET pages are easy to write and maintain because the source code and HTML are together.

Drawback of ASP.NET :

- ☒ slower response times and increasing the bandwidth demands of the server.
- ☒ Big challenge with integration testing so the testing is not supported enough .

2.5 -PHP :

Benefits of PHP :

- ✓ The biggest benefit of PHP , its free software.
- ✓ Easy to use and learning . we don't need to write classes like java .
- ✓ Open source which make it easy to modify .

Drawback of PHP :

- ☒ PHP is not strongly typed and not secured enough .
- ☒ PHP uses curly braces which make it difficult to write .

2.6 - What is java script :

" JavaScript is a programming language used to make web pages interactive." [..]

Benefits of java script :

- ✓ Java script is executed on the client side
  This means that the code is executed on the user's processor instead which saving bandwidth of server.
- ✓ java script is easy to use and easy to learn .

Drawback of java script :

- ☒ Security Issues .
- ☒ The primary issue of using JavaScript is search engines.
- ☒ Make the site load slower .

2.7 - MySQL :

It is the world’s most popular open source database .

Benefits of MySQL :

- ✓ Easy to use and learn with high performance .
- ✓ MySQL is free software and available to free download from MySQL Web site.
- ✓ MySQL can handle almost any amount of data .
- ✓ Open source database

Drawback of java MySQL :

- ☒ MySQL tends to be somewhat less reliable than its peers.
- ☒ MySQL isn’t designed to do everything (nor should it be). The database isn’t fully SQL-compliant, and tends to be limited in areas including data warehousing, fault tolerance .

2.8 - Web technology in our site :

We will use HTML to create web pages because it has a lot of benefits such as :

- ✓ It is plain text so it is easy to edit and only requires to text editor .
- ✓ It is free not need buy any software .
- ✓ Fast to download and easy to learn .
- ✓ It is now standard with wide use .
- ✓ HTML can be used to represent any kind of data .

We will create database by MySQL for many reasons :

- ✓ Easy to use and learn with high performance .
- ✓ MySQL is free software and available to free download from MySQL Web site.
- ✓ MySQL can handle almost any amount of data .
- ✓ Open source database

Using PHP with MySQL has become common enough that the MySQL interface is now part of core PHP.

PHP build to allow access. Which can access most any SQL database. It can both read and write information in the database . PHP has many benefits to use :

- ✓ The biggest benefit of PHP , its free software.
- ✓ Easy to use and learning . we don't need to write classes like java .
- ✓ Open source which make it easy to modify .

The best choice to create dynamic web pages is working with java script which has many advantages :

- ✓ Java script is executed on the client side

This means that the code is executed on the user's processor instead which saving bandwidth of server.

- ✓ java script is easy to use and easy to learn .

Chapter Three

Literature Review

3.1-Introduction:

We organized in chapter1 a general image of the desired system, presenting the problem of the project , also proposing solutions to the problem, determined the goals and objectives.

In this chapter we will present a literally review of the previous projects and studies by using the university library, or by using the global search engines such as Google, yahoo..etc., in order to obtain a previous efforts that has been exerted in this field, or any study which involve this field, also we will discuss the similarities and differences , as it will be shown in the project..

3.2 Similar existing websites & compare with all applications :

The case of organ donation is one of the critical issues in addressing, because its relate indirect with trade in organs operations which are religiously forbidden and criminal legal in all norms , laws and religions.

For this reason, states and governments are often address this thorny issue, Governments enact laws and set standards and controls that ensure the conduct of those operations transparently not inconsistent with ethics and religion.

Government effort focuses more on the process of organs transition after stroke, so some countries have decided to issue a donor card

(Figure 2.1) who wants to donate his organs after death, and the card must be accompanist to donor wherever he went, so that if his clock came and this card founded with him , is considered that the adoption of him to donate his organs or some as stipulated in the donation document .

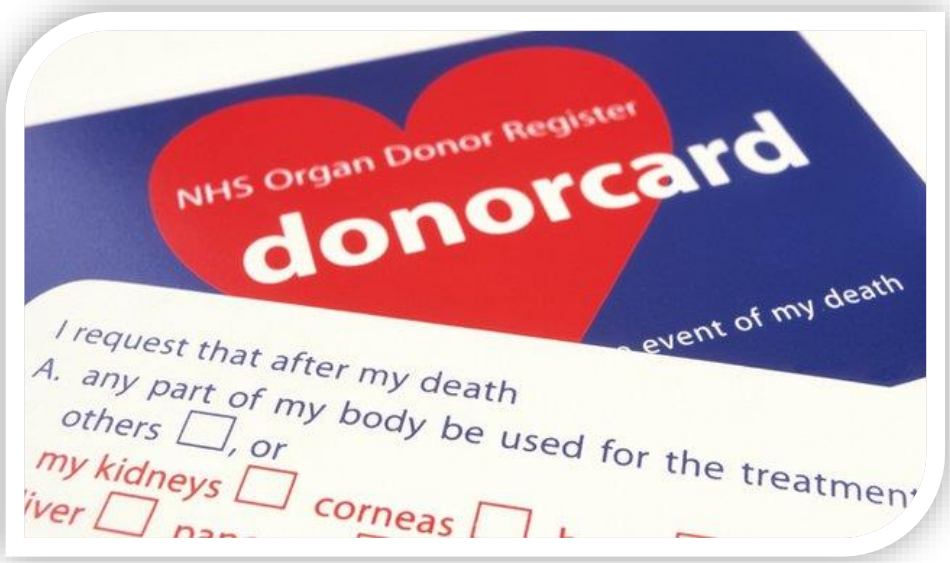


Figure 2.1 : Donor Card

To facilitate recording donors data procedures , many sites established to record donors data electronically, and send them a donor card by mail.

Some countries get some advantages for donor card carrier to encourage the donation process.

In some European countries, organ donation after death is the default matter , and who does not want he must be to sign un donor form.

3.2.1 Saudi Center Organ-Transplantation:

http://www.saudidonor.com/

In the kingdom of Saudi Arabia, there are more than 15,000 people are currently in need of organ transplants. And each year, thousands of people die while waiting for a transplant because no suitable donor can be found for them.

So that they established Saudi Center Organ-Transplantation to spread the culture of organ donation in the SA, and to help donors to communicate with them through the website by registering and request the donor card, besides the site contain a variety of information that interest the donor , the patient and the doctors also, but the site missed to direct communication mechanism between the donors and patients.

3.2.2 Kuwait Transplant Society:

http://transplant.org.kw /

Figure 2.3: Kuwait Society for Organ Transplantation website

Kuwait Society for Organ Transplantation established in 1984 to:

- Educate citizens about the importance of organ transplants for patients who need them.

- Urging citizens to donate your organs and the commandment to treat patients in accordance with the provisions of the laws and regulations in force in the country, highlighting the opinion of religion and the law in this matter.

- Work to provide for patients and health and social care and people who donate their organs to treat patients.

- Encourage research and scientific studies that aim to improve and develop organ transplant methods.

- Highlighting the role of Kuwait in the field of organ transplantation, and to maintain the pride of place it has made in this area by seeking to develop and improve the means of organ transplant, and keep up with all the new and novelty in this area.

Figure 2.4: Kuwait Society for Organ Transplantation e-registration form.

The Kuwait Transplant Society website also has an online donor registration form but doesn't include any way to communicate directly with other donor or patient.

3.3 Differences between the similar websites:

The following table showing the main differences between the similar existing websites previously mentioned and our website to be established (The giving) , The comparison address the functional aspects of the websites without addressing to the organizations official aspects.

Item	Saudi Center	Kuwait Society	Jordan Society	The Giving
Showing the legal aspects	×	✓	✓	✓
Showing religious & ethical aspects	✓	✓	✓	✓
Showing medical aspects	×	✓	✓	✓
Donor application form	✓	✓	✓	✓
Site registration	✓	×	×	✓
Patient organ request form	×	×	×	✓
Sending donor and patient data to governmental organization	✓	×	×	✓
Publish patients organ request data	×	×	×	✓
Built in discussion forum	×	×	×	✓
Highlighting success stories	×	×	×	✓
Arabic & English interface	✓	✓	×	×

Table 2.1 : Comparison between the similar websites

Chapter Four

Life Cycle

4.1: introduction

What is a Lifecycle Model?

"Definition. A (software/system) lifecycle models a description of the sequence of activities carried out in an SE project, and the relative order of these activities."[1]

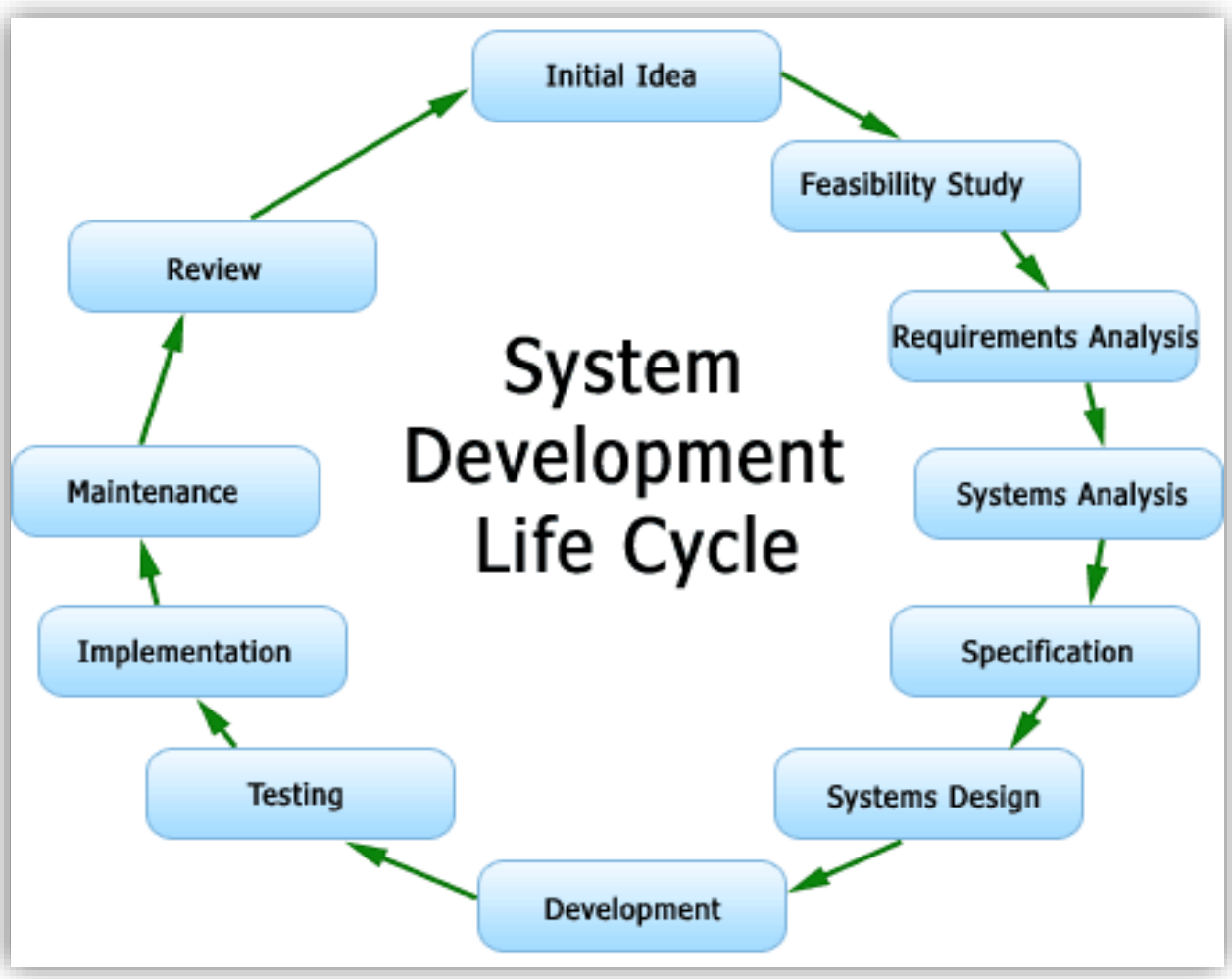


Figure 4.1 system development life cycle

4.1.1: Waterfall Model

Definition

"The Waterfall model is a conventional, linear, sequentional or traditional waterfall software life cycle model. It is a sequential development approach, in which development is seen as flowing steadily downwards through the phases of requirements analysis, design, implementation, testing (validation), integration, and maintenance."[..]

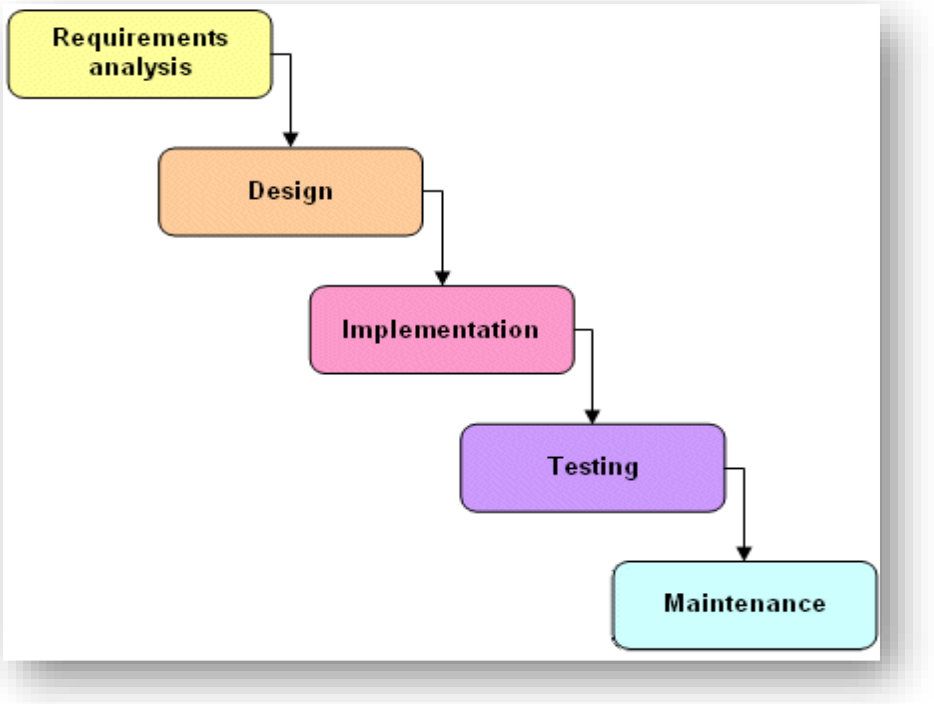


Figure 4.2 waterfall model

Advantages of waterfall model :

- ✓ Simple and easy to use it.
- ✓ It is suitable for small projects .
- ✓ We can call it the base of the models.

Disadvantages of waterfall model :

- ☒ The worst model for large projects .
- ☒ The Biggest disadvantage is not meet the new customer requirements .

☒ Difficult to correct mistakes on each step .

4.1.2: Incremental Model

Definition

"The incremental build model is a method of software development where the model is designed, implemented and tested incrementally (a little more is added each time) until the product is finished. It involves both development and maintenance. The product is defined as finished when it satisfies all of its requirements. This model combines the elements of the waterfall model with the iterative philosophy of prototyping. [..]

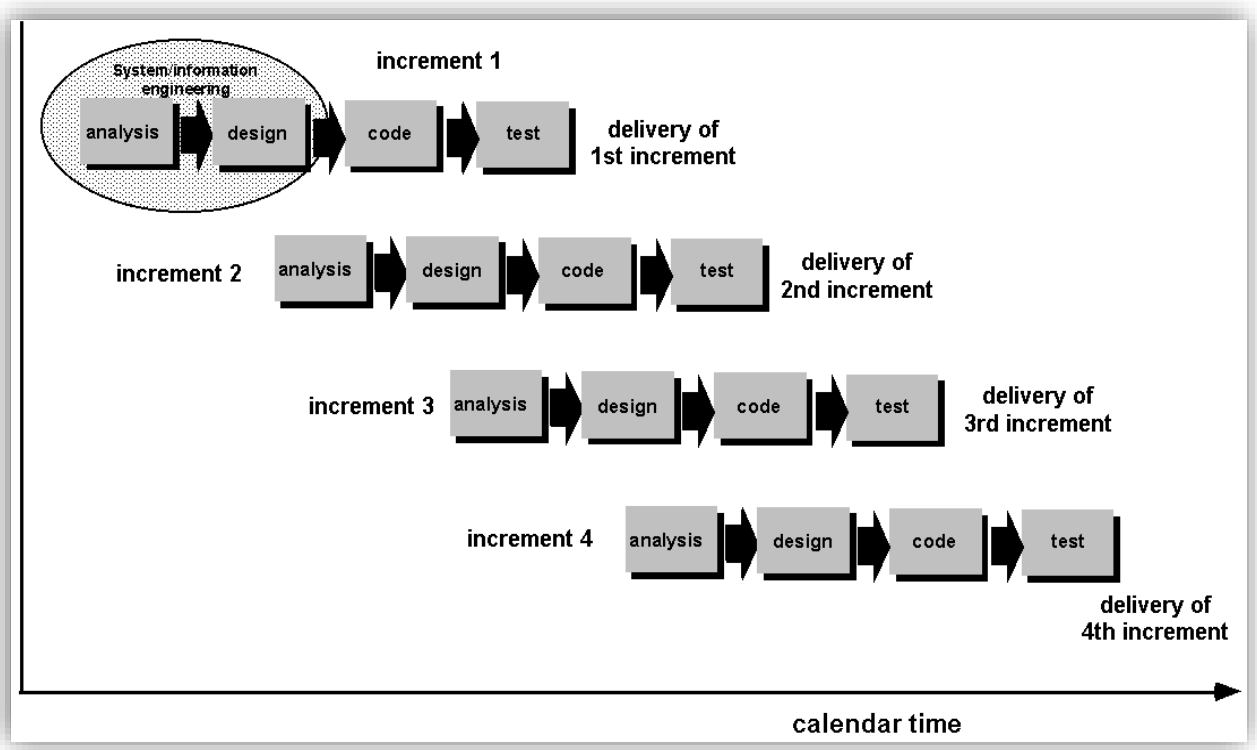


Figure 4.3 Incremental Model

Advantages of Incremental Model:

- ✓ Can generate the software during the life cycle
- ✓ Each iteration is an easy to manage because the pieces of it are identified during iteration.

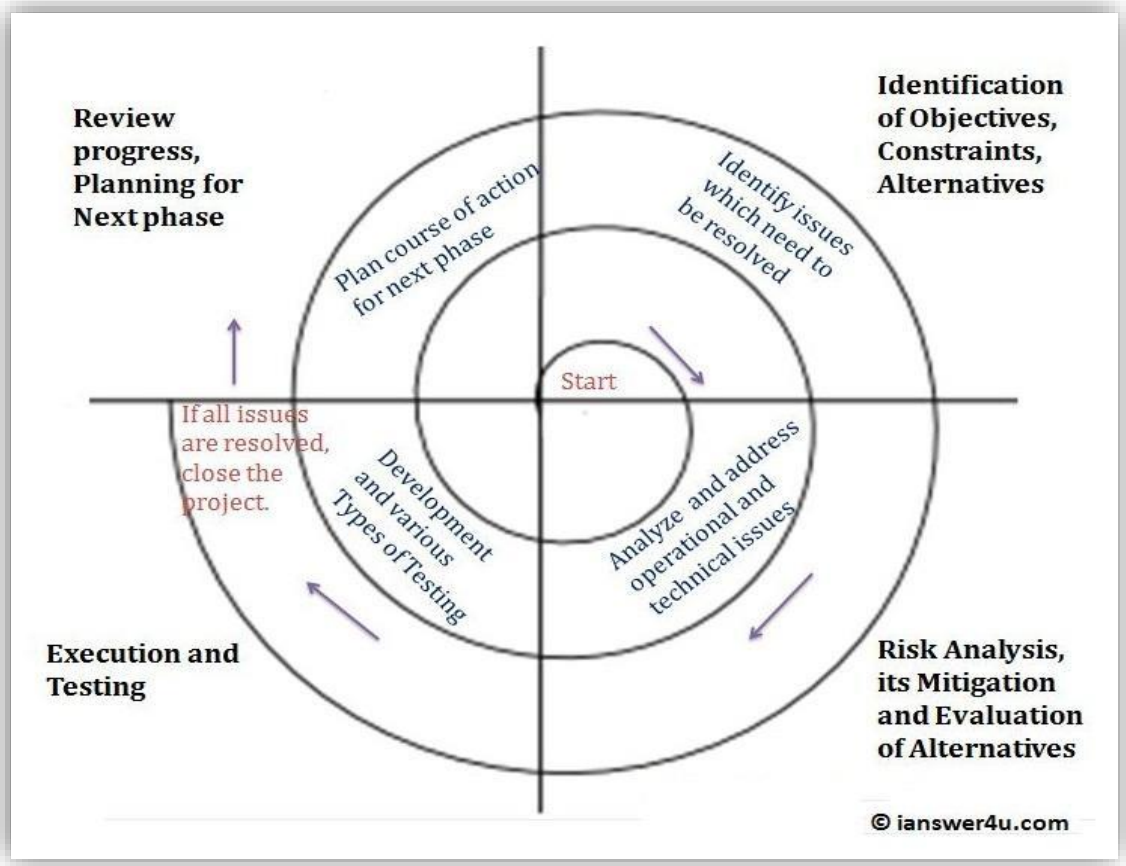
Disadvantages of Incremental Model:

- ☒ not all requirements are gathered up front for the entire software life cycle.
- ☒ The phases of processing are Separated

4.1.3: Spiral Model "

Definition

"This phase starts with gathering the business requirements in the baseline spiral. In the subsequent spirals as the product matures, identification of system requirements, subsystem requirements and unit requirements are all done in this phase. This also includes understanding the system requirements by continuous communication between the customer and the system analyst. At the end of the spiral the product is deployed in the identified market."[..]



Advantages of spiral model :

- ✓ Good choice for large project .
- ✓ Additional Functionality and new customer requirements can be added at any date and easy way .
- ✓ Can produced software on early stage of spiral model .

disadvantages of spiral model :

- ☒ Costly model .
- ☒ Not good for small projects .

4.1.4: Prototyping Model

Definition

"Prototyping Model Software prototyping is the development approach of activities during software development, the creation of prototypes, i.e., incomplete versions of the software program being developed."[..]

Advantages of Prototyping model :

- ✓ Detected errors faster and easier than waterfall model .
- ✓ Fast feedback can help to solve problem and meet the requirements .
- ✓ Reduced time and costs .
- ✓ It is the best model for project which have many interactions with users .
- ✓ Developers saying is prototyping is optimal.

Disadvantages of Prototyping model :

- ☒ Building the system then repairing it .
- ☒ No limitation on planning .

choosing a software development Life cycle :

Waterfall model is the best choice for small projects such as our project .

4.2 : conclusion

On this chapter we have to determine the time and cost of each activity process .

Chapter Five

System analysis and design

5.1 Project Scope:

The project is a public dynamic website cares about the organ donation and organ transplant cases, the main goals of the project is how to persuade people with the importance of donation and how to make the contact process between patients and donors more easier , So the scope of the project includes various categories of users such as :

- Patients : Who need an emergency surgery to transplant a part or a full human organ to save their life or to make it better.
- Donors : Those who have the ability and the desire to help other patients ,either in life or after death.
- Governmental institutions: which act the medical follow-up process , extraction and sending donation cards to donors, study the patients cases to determine priorities.
- General users : Anyone who wants to take advantage of medical, legal and religious information published on the site..

3.2 Interview:

Interviews considered as an essential method for information gathering , it requires owning a private personal skills, ability to communicate ,control, ask questions as much attention to listen to the user and to remain patient.

Most interviews conducted with the main users of the system and may be conducted with experts in the same field if the user does not own the sufficient knowledge.

There users can express their requirements with a clear vocabulary and understandable ideas. It may also exceed the budget and the objectives of the project , that may sometimes be unattainable.

1. What is the types of organ donation?

- Donation after death.
- Donation with fully part during Life (kidney).
- Donation a part of organ during Life (liver).

What organs can be transplanted?

2. Organs that can be transplanted are the heart, kidneys, liver, lungs, pancreas, intestine, and thymus. Tissues include bones, tendons (both referred to as musculoskeletal grafts), cornea, skin, heart valves, nerves and veins

What is the most needed organ in SA?

3. The kidneys are the most commonly transplanted organs.

What is the most succeeded organ transplant surgery in SA?

4. Kidneys transplant.

How patients can find and get in needed organs?

5. Very few patients can find and get in needed organs.

Does all patients find in needed organs easily?

6. Not at all , It very arduous process.

What is the legal restrictions for organ donation?

7. The Saudi Center for Organ Transplantation (SCOT) is the organization responsible for the national coordination of donation and transplantation activities and it is financed by public funds. In addition to the national organization, there are coordinating institutions at provincial and local level. SCOT is headed by a national transplantation manager.

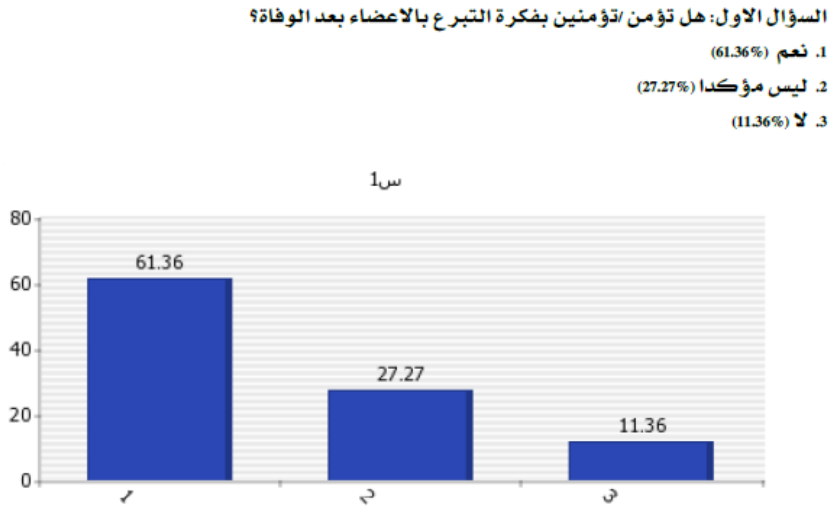
	The organization is responsible for coordinating the promotion of organ donation, the setting up of protocols, guidelines and recommendations, managing waiting lists, coordinating organ procurement, allocation and transplant follow-up registries
8.	How many people that agree on donating their organs after death in SA? We can't get a accurate number , but all answers agreed that are very few.
9.	What is the governmental efforts for spreading the organ donation culture in SA? No organization and sustained efforts to support the deployment of organ donation culture in Saudi Arabia.
10.	What is the role that Internet plays in announcing for the importance of organ donation now in SA? Although the importance of internet , it does not take advantage of the optimal exploitation in advertising for the importance of organ donation.
11.	What are the available communication channels between patients and donors. Usually the donor and the patient are relatives.

Table 3.1 : Interview questions

5.4 Questionnaire:

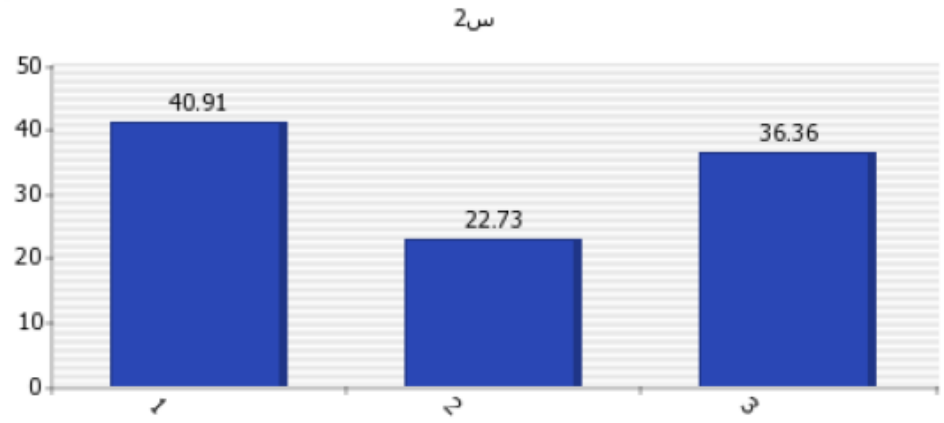
Questionnaires are considered as an effective method for gathering information when dealing with several categories of users at the same time, questionnaires is used usually along with interviews it can't be considered as an alternative , in general what we get from questionnaires are lower than we get from the interviews.

The following questionnaire was prepared and published on Google website to contribute gathering important information about the system.



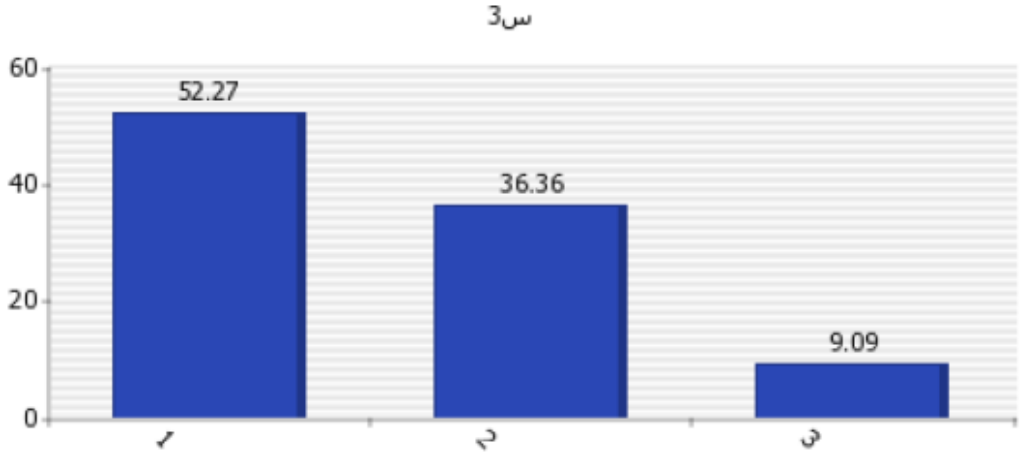
السؤال الثاني: هل تؤمن / تؤمنين بفكرة التبرع بالاعضاء قبل الوفاة؟

1. **نعم** (40.91%)
2. **ليس مؤكدا** (22.73%)
3. **لا** (36.36%)



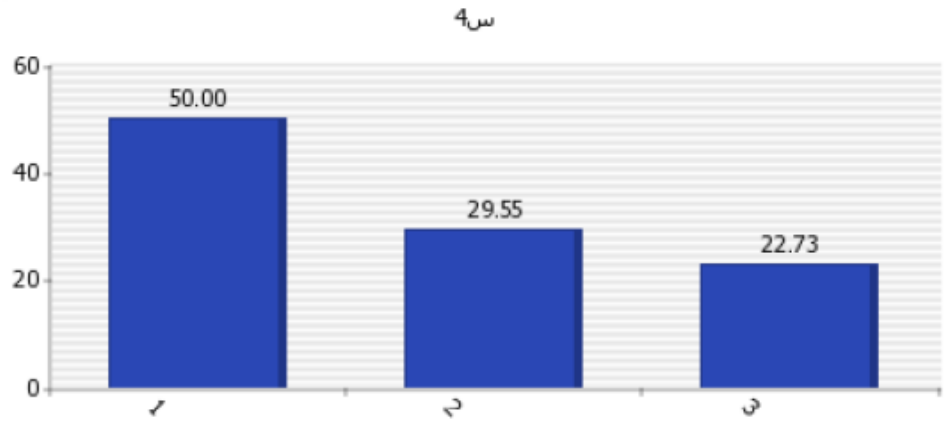
السؤال الثالث: هل تؤمن / تؤمنين بفكرة التبرع بجزء من عضو اثناء الحياة ؟

1. **نعم** (52.27%)
2. **ليس مؤكدا** (36.36%)
3. **لا** (9.09%)



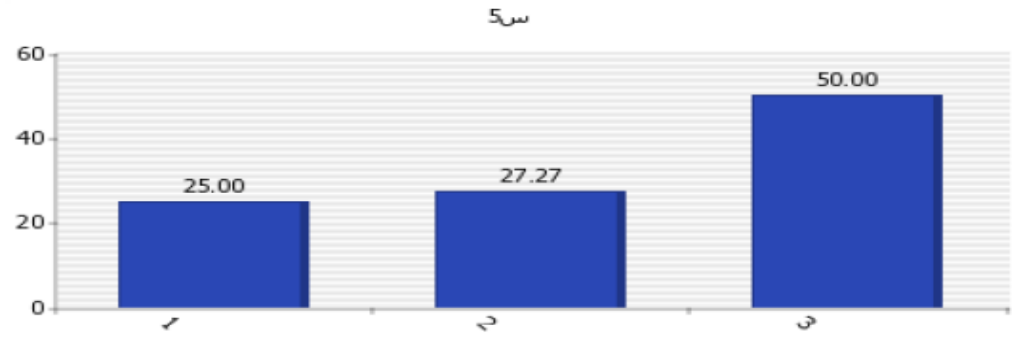
السؤال الرابع: هل لديك الوعي الديني عن التبرع بالاعضاء؟

1. **نعم** (50.00%)
2. **ليس مؤكدا** (29.55%)
3. **لا** (22.73%)



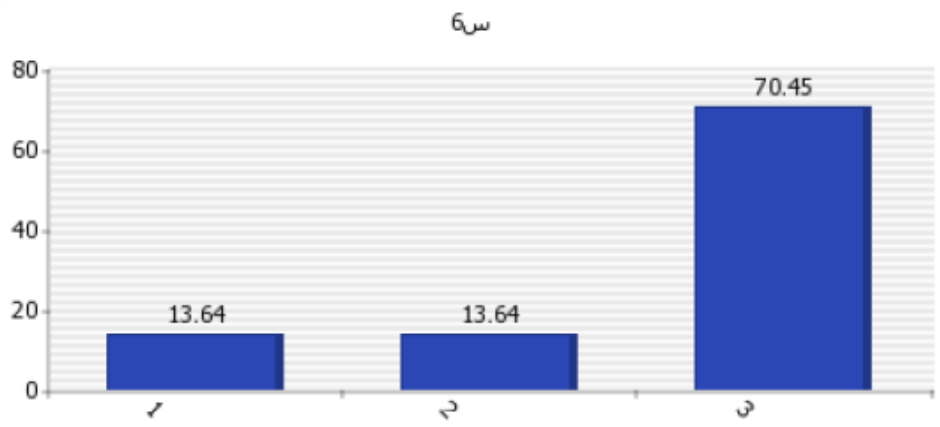
السؤال الخامس: هل لديك الوعي بالقوانين و القيود المفروضة على التبرع بالاعضاء؟

1. **نعم** (25.00%)
2. **ليس مؤكدا** (27.27%)
3. **لا** (50.00%)



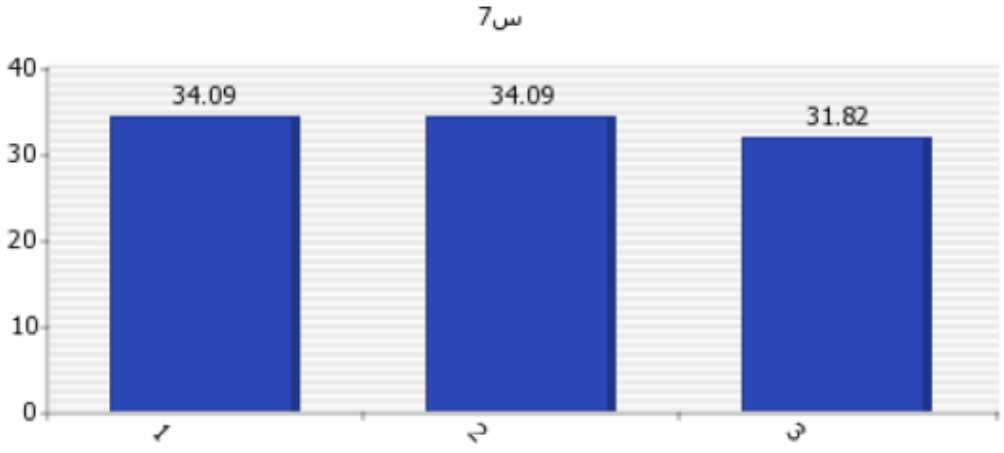
السؤال السادس: هل الحملات الانتخابية التوعوية عن التبرع بالاعضاء كافية و مرضية؟

1. **نعم** (13.64%)
2. **ليس مؤكدا** (13.64%)
3. **لا** (70.45%)



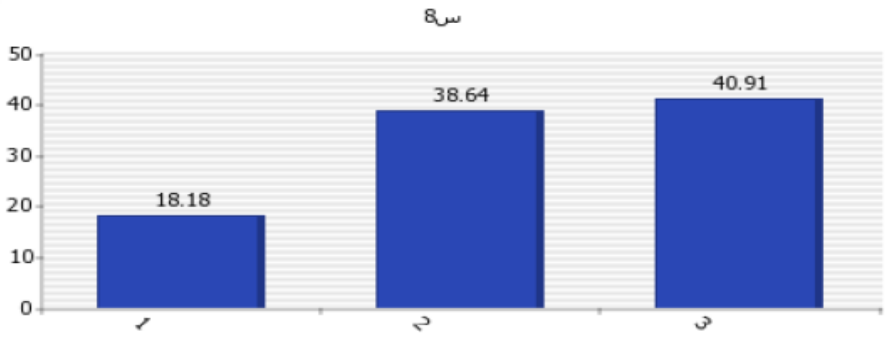
السؤال السابع: هل لديك المعرفة الكافية عن الموت الدماغي ؟

1. **نعم** (34.09%)
2. **ليس مؤكدا** (34.09%)
3. **لا** (31.82%)



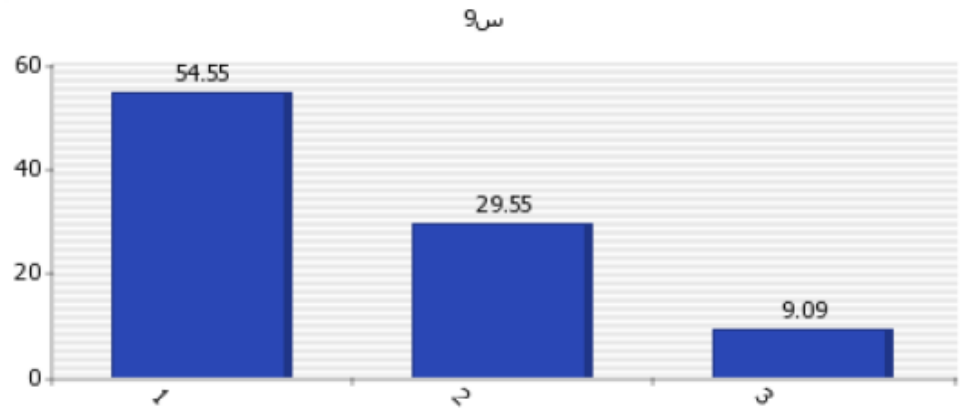
السؤال الثامن: هل سوف تلجاء/تلجأين للانترنت للاستخراج بطاقة لتبرع بالاعضاء؟

1. **نعم** (18.18%)
2. **ليس مؤكدا** (38.64%)
3. **لا** (40.91%)



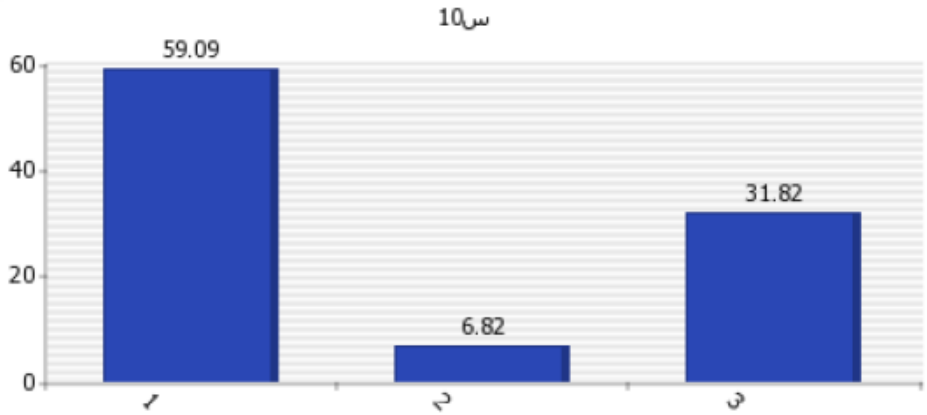
السؤال التاسع: هل سوف تلجاء/تلجأين للانترنت للمعرفة عن التبرع بالاعضاء؟

1. **نعم** (54.55%)
2. **ليس مؤكدا** (29.55%)
3. **لا** (9.09%)



السؤال العاشر: هل تعرف/ تعرفين قصص ناجحة عن التبرع بالاعضاء؟

1. **نعم** (59.09%)
2. **ليس مؤكدا** (6.82%)
3. **لا** (31.82%)



3.4 User Characteristics:

Giving System will be used by three categories of user:

Administrator: A Member with the highest privilege that can manage all Giving system services.

He /She can be From The Organ Procurement Organizations are candidates for the job.

Users: they have accounts and can use giving system services with different privileges, They will be patients or donors.

Visitors: they do not have an account, they can use limited giving system services. It can be any one .

Assuming that users have the basic skills to deal with applications on smart phones.

3.5 Specific Requirements:

The purpose of specifying requirements is to determine precisely the services expected from the system and the restrictions which the system should be governed.

It can be functional requirements or non functional requirements, the functional requirements that are related to a conduct must be done by the system, or information must be contained, while non functional requirements that are related to behavioral characteristics that must be characterized by the system , as the performance activity , and ease of use , this kind of requirements affect on the other functional requirements indirectly. However, the principal effect is in design stage where decisions concerning the user interface, hardware and software architecture.

5.1 Requirement analysis

5.1.1 Functional requirements:-

1. Register

- The system should allow donor to registration
- The system should allow patient to registration
- The system should allow donor /patient to enter his data
- The system should store data in database

2. Log in

- The system should allow admin to enter ID and password to log in to system
- The system should allow donor to enter ID and password to log in to system
- The system should allow patient to enter ID and password to log in to system
- The system should open control page for each user.

3. Extract donor card

- The system should allow donor to registration.
- The system should allow donor to print donor card

4. Donate organ

- The system should allow admin to add result test of donor
- The system should allow donor to donate organ

Manage patient profile

- The system should allow admin to add result test of patient.
- The system should allow admin to view information of patient.
- The system should allow admin to update data of patient.
- The system should allow admin to delete patient.
- The system should allow patient to view his information.
- The system should allow patient to update his data.
- The system should allow patient to delete his account.

5. Manage Donor profile

- The system should allow admin to add result test of donor.
- The system should allow admin to view information of donor.
- The system should allow admin to update data of donor.
- The system should allow admin to delete donor.
- The system should allow donor to view his information.
- The system should allow donor to update his data.
- The system should allow donor to delete his account

6. Manage organ center

- The system should allow admin to add new center.
- The system should allow admin to update data of center.
- The system should allow admin to view list of center.
- The system should allow admin to delete center.

7. Transport organs
    - The system should allow admin to transport organ from one center to another.
    - The system should update database.
8. Matching organs& patient
    - The system should allow admin to view available organ list
    - The system should allow admin to view available patient list.
    - The system should allow admin to matching between organ and patient.

5.1.2 Non-Functional requirements :-

Security :

- Users data security must be garneted such as Username and Password.
- Allow system administrator to access and modify all the data within the system.

Ease of use:

- Attention to simply the user interface design and create a graphical interface control panel for each user.
- Attention to aesthetics design.
- The site must be compatible with the most popular browsers such as Google Chrome, Internet Explorer, Mozilla Firefox, Opera.
- The system must support the Arabic language.

Speed:

- The effective design of the database and the application should enhance the system performance.
- The server must be speed enough to serve the expected number of users.
- Avoid excessive use of graphical effects and macromedia flash shows.

Credibility and effectiveness:

- Allow the administrator to backup and restore the wholly project and database.
- The published information must be trusted and documented.

5.2 Introduction:

This section is going to show the solution of the problems by using use case, class and sequence diagrams.

Use case diagram

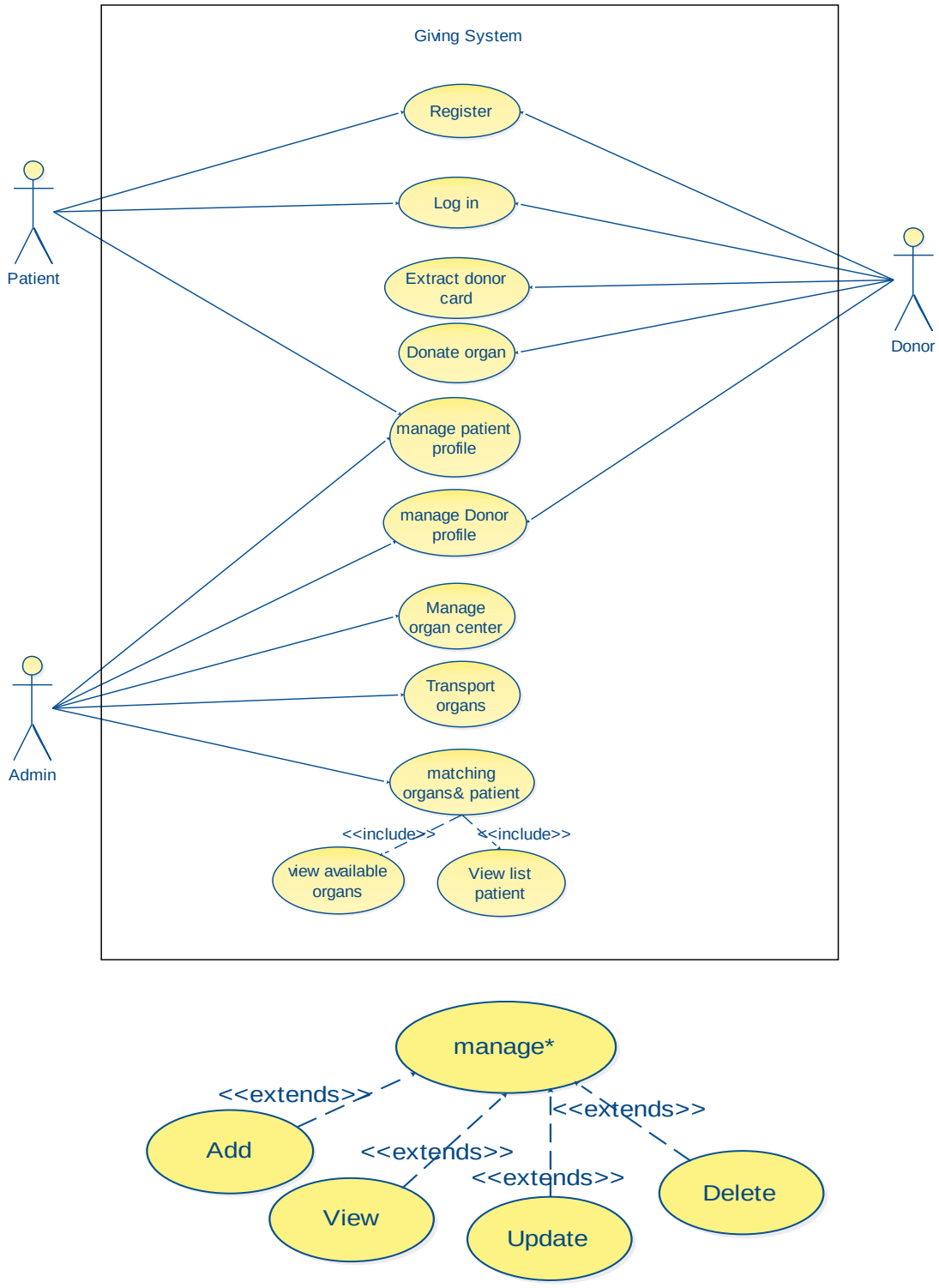


Figure 5.1 use case

5.2.1.Use case description :

Use Case ID :	1
Use Case Name :	Register
Actors :	Donor , patient
Description :	It allow user to create an account in system
Type	Primary
Flow	
Actor action	**System action**
1.The user select registration link	
	2.the system open registration form
3.The user enter his data	
4. The user click register button	
	5.The system check data
	6. The system store data in database
	7. The system show confirmation message

Use Case ID :	2
Use Case Name :	Log in
Actors :	Donor , patient, admin
Description :	It allow user to enter to the system
Type	Primary

Flow	
Actor action	**System action**
1.The user enter ID, and password	
	2.the system check data from database
	3. The system open user control page.

		Add : section
	Actor action	System response
	1- The user click add button.	2-The system displays add from.
	3- The user fills the from .	4-The system check information then validate it and finally stores information.
		5-The system display confirmation message.
Delete : section		
	Actor action	System response
	1- The user click delete button.	2-The system shows delete confirmation message for the user.
	3- The user confirmation deletion message request.	4-The system remove the user from the system
Update : section		

	Actor action	System response
	1- The user click update button.	2-The system shows update form.
	3- The user change data.	4-The system confirmation message.
View : section		
	Actor action	System response
	1- The user click view button.	2-The system shows view form.
	3- The user enter id.	4-The system show information.

Use Case ID :	3
Use Case Name :	Manage profile
Actors :	Admin , patient ,donor
Description :	It allow user to manage his information(add, delete, update ,view)
Type	Primary
Flow	
Actor action	**System action**
1.The user click manage button	
	2.the system open form
3.The user select add , delete, or update his data	

Use Case ID :	4
Use Case Name :	Manage organ center
Actors :	Admin
Description :	It allow user to manage organ center (add, delete, update ,view)
Type	Primary
Flow	
Actor action	**System action**
1.The user click manage button	
	2.the system open form
3.The user select add , delete, view, or update his data	

Add : section		
	Actor action	System response
	1- The user click add button.	2-The system displays add from.
	3- The user fills the from .	4-The system check information then validate it and finally stores information.
		5-The system display confirmation message.
Delete : section		
	Actor action	System response
	1- The user click delete button.	2-The system shows delete confirmation message for the user.
	3- The user confirmation deletion message request.	4-The system remove the center from the system
Update : section		
	Actor action	System response
	1- The user click update button.	2-The system shows update form.
	3- The user change data.	4-The system confirmation message.
View : section		

Actor action	System response
1- The user click view button.	2-The system shows view form.
3- The user enter data of search.	4-The system show list of organ center.

Use Case ID :	5
Use Case Name :	Extract donor card
Actors :	Donor
Description :	It allow user to extract donor card
Type	Primary
Flow	
Actor action	**System action**
1.The user select donor link	
	2.the system open donor form
3.The user select extract donor card	
	4. the system show extract donor card form
4.The user enter donor data	
5. The user click extract button	
	6.The system check data
	7. The system store data in database
	8. The system show donor card
9. The user print card	

Use Case ID :	6
Use Case Name :	Donate organ
Actors :	Donor
Description :	It allow user to enter donate organ data.
Type	Primary
Flow	
Actor action	**System action**
1.The user select donor link	
	2.the system open donor form
3.The user select donate organ	
	4. the system show donate form
4.The user enter data and send it	
	5.The system check data
	6. The system store data in database
	7. The system show confirmation message.

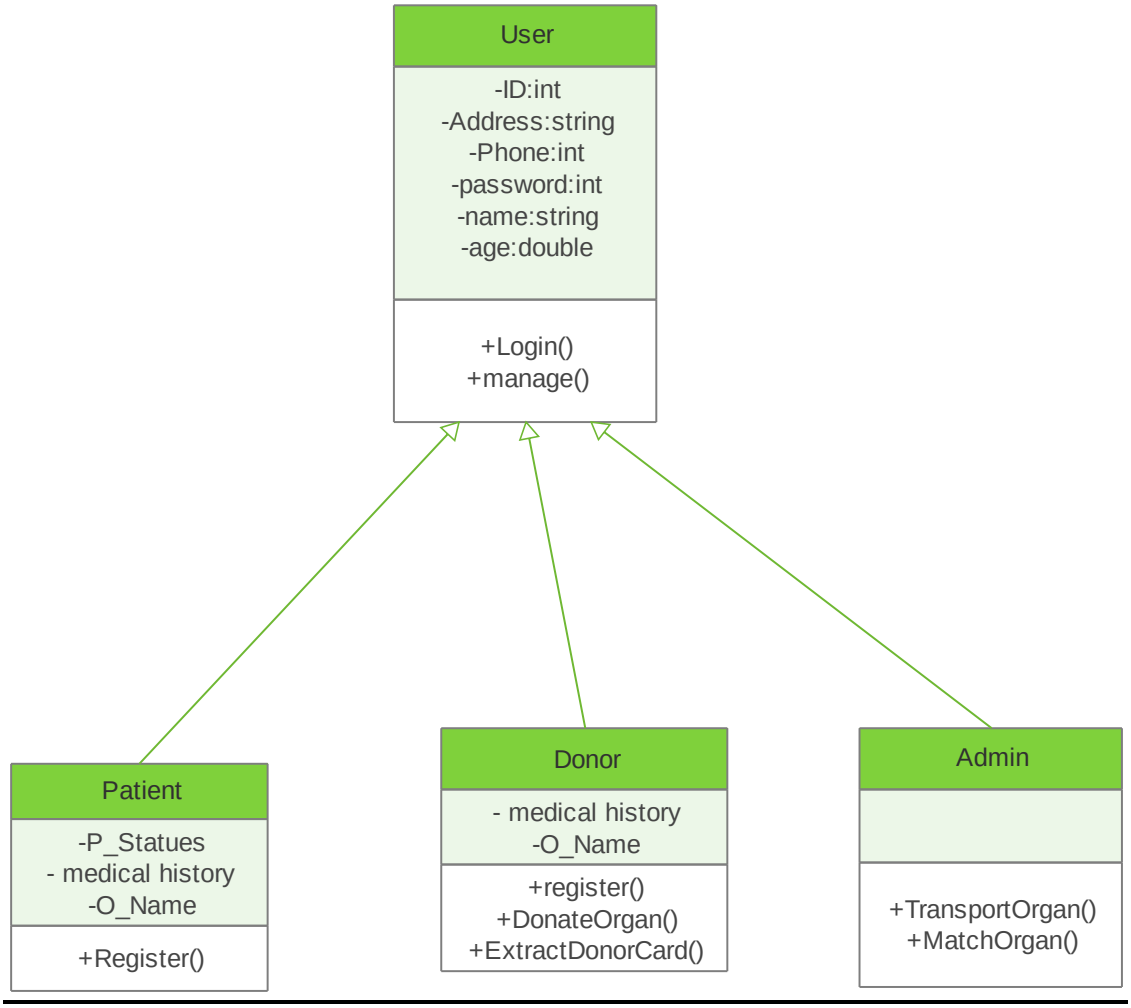
Use Case ID :	7
Use Case Name :	Transport organ
Actors :	Admin
Description :	It allow user to transport organ from center to another.
Type	Primary

Flow	
Actor action	**System action**
1.The user select transport organ	
	2.the system open transport form
3.The user enter data and send it	
	4.The system check data and search for it.
	5. The system view match list.

Structural Modeling (Class Diagram)

- Class diagram in the Unified Modeling Language (UML) is a 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.

5.3 Class diagram :



5.3.2 Sequence Diagram :

The sequence diagram represents object collaboration and is used to define event sequences between objects for a certain outcome. A sequence diagram is an essential component used in processes related to analysis, design and documentation.

Sequence diagram

Register

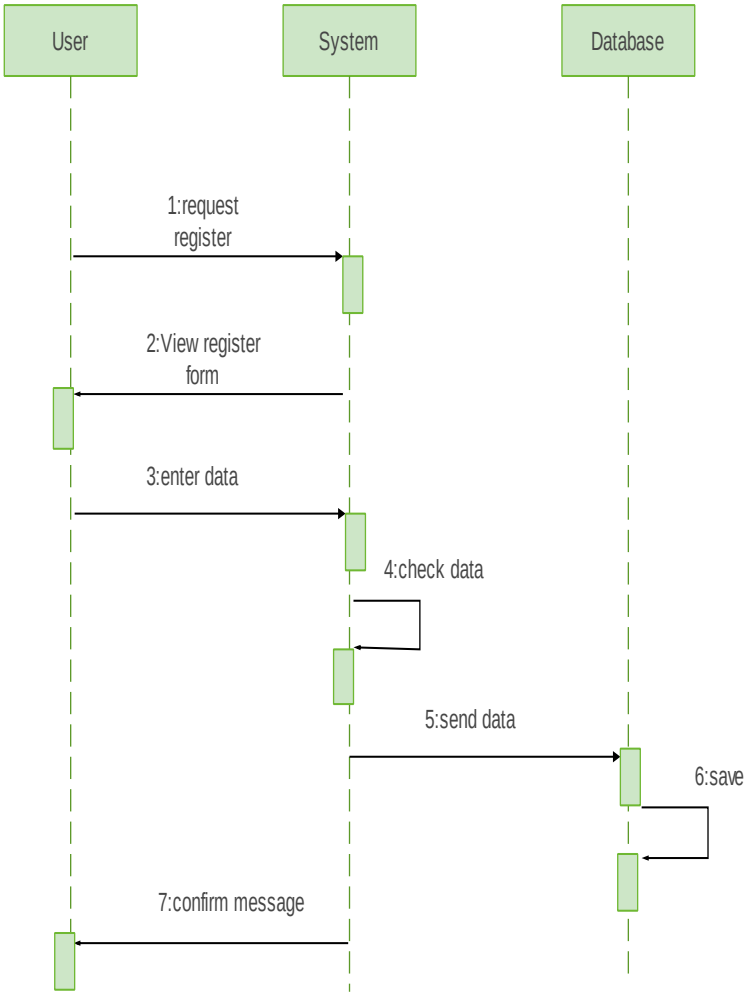


Figure 5.2 - register sequence diagram .

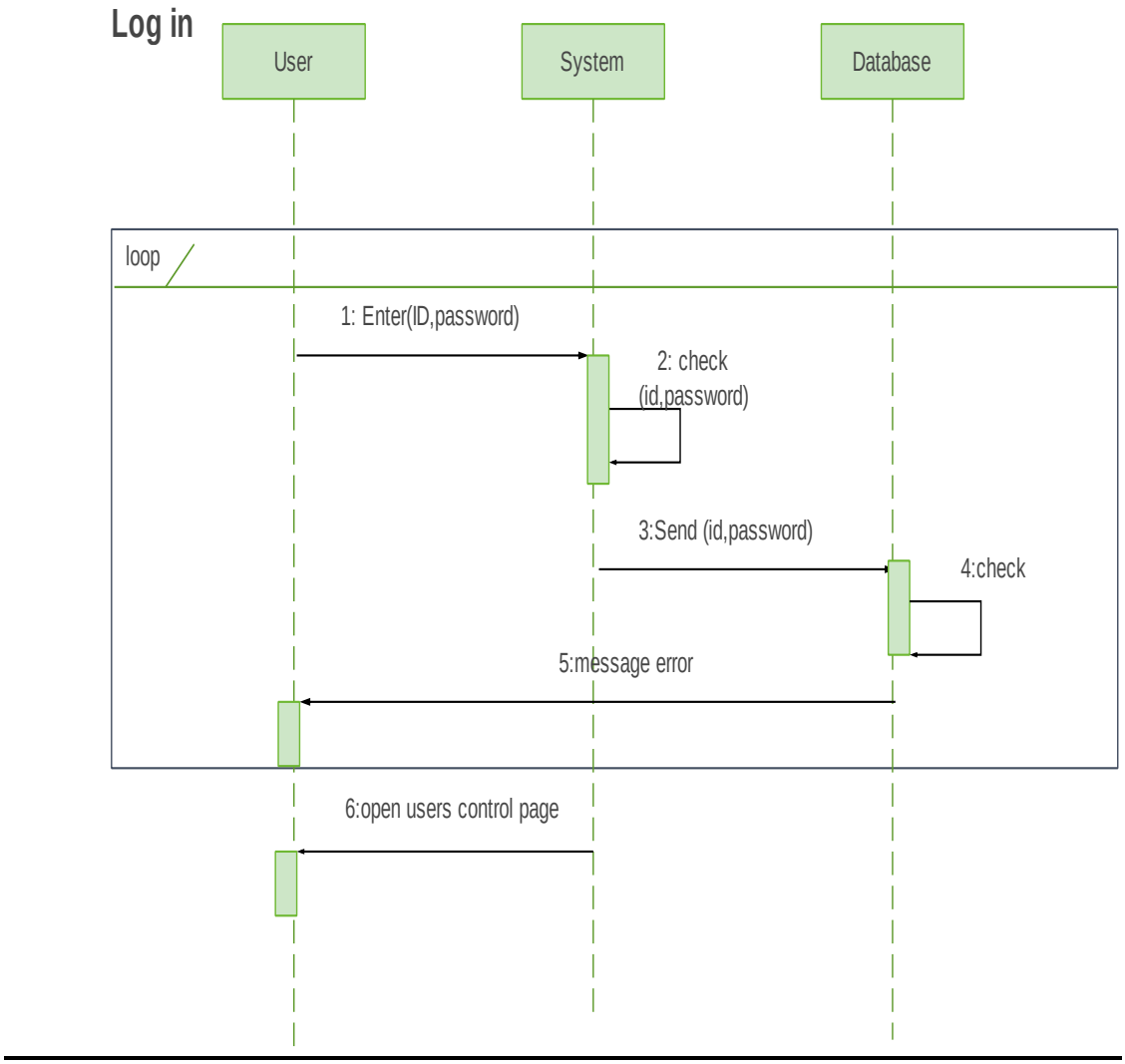


Figure 5.1 - log in sequence diagram .

Donate Organ

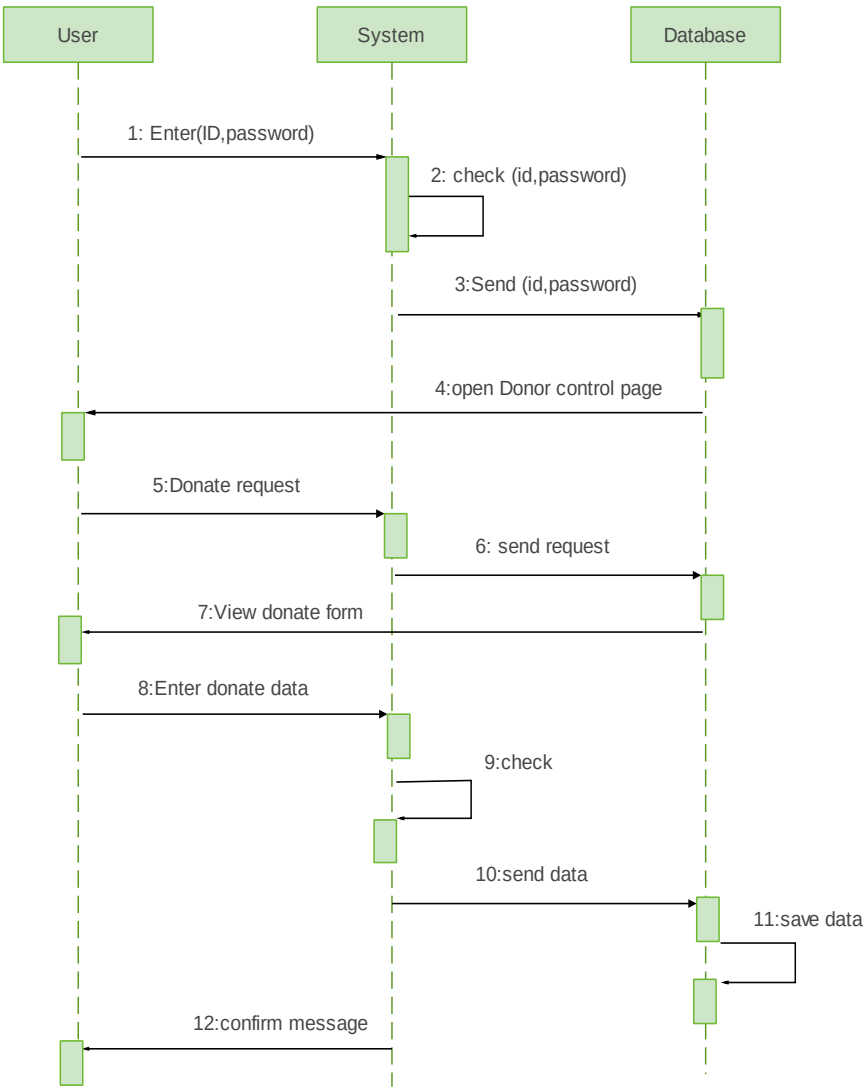


Figure 5.4 - donate organ sequence diagram .

Extract donor card

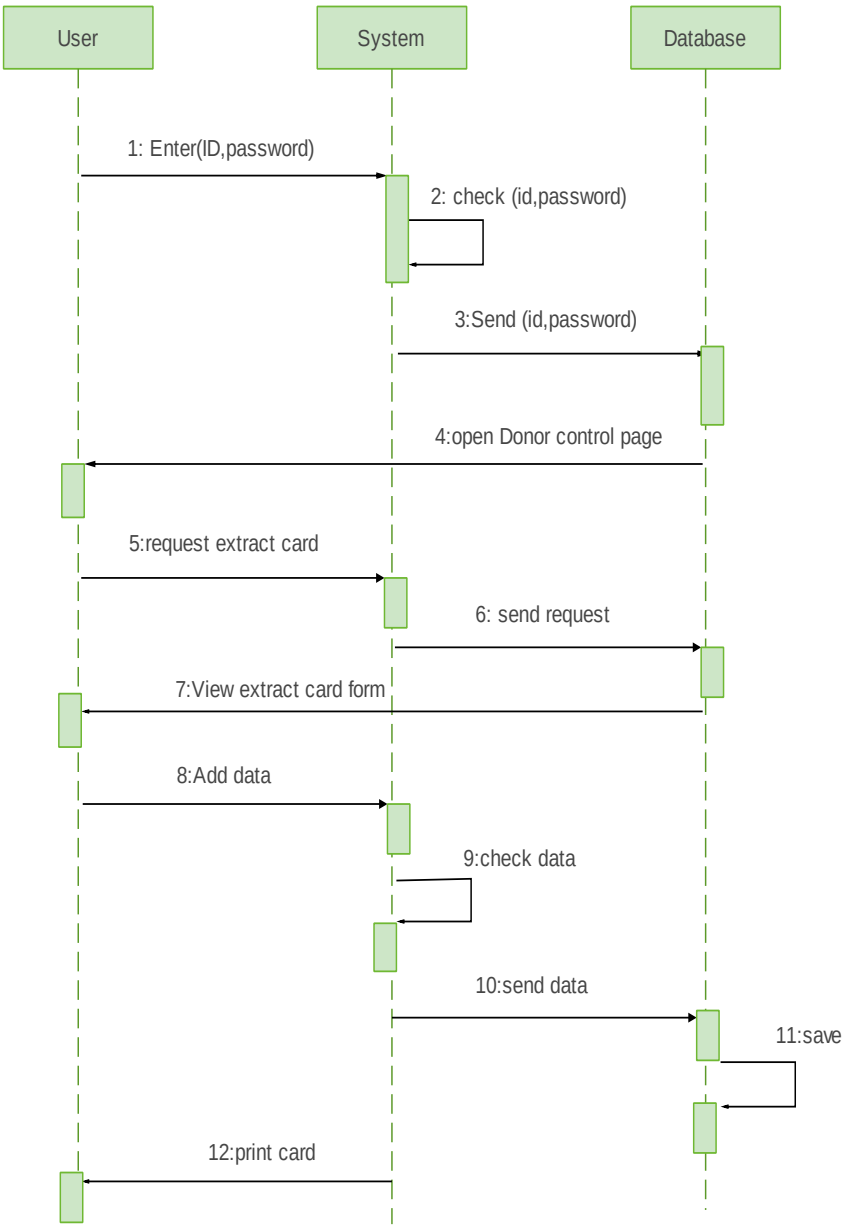


Figure 5.3 - log extract card sequence diagram .

Add Data

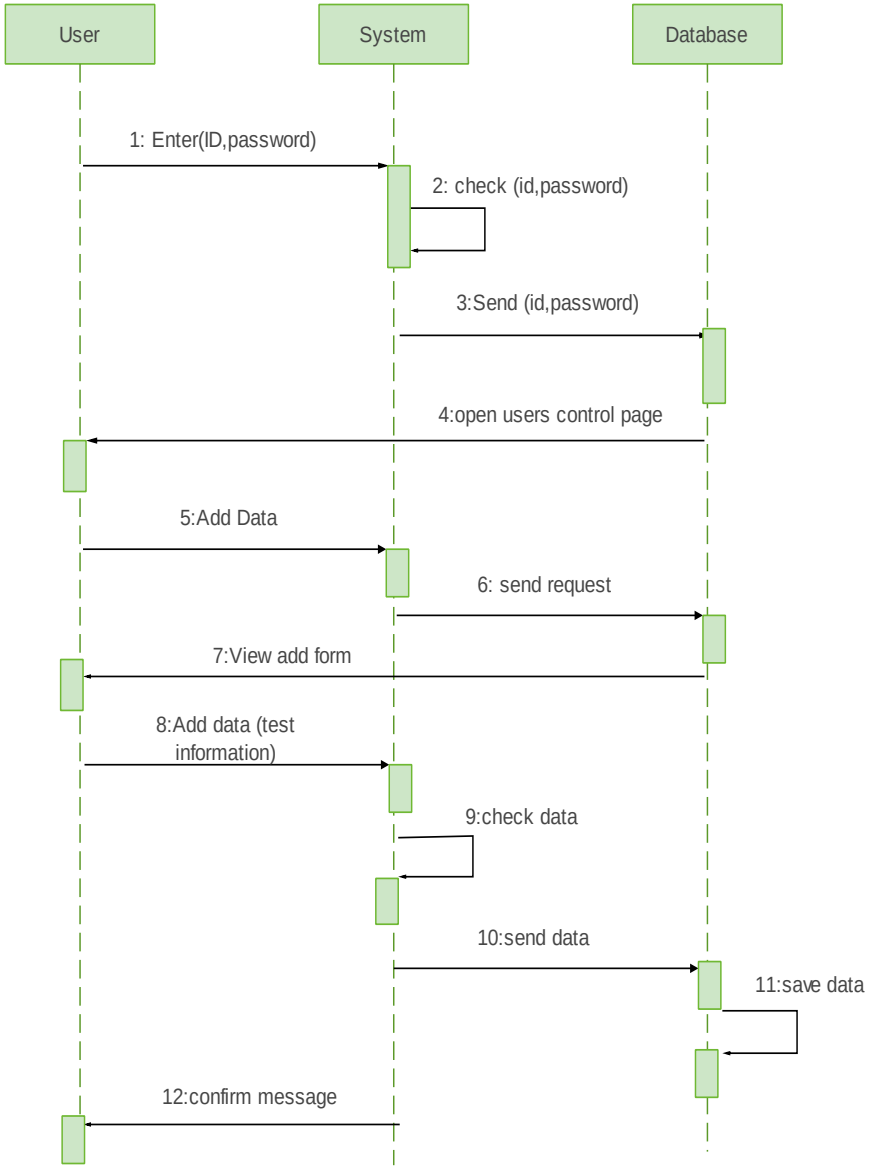


figure 5.6 - add sequence diagram

Delete

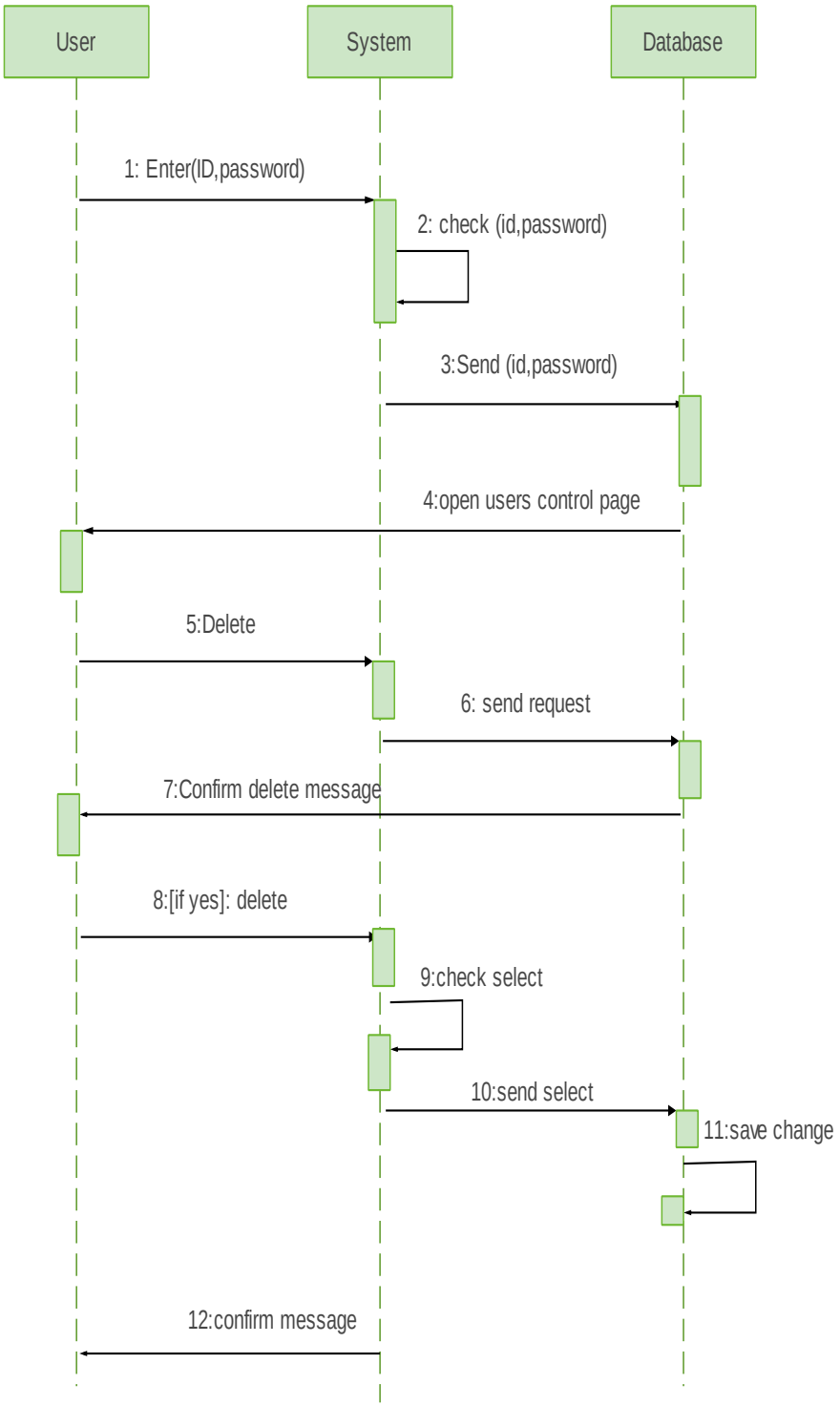


Figure 5.5 - delete data sequence diagram.

View

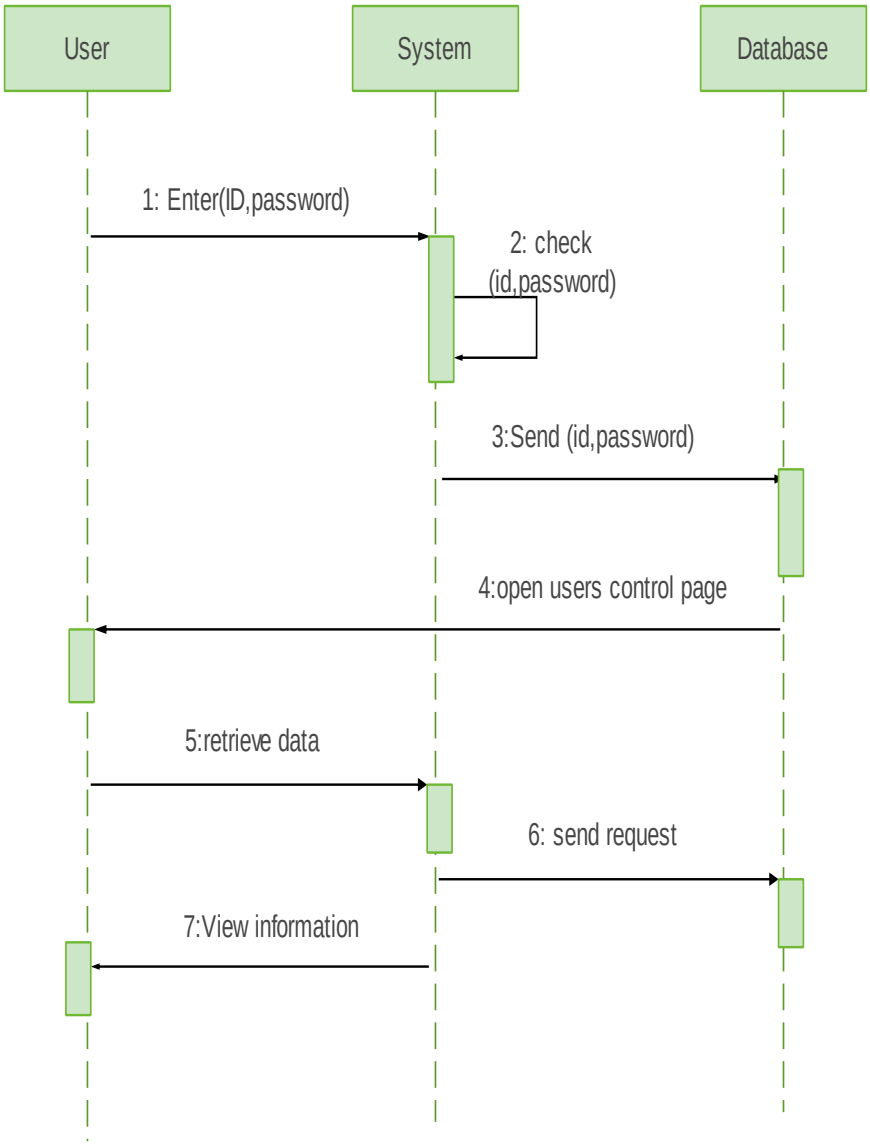


Figure 5.7 - view sequence diagram .

Update Data

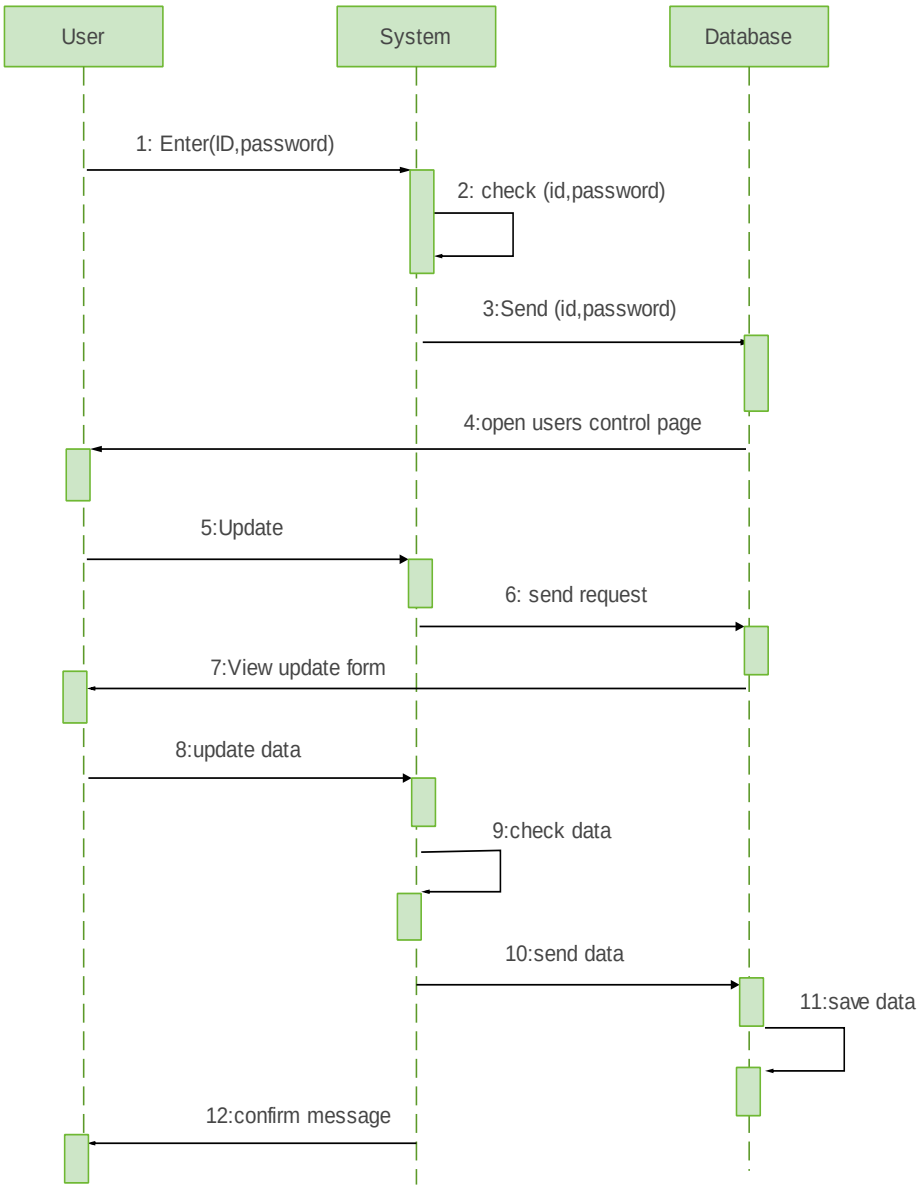


Figure 1.8 update data sequence diagram .

Donate Organ

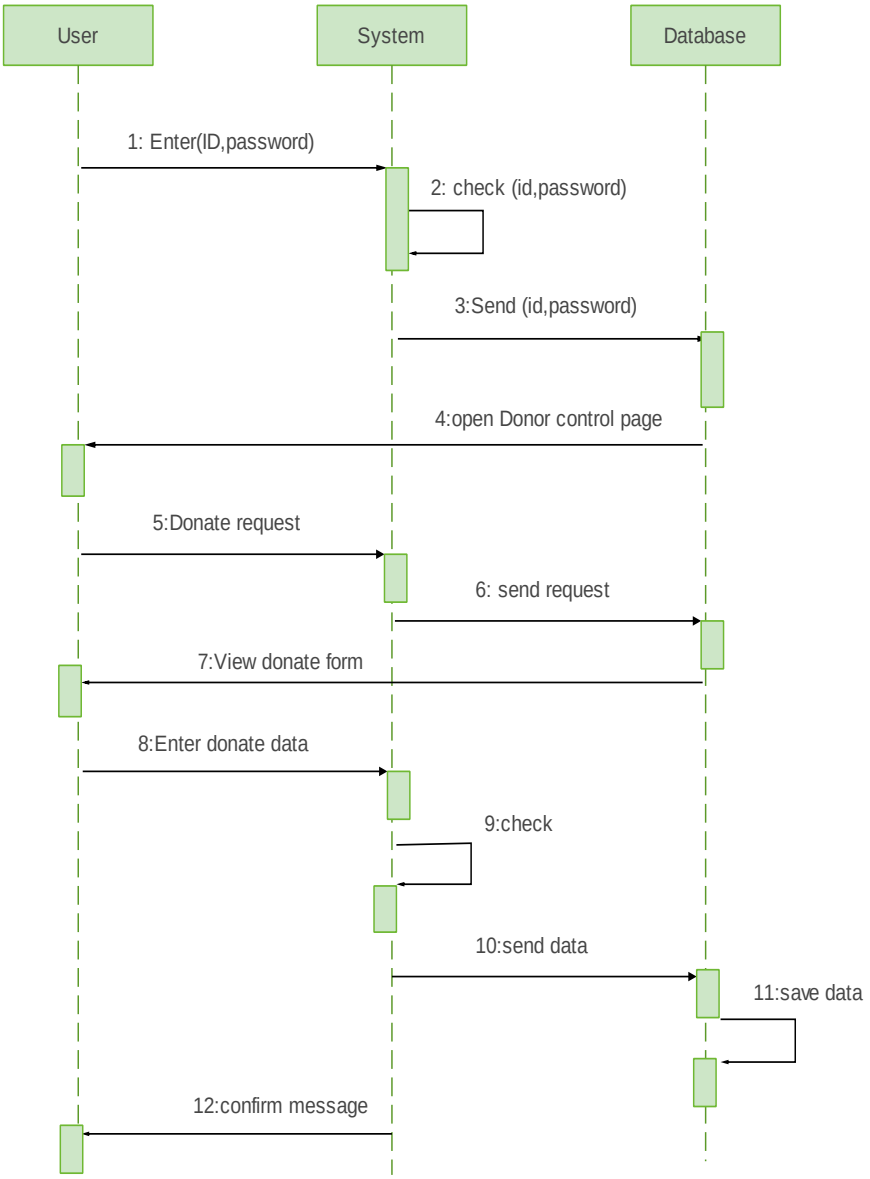


Figure 5.1 - donate organ diagram .

Transport organ

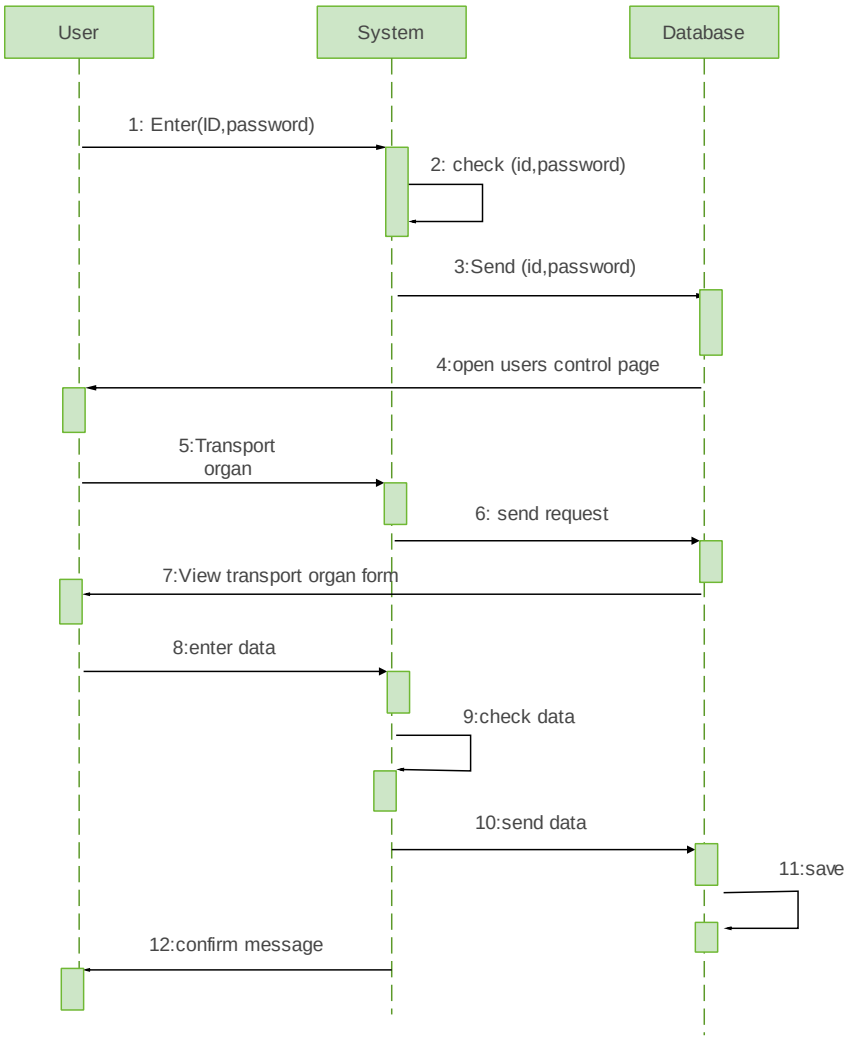


Figure 1.10 - transport organ sequence diagram .

Matching between organ and patient

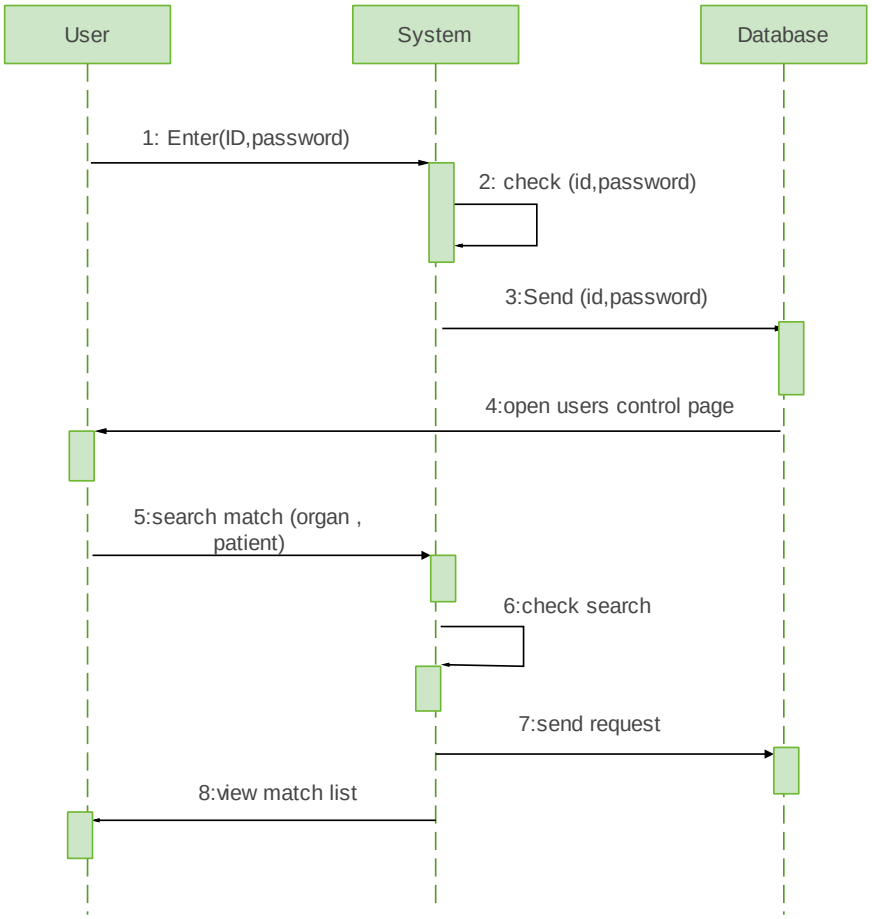
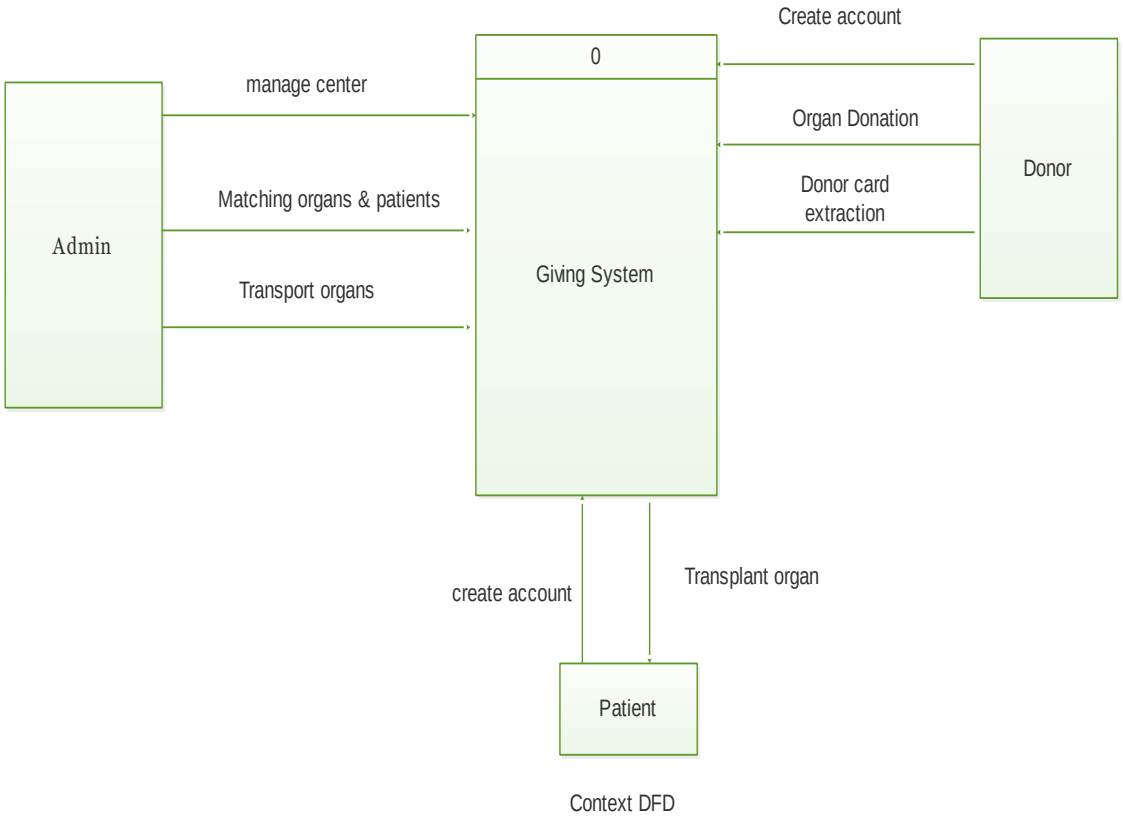
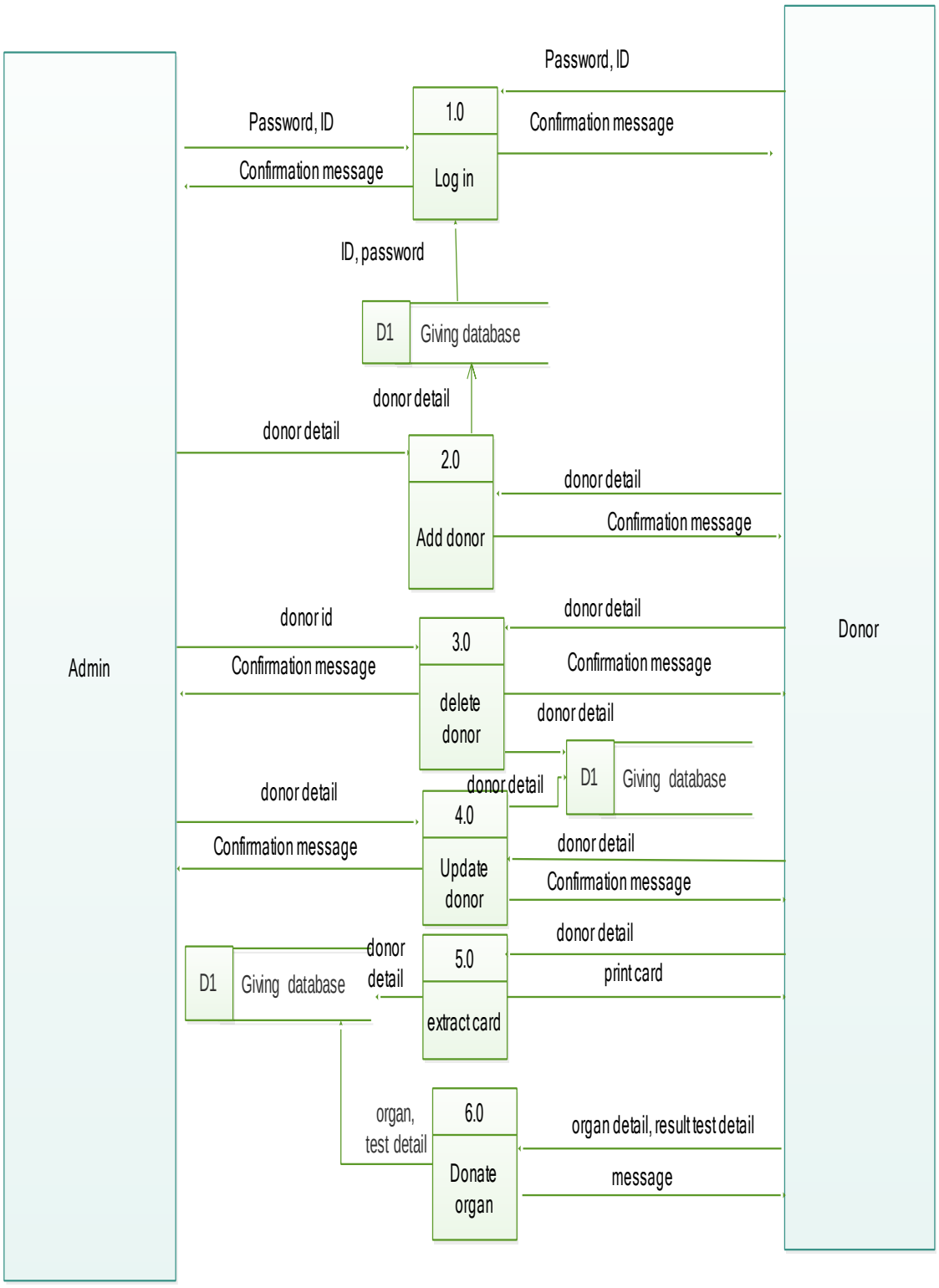


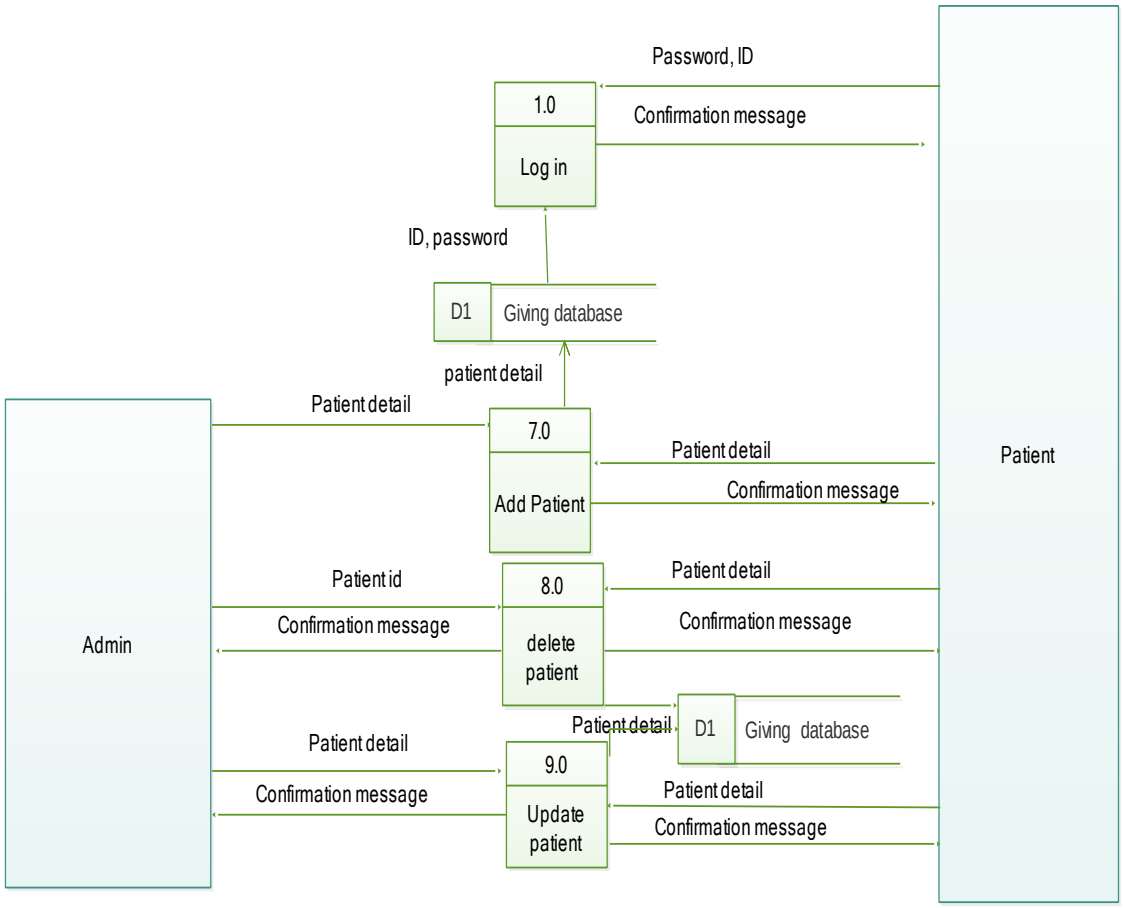
Figure 5.10 - matching between organ and patient sequence diagram .

DFD diagram :



2.1 context DFD


Admin
Donor
Password, ID
1.0
Log in
Confirmation message
Password, ID
Confirmation message
ID, password
D1
Giving database
donor detail
donor detail
2.0
Add donor
donor detail
Confirmation message
donor id
Confirmation message
3.0
delete donor
donor detail
Confirmation message
donor detail
D1
Giving database
donor detail
donor detail
4.0
Update donor
Confirmation message
donor detail
Confirmation message
D1
Giving database
donor detail
5.0
extract card
donor detail
print card
organ, test detail
6.0
Donate organ
organ detail, result test detail
message



2.2 level zero DFD

5.4.1-Database :

7.1 Introduction

This section focuses on the Giving database, especially the ER model. It also illustrate the structural model .

5.4.1 - ER diagram

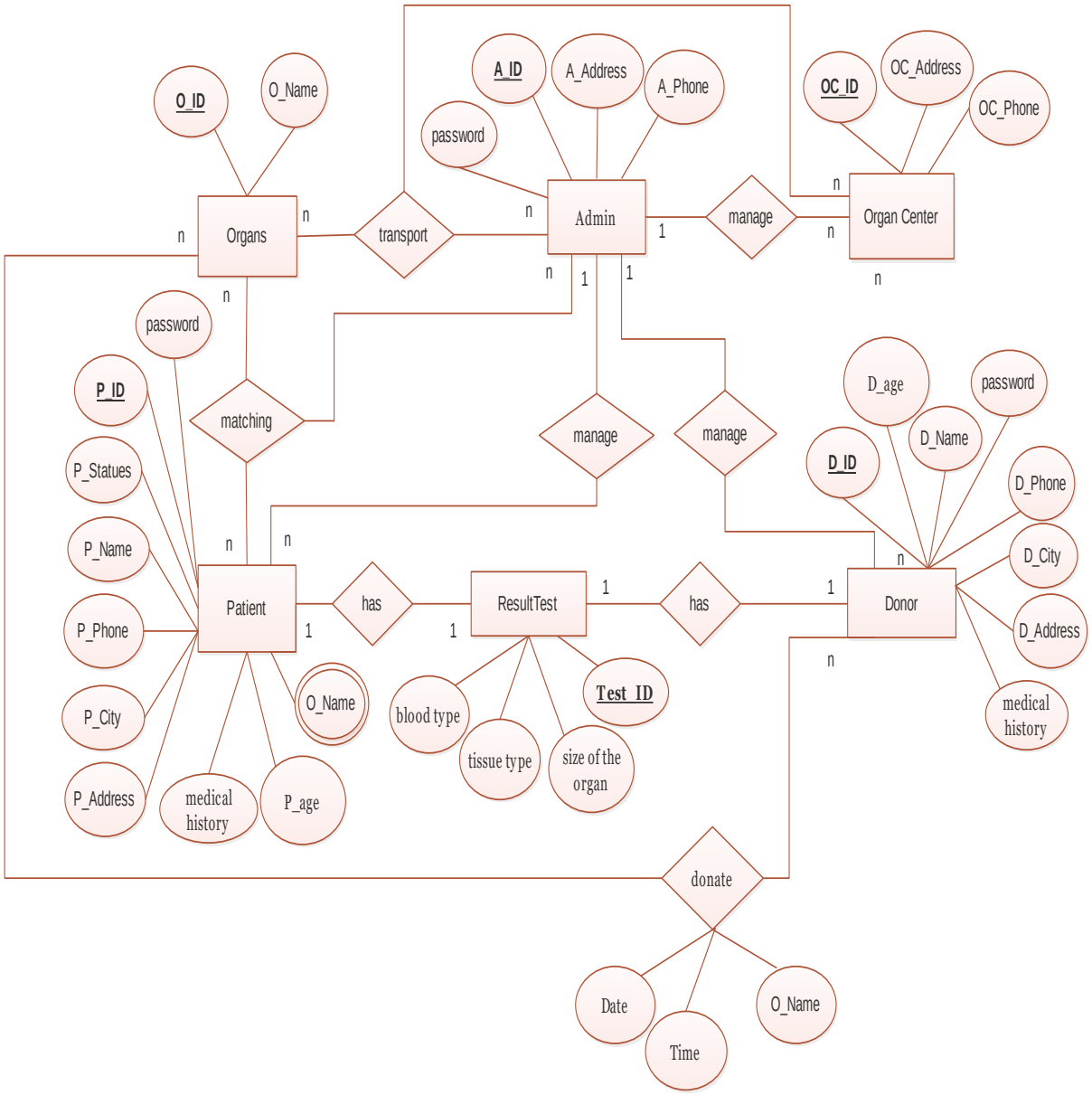


Figure .3.1 ER Diagram .

5.4.3.-ER description :

Entity Name	Description	Occurrence
Admin	This entity describing manager of the system.	**Admin can manage many organ cenetr ,many donor, and many patient.** **Admin transprt organ to center .** **Admin matching between many organs and many patient to transplant one.**
Organ center	This entity describing cenetrs of organ donor.	**Each organ center transports many organ to it.**
Organ	This entity describing all organs which can transplant it.	**Each organ matching with many patient , donated by many donor.**
Patient	This entity describing data of patient who want organ.	**Each patient has one result test , match with many organ.**
Donor	This entity describing data of donor who want donate organ	**Each donor has one result test, donate many organs.**
Result test	This entity describing result test of donor or patient.	**Each result test has one patient or one donor.**

5.4.4 - database Schema

Admin			
A_ID	A_Address	A_Phone	Password

Organ center			
OC_ID	OC_Address	OC_Phone	A_ID

Organ	
O_ID	O_Name

	Patient										
P_ID	password	P_Statues	P_Name	P_Phone	P_City	P_Address	medical history	P_age	A_ID	O_name	Test_ID

Donor										
D_ID	**password**	**D_age**	**D_Name**	**D_Phone**	**D_City**	**D_Address**	**medical history**	**O_name**	**Test_ID**	**A_ID**

Result test			
Test_ID	Blood type	Tissue type	Size of the organ

Donate			
D_ID	O_ID	Date	Time

Transport		
O_ID	OC_ID	A_ID

Match		
P_ID	O_ID	A_ID

3.4.1 Data Dictionary

Entity Name	Attributes	Description	Data Type	Length	Nulls	Multi-valued	range	PK
Admin	-A_ID	The identify name of admin use to log in the system .	Varchar	20	Not null			Yes
	-A_Address	The adrress of admin.	Varchar	50	Null			
	-A_Phone	Phone of admin.	Number	10	Null			
	-password	Password of admin use to log in the system.	Number	10	Not null			
Organ	-O_ID	Organ idntify.	Varchar	20	Not null			Yes
	-O_Name	Organ name	Varchar	50	Not null			
Organ center	-OC_ID	Organ center identify.	Varchar	20	Not null			Yes
	-OC_Address	Organ center address.	Varchar	50	Not null			
	-OC_Phone	Organ center phone	Number	10	Not null			

Patient	-P_ID	Patient identify used to log in the system.	Varchar	20	Not null			Yes
	-password	Patient password use to log in the system.	Number	20	Not null			
	-P_Statues	Patient statues take number from 1 to 5 1means statues late.	Number	1	Not null		1 to 5	
	-P_Name	Patient name.	Varchar	50	Not null			
	-P_Phone	Patient phone.	Number	10	Not null			
	-P_City	Patient city	Varchar	50	Not null			
	-P_Address	Patient address	Varchar	50	Not null			
	- medical history	Medical history of patient.	Varchar	100	Not null			
	-P_age	Patient age.	Number	5	Not null			
	-O_Name	Organ name whitch patient want.	Varchar	50	Not null	Yes		

Donor	-D_ID	Donor identify used to log in the system.	Varchar	20	Not null			Yes
	-D_Statues	Donor password use to log in the system.	Number	20	Not null			
	-D_Name	Donor name.	Varchar	50	Not null			
	-D_Phone	Donor phone.	Number	10	Not null			
	-D_City	Donor city	Varchar	50	Not null			
	-D_Address	Donor address	Varchar	50	Not null			
	- medical history	Donor history of patient.	Varchar	100	Not null			
	-D_age	Donor age.	Number	5	Not null			
	-O_Name	Organ name whitch Donor will donate it.	Varchar	50	Not null	Yes		
Test result	-Test_ID	Identify test	Varchar	20	Not null			Yes
	-blood type	Blood type	Varchar	3	Not null			
	- tissue type	Tissue type	Varchar	50	Not null			
	- size of the organ	Size of the organ	Varchar	50	Not null			

5.5 -User interfaces :

مريض ○ متبرع ○

معلومات شخصية:

اسم المستخدم

كلمة السر

الاسم

العمر

العنوان

المدينة

التلفون

معلومات طبية:

التاريخ الطبي

الحالة

اسم العضو اختار العضو

اسم العضو 2 اختار العضو

التسجيل

تعديل بيانات المريض

معلومات شخصية:

اسم المستخدم

كلمة السر

الاسم

العمر

العنوان

المدينة

التلفون

معلومات طبية:

التاريخ الطبي

الحالة

اسم العضو اختار العضو

اسم العضو 2 اختار العضو

تعديل

تعديل بيانات المتبرع

معلومات شخصية:

اسم المستخدم ----------

كلمة السر ----------

الاسم ----------

العمر ----------

العنوان ----------

المدينة ----------

التلفون ----------

معلومات طبية:

التاريخ الطبي ----------

اسم العضو اختار العضو

اسم العضو 2 اختار العضو

تعديل

الصفحة الرئيسية التسجيل المرضى المتبرعين مراكز التبرع اتصل بنا

معلومات شخصية:

اسم المستخدم ----------

كلمة السر ----------

الاسم ----------

العمر -----

العنوان ----------

المدينة ----------

التلفون ----------

معلومات طبية:

التاريخ الطبي ----------

الحالة ----------

اسم العضو اختار العضو

اسم العضو 2 اختار العضو

الخلف

الصفحة الرئيسية التسجيل المرضى المتبرعين مراكز التبرع اتصل بنا

المرضى

تعديل

حذف

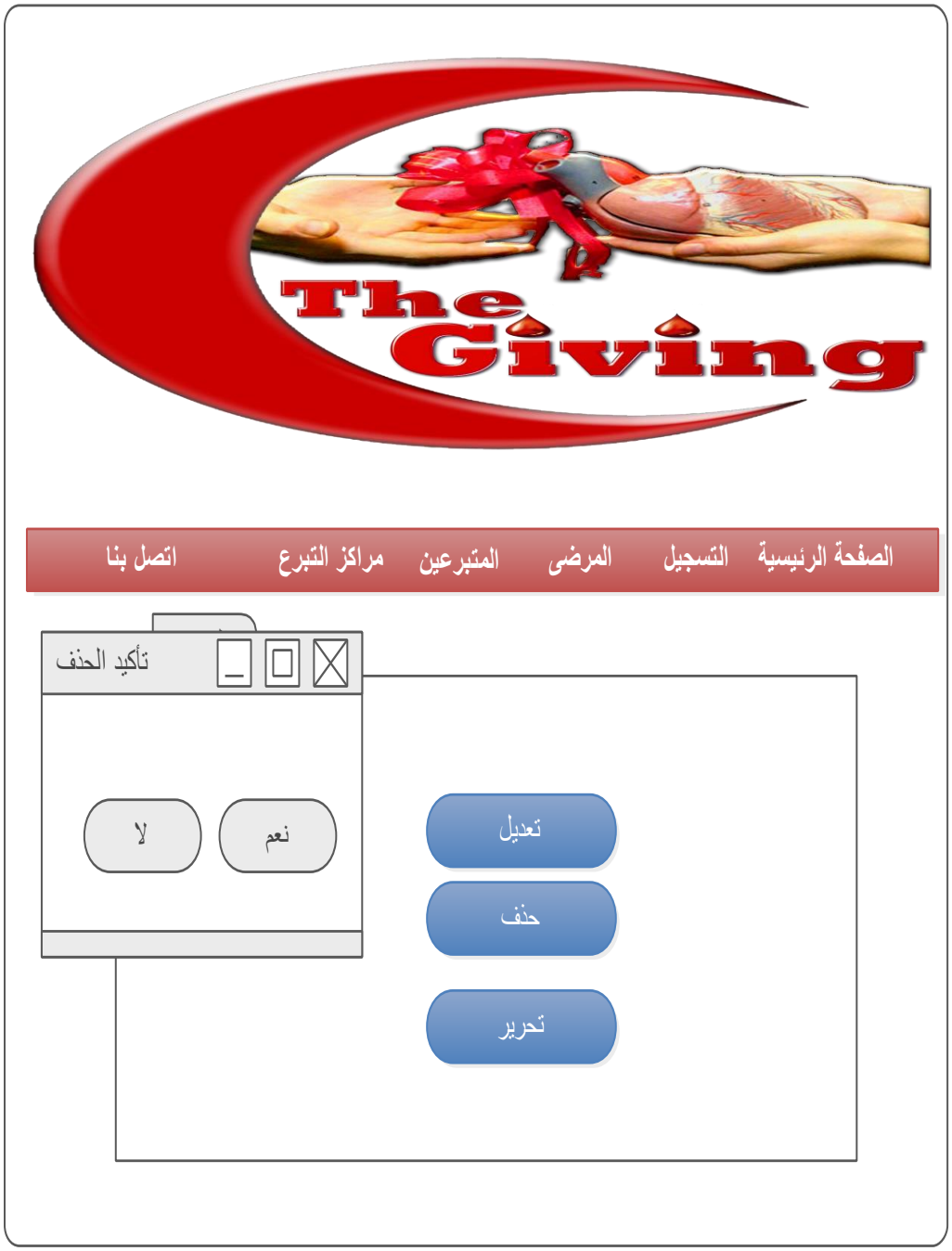
تحرير

الصفحة الرئيسية | التسجيل | المرضى | المتبرعين | مراكز التبرع | اتصل بنا

المتبرع

- استخرج بطاقة تبرع
- تعديل
- حذف
- تحرير


The Giving
الصفحة الرئيسية التسجيل المرضى المتبرعين مراكز التبرع اتصل بنا
المدير
تطابق الاعضاء مع المريض
تعديل
حذف
عرض
نقل الاعضاء بين المراكز


The Giving
الصفحة الرئيسية
التسجيل
المرضى
المتبرعين
مراكز التبرع
اتصل بنا
تأكيد الحذف
نعم
لا
تعديل
حذف
تحرير

Chapter Six

IMPLEMENTATION

6.1. **HARDWARE AND SOFTWARE:**

6.*1.1. HARDWARE DEVICES THAT WE NEEDED WERE:*

- Laptops and personal computers.
- Printers and scanners.

6.1.2. SOFTWARE:

Program	*Use*
Microsoft word 2010	Write reports
Photoshop	Design photo
Xampp server	Create database
Notpad++	Write code page

Table6. 1: software used in our project

6.2. **IMPLEMENTATION DIFFICULTIES:**

"**Out of difficulties grow miracles**." - Jean de la Bruyere-

As everyone faces some problems when working or doing anything in life , we as well had some difficulties when working on our project, but thank god we managed to solve all of the issues that popped up and came up with a better solutions regarding these

problems.

Some of the main problems that we had were:

1. At the 1st semester, When we designed the "**access code**" – as a login code to access each room - it wasn't a good idea because the privacy of the rooms are compromised. to simplify the reason consider the following scenario :

Leader of group #1 accessed the public room and created a private room with the code 1234 . later on , the leader of group #2 accessed the public room as well, and created a private room with the same previous code (1234) . The system in this case will display a message indicating the this code is used by another group and group 2 must change it.

Here the privacy of group #1 room is compromised and the purpose of the private room is gone.

So the solution was as following :

1.1. When the coordinator enters the students info, she will include the group's number and each number will represent the group private room.

1.2. After the excel sheet is imported, the rooms will be created directly.
1.3. When the leader and other members access the public room they are able to access the private room directly.
2. One of the major issues we faced is the database. Because we used XAMPP , the foreign key (FK) in each table cannot be attached to more than one table.
For example , in the announcement table , the FK (MID) must be connected to both student and faculty tables , and because this is prohibited in XAMPP we created two FK (MID and SID). We connected SID to the student table and MID to the faculty table.
3. One of the problems that is also related to the database is the ability to distinguish wether the posted announcement is in private or public room (especially since the announcement is one table). Again , XAMPP doesn't support that FK is related to more than one table , so we had to create a row named public with the room_ id (**0**) and the rest of the rows contain other private rooms with the **group number** as a its room_id. The announcement ,resources and calendar event are now differentiated than each other using the room_ID.

4. In private room , it was hard to know wither the event or announcement is posted by the supervisor or students.
So the *solution* was to use a flag where **1** indicate that the post belongs to the supervisor and **0** means that the post belongs to the student.

6.3. **CODES:**

The following section will contain our site codes.
We display the code page of patient .

Index page

```
<!DOCTYPE html >
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="Content-Type" charset="utf-8" content="text/html; charset=utf-8" />
<title>التبرع بالأعضاء</title>
<link href="css.css" rel="stylesheet" type="text/css" />
<script type="text/JavaScript">
<!--
function MM_preloadImages() { //v3.0
  var d=document; if(d.images){ if(!d.MM_p) d.MM_p=new Array();
    var i,j=d.MM_p.length,a=MM_preloadImages.arguments; for(i=0; i<a.length; i++)
    if (a[i].indexOf("#")!=0){ d.MM_p[j]=new Image; d.MM_p[j++].src=a[i];}}
}

function MM_swapImgRestore() { //v3.0
  var i,x,a=document.MM_sr; for(i=0;a&&i<a.length&&(x=a[i])&&x.oSrc;i++)
x.src=x.oSrc;
}

function MM_findObj(n, d) { //v4.01
  var p,i,x;  if(!d) d=document; if((p=n.indexOf("?"))>0&&parent.frames.length) {
    d=parent.frames[n.substring(p+1)].document; n=n.substring(0,p);}
  if(!(x=d[n])&&d.all) x=d.all[n]; for (i=0;!x&&i<d.forms.length;i++) x=d.forms[i][n];
```

```
  for(i=0;!x&&d.layers&&i<d.layers.length;i++)
x=MM_findObj(n,d.layers[i].document);

  if(!x && d.getElementById) x=d.getElementById(n); return x;

}



function MM_swapImage() { //v3.0

  var i,j=0,x,a=MM_swapImage.arguments; document.MM_sr=new Array;
for(i=0;i<(a.length-2);i+=3)

   if ((x=MM_findObj(a[i]))!=null){document.MM_sr[j++]=x; if(!x.oSrc) x.oSrc=x.src;
x.src=a[i+2];}

}

//-->

</script>

</head>

<body
onload="MM_preloadImages('images/index_17_a.gif','images/index_18_a.gif','images/in
dex_19_a.gif','images/index_20_a.gif','images/index_21_a.gif','images/index_22_a.gif')"
>

<table width="780" border="0" align="center" cellpadding="0" cellspacing="0"
bgcolor="#FFFFFF">

  <tr>

    <td align="left" valign="top"><table width="100%" border="0" cellspacing="0"
cellpadding="0">

      <tr>

        <td align="left" valign="top"><table width="100%" border="0" cellspacing="0"
cellpadding="0">

          <tr>

            <td width="48%" align="left" valign="top" style="padding-top:13px; padding-
```

```
left:30px; padding-bottom:20px;"></td>

        <td width="52%" align="left" valign="top" style="padding-left:164px; padding-top:52px;"><table width="40%" border="0" cellspacing="0" cellpadding="0">

            <!-- top icon    -->

                                <tr>

            <td align="left" valign="top" style="padding-right:35px;"><a href="index.html"><img src="images/index_06.gif" alt="" width="32" height="51" border="0" /></a></td>

            <td align="left" valign="top" style="padding-right:33px;"><a href="call.html"><img src="images/index_08.gif" alt="" width="32" height="51" border="0" /></a></td>

            <td align="left" valign="top"><a href="mailto:queen.2030@windowslive.com"><img src="images/index_10.gif" alt="" width="32" height="51" border="0" /></a></td>

            </tr>

          </table></td>

        </tr>

      </table></td>

    </tr>

    <tr>

          <!-- link page -->

      <td align="left" valign="top"><table width="100%" border="0" cellspacing="0" cellpadding="0">

        <tr>

          <td width="25" align="center" valign="middle"> </td>

          <td align="center" valign="middle"><a href="call.html" onmouseout="MM_swapImgRestore()" onmouseover="MM_swapImage('Image5','','images/index_22_a.gif',1)"><img src="images/index_22.gif" alt="home" name="Image5" width="122" height="45"
```

```
border="0" id="Image5" /></a></td>

        <td align="center" valign="middle"><a href="viewc.php"
onmouseout="MM_swapImgRestore()"
onmouseover="MM_swapImage('Image6','','images/index_21_a.gif',1)"><img
src="images/index_21.gif" alt="study" name="Image6" width="121" height="45"
border="0" id="Image6" /></a></td>

        <td align="center" valign="middle"><a href="patient.html"
onmouseout="MM_swapImgRestore()"
onmouseover="MM_swapImage('Image7','','images/index_20_am.gif',1)"><img
src="images/index_20m.gif" alt="service" name="Image7" width="121" height="45"
border="0" id="Image7" /></a></td>

        <td align="center" valign="middle"><a href="donor.html"
onmouseout="MM_swapImgRestore()"
onmouseover="MM_swapImage('Image8','','images/index_20_a.gif',1)"><img
src="images/index_20.gif" alt="partner" name="Image8" width="121" height="45"
border="0" id="Image8" /></a></td>

        <td align="center" valign="middle"><a href="reg.html"
onmouseout="MM_swapImgRestore()"
onmouseover="MM_swapImage('Image9','','images/index_19_a.gif',1)"><img
src="images/index_19.gif" alt="solution" name="Image9" width="120" height="45"
border="0" id="Image9" /></a></td>

        <td align="center" valign="middle"><a href="index.html"
onmouseout="MM_swapImgRestore()"
onmouseover="MM_swapImage('Image10','','images/index_17_a.gif',1)"><img
src="images/index_17.gif" alt="call us" name="Image10" width="122" height="45"
border="0" id="Image10" /></a></td>

        <td width="28" align="center" valign="middle">&amp;nbsp;</td>

      </tr>

    </table></td>

  </tr>


 </table></td>
```

```
  </tr>

  <tr>

   <td align="left" valign="top"><table width="723" border="0" align="center"
cellpadding="0" cellspacing="0">

    <tr>

     <td height="4" align="left" valign="top" bgcolor="#A70505"> </td>

    </tr>

    <tr>

     <td align="left" valign="top"><table width="100%" border="0" cellspacing="0"
cellpadding="0" style="border-left:#CBCBCB 1px solid;">

      <tr>

       <td align="left" valign="top"><img src="images/index_26.gif" width="130"
height="98" alt="" /></td>

       <td align="left" valign="top"><img src="images/index_27.gif" width="171"
height="212" alt="" /></td>

       <td align="left" valign="top"><table width="100%" border="0"
cellspacing="0" cellpadding="0">

        <tr>

         <td align="left" valign="top" style="padding-top:37px; padding-
left:44px;"><img src="images/index_31.gif" width="219" height="129" alt="" /></td>

        </tr>

        <tr>

         <td align="right" valign="bottom" style="padding-top:27px; padding-
left:242px;"><img src="images/index_36.gif" width="38" height="19" alt="" /></td>

        </tr>

       </table></td>

       <td align="right" valign="top"><img src="images/index_29.gif" width="141"
height="212" alt="" /></td>
```

```
        </tr>

      </table></td>

    </tr>

    <tr>

      <td align="left" valign="top"><table width="100%" border="0" cellspacing="0" cellpadding="0">

        <tr>

          <td width="15" align="left" valign="top"><img src="images/index_38.gif" width="15" height="139" alt="" /></td>

          <td align="left" valign="top" style="background-image:url(images/index_40.gif); background-repeat:repeat-x;"><table width="100%" border="0" cellspacing="0" cellpadding="0">

            <tr>

              <td align="left" valign="top"><table width="100%" border="0" cellspacing="0" cellpadding="0">

                <tr>

                  <td align="left" valign="top" style="padding-top:14px; padding-left:302px;"><img src="images/index_44.gif" width="229" height="23" alt="" /></td>

                </tr>

                <tr>

                  <td align="right" valign="top" style="padding-top:19px; padding-left:37px; padding-right:18px;" class="welcome"><span style="color:#ffffff; font-weight:bold;">

من أجل مد يد العون لأولئك الذين يعانون، وإقناع أكثر عدد ممكن من الناس بأهمية التبرع بالأعضاء، سوف نبني نظاما يهدف إلي تعزيز التواصل والثقة بين المتبرعون والمؤسسات الطبية الحكومية المسؤولة عن عمليات زرع الأعضاء!.

</center>  <br /><br /> </td>

                </tr>
```

```
            </table></td>

            <td align="right" valign="top" style="padding-top:24px; padding-
right:10px;"><img src="images/index_47.gif" width="101" height="110" alt="" 
/></td>

          </tr>

        </table></td>

      </tr>

    </table></td>

  </tr>

  <tr>

    <td align="left" valign="top" style="padding-top:43px;"><table width="723" 
border="0" cellspacing="0" cellpadding="0">

      <tr>

        <td width="467" align="left" valign="top"><table width="96%" border="0" 
cellspacing="0" cellpadding="0">

          <tr>

            <td align="left" valign="top"><table width="100%" border="0" 
cellspacing="0" cellpadding="0">

              <tr>

                <td align="left" valign="top"><table width="100%" border="0" 
cellspacing="0" cellpadding="0">

                  <tr>

                    <td width="20%" align="left" valign="top"><img 
src="images/index_47.gif" width="85" height="89" alt="" /></td>

                    <td width="80%" align="left" valign="top" style="padding-top:37px; 
padding-left:21px;">

                                                </td>

                  </tr>
```

```
</table></td>

</tr>

<tr>

<td align="left" valign="top" class="text" style="padding-
top:21px;"><span style="color:#A70505; font-weight:bold;">
```

زرع الأعضاء

يقدم فوائد جمة لبعض المرضى و ذلك بمنحهم حياة جديدة ، مما يحسن من اسلوب الحياة للآلاف كل عام. ومع ذلك، يواجه هذا المجال تحدي كبير متمثل في الحد من الفجوة الآخذة في الاتساع بين المتاح و المطلوب من الأعضاء المتبرع بها.

النقص في الأعضاء المتاحة و قوائم الانتظار الطويلة للحصول على العضو المناسب من خلال القنوات التقليدية، يجعل من الضروري استخدام جميع وسائل الإعلام المتاحة وأهمها الإنترنت كوسيلة للاتصال، لنشر ثقافة التبرع بالأعضاء وأهميته للمجتمع ، و رأي الدين فيه.

```
<br />

<br />

<br /><br />

</td>

</tr>

</table></td>

</tr>

<tr>

<td align="left" valign="top" style="padding-top:43px;"><table
width="100%" border="0" cellspacing="0" cellpadding="0">

<tr>

<td width="66%" align="left" valign="top"><table width="100%"
border="0" cellspacing="0" cellpadding="0">
```

```
<tr>
  <td align="left" valign="top"></td>
</tr>
<tr>
  <td align="left" valign="top" class="text" style="padding-top:20px;
padding-bottom:30px;">
                    <span style="color:#A70505; font-
weight:bold;">النظام </span>
```

يقوم بالعديد من المهام المختلفة مثل ، توضيح أهمية التبرع بالأعضاء بعد الموت لإنقاذ حياة أخرى، والقواعد الدينية، والقوانين و اللوائح التي تنظم عمليات التبرع، وتوضيح العقوبات الجنائية لعمليات التجارة في الأعضاء و حكمها في الدين ، و تسجيل بيانات المتبرع ، وعرض الحالات التي ساهم النظام في شفائها.

```
<br /><br />
</td>
</tr>
</table></td>
<td width="34%" align="right" valign="top" style="padding-left:50px;
padding-top: 20px;"><img src="images/index_47.gif" width="100" height="96" alt=""
/></td>
</tr>
</table></td>
</tr>
</table></td>
<td width="256" align="left" valign="top"><table width="256" border="0"
cellspacing="0" cellpadding="0">
<tr>
<td align="left" valign="top"><table width="256" border="0"
cellpadding="0" cellspacing="0" bgcolor="#F2F2F2">
```

```
<tr>

<td align="left" valign="top"><table width="100%" border="0"
cellspacing="0" cellpadding="0">

<tr>

<td width="12" align="left" valign="top"><img
src="images/index_56.gif" width="12" height="32" alt="" /></td>

<td align="right" valign="top" class="heading" style="background-
image:url(images/index_59.gif); padding-top:8px; padding-left:7px;">
```

تسجيل الدخول

```
</td>

<td width="12" align="left" valign="top"><img
src="images/index_60.gif" width="12" height="32" alt="" /></td>

</tr>

</table></td>

</tr>

<tr>

<td align="left" valign="top" style="padding-left:14px; padding-
right:20px;"><table width="100%" border="0" cellspacing="0" cellpadding="0">

<tr>

<td align="left" valign="top" style="padding-top:25px;" class="text">

</td>

</tr>

<tr>

<td align="right" valign="top" style="padding-top:22px;"><table
width="100%" border="0" cellspacing="0" cellpadding="0">
```

```
<!-- log in-->

<tr>

</tr>

<tr>

<td align="right" valign="top" style="padding-top:15px;" class="text">

<form id="form1" name="form1" method="post"
action="sign.php" style="margin:auto;">

<table width="100%" border="0" align="right" cellpadding="0"
cellspacing="0" class="border">

<tr>

<td  colspan="2" align="right" valign="top" style="padding-
bottom:2px;">

<input type="text" name="username" style=";
height:23px;" /></td>

<td  align="right" class="heading" valign="middle"><span
style="color:#737373;">اسم المستخدم</span></td>

</tr>

<tr>

<td colspan="2" align="right" valign="top" style="padding-top:2px;
padding-bottom:2px;">

<input type="password" name="password"
```

```
style=" height:23px;" /></td>

            <td align="right" valign="middle" class="heading"><span
style="color:#737373;">كلمة السر</span></td>



                                    </tr>



                                    <tr>

                <td colspan="3" align="center" valign="top" style="padding-top:2px;
padding-bottom:2px;">

                                        <input type="submit" value="دخول"  /></td>

                 </table></td>

                </tr>

               </table></td>

              </tr>

              <tr>

               <td align="left" valign="top" style="padding-top:30px; padding-
bottom:20px;"></td>

              </tr>

             </table></td>

            </tr>

           </table></td>

         </tr>

       </table></td>

     </tr>
```

```
  <tr>

   <td align="left" valign="top"><table width="723" border="0" align="center"
cellpadding="0" cellspacing="0">

     <tr>

      <td width="13" align="left" valign="top"><img src="images/index_87.gif"
width="13" height="62" alt="" /></td>

      <td align="left" valign="top" style="background-image:url(images/index_88.gif);
background-repeat:repeat-x;"><table width="100%" border="0" cellspacing="0"
cellpadding="0">

        <tr>

          <td align="center" valign="middle"><pre class="footer"><a
href="index.html">الرئيسية</a>  ::  <a href="reg.html">التسجيل</a>  ::  <a
href="donor.html">المتبرعين</a>  ::  <a href="patient.html">المرضى </a>  ::  <a
href="viewc.php">مراكز التبرع</a>  ::  <a href="call.html">اتصل بنا</a></pre></td>

        </tr>

        <tr>

          <td align="center" valign="middle" class="copyright"><span style="text-
align:center;">Copyright &copy; 2015-2016

                        </td>

        </tr>

      </table></td>

      <td width="15" align="right" valign="top"><img src="images/index_91.gif"
width="15" height="62" alt="" /></td>

     </tr>

   </table></td>

  </tr>

</table>

</body>
```

```
</html>
```

Sign in patient

```
<?php
        session_start();


        $con = mysql_connect("localhost", "root","");
        if(!$con) {
                die('Failed to connect to the server: ' . mysql_error());
        }
        $db = mysql_select_db('giving');
        if(!$db) {
                die("Unable to find database");
        }



        $uid = $_POST['np'];
        $p = $_POST['pp'];

        $qry="SELECT * FROM patient WHERE P_ID='$uid' AND P_Password='$p'";
        $result=mysql_query($qry,$con);



        if($result) {
                if(mysql_num_rows($result) == 1) {
```

```
                    $_SESSION['username']=$uid;
        $_SESSION['password']=$p;
                    header("location:controlp.html");}
                    else{
                    header("location:patient.html");}

            }
        else {
            die("Query failed");
        }
?>
```

View patient

```
<table width="723" border="0" align="center" cellpadding="0" cellspacing="10">

            <tr>
            <td align="right" colspan="4"style="padding-top:27px;">
                <fieldset>
            <table  align="center">

            <tr >
        <th style="border: 1px dotted black ;  ">اسم المستخدم </th>
        <th style="border: 1px dotted black; ">كلمة السر</th>
```

```
<th style="border: 1px dotted black; ">الاسم</th>
<th style="border: 1px dotted black; "> العمر </th>
<th style="border: 1px dotted black; ">التليفون</th>
<th style="border: 1px dotted black; ">العنوان</th>
<th style="border: 1px dotted black; ">المدينة</th>
        <th style="border: 1px dotted black; ">التاريخ الطبي</th>
        <th style="border: 1px dotted black; ">الحالة</th>
<th style="border: 1px dotted black; ">اسم العضو     </th>
        </tr>
        <?php
        $con = mysql_connect("localhost", "root","");
if(!$con) {
        die('Failed to connect to the server: ' . mysql_error());
}
$db = mysql_select_db('giving');
if(!$db) {
        die("Unable to find database");
}
        if(isset($_SESSION['username'])){
        //echo $_SESSION['username'];
        $pu=$_SESSION['username'];
$pp=$_SESSION['password'];
$qry="SELECT * FROM patient ";
$result=mysql_query($qry,$con);
echo"<legend>بيانات المرضى</legend>";
```

```
        while($row = mysql_fetch_array($result))

        {


        echo "<tr><td style='border: 1px dotted black;'>".$row['P_ID']."</td><td
style='border: 1px dotted black;'>".$row['P_password']."</td><td style='border: 1px
dotted black;'>".$row['P_name']."</td><td style='border: 1px dotted
black;'>".$row['p_age']."</td><td style='border: 1px dotted
black;'>".$row['P_phone']."</td><td style='border: 1px dotted
black;'>".$row['P_address']."</td><td style='border: 1px dotted
black;'>".$row['P_city']."</td><td style='border: 1px dotted
black;'>".$row['P_medical']."</td><td style='border: 1px dotted
black;'>".$row['P_statues']."</td><td style='border: 1px dotted
black;'>".$row['O_name']."</td></tr>";

        }

        }

                ?>



                </td>

                </fieldset>

                </tr>









</table>

        </td>

        </tr>
```

```
                <tr>
                <td><br><a href='controla.html'>الخلف</a></td>
                </tr>
                <!-- four row       -->
                <!--   footer     -->
                <tr>
  <td align="left" valign="top">
```

Register patient

```
<?php


        $con = mysql_connect("localhost", "root","");
        if(!$con) {
                die('Failed to connect to my server: ' . mysql_error());
        }
        $db = mysql_select_db('giving');
        if(!$db) {
                die("Unable to find database");
        }


        $medicalh = $_POST['mhp'];
```

```
$userid = $_POST['unp'];

$password = $_POST['pp'];

$name = $_POST['np'];

$age = $_POST['agep'];

$address = $_POST['addp'];

$city = $_POST['cp'];

$tel = $_POST['telp'];

$org = $_POST['organ'];

$sts = $_POST['sp'];

$q="insert into
patient(p_ID,p_name,p_statues,p_age,p_phone,p_address,p_city,p_password,p_medical,
O_name)
values('$userid','$name','$sts','$age','$tel','$address','$city','$password','$medicalh','$org
')";




$r=mysql_query($q,$con);




if($r ) {

die("<meta http-equiv='refresh' content=0;URL='controlp.html?errmsg=1' />");


                    }

                    else{

                die("error".mysql_error());
```

```
        }


?>
```

Update patient

```
<?php



    $con = mysql_connect("localhost", "root","");
    if(!$con) {
        die('Failed to connect to my server: ' . mysql_error());
    }
    $db = mysql_select_db('giving');
    if(!$db) {
        die("Unable to find database");
    }


    if(isset($_SESSION['username']))
    {
    $medicalh = $_POST['mhp'];
    $userid = $_POST['unp'];
    $password = $_POST['pp'];
    $name = $_POST['np'];
    $age = $_POST['agep'];
```

```
        $address = $_POST['addp'];

        $city = $_POST['cp'];

        $tel = $_POST['telp'];

        $org = $_POST['organ'];

        $sts = $_POST['sp'];

        $pu=$_SESSION['username'];

        //echo $pu;

        $q="select * from patient where P_ID='$pu'";

        $result=mysql_query($q,$con);

        }

while ($row=mysql_fetch_array($result))

{




        $q1="update patient set
p_ID='$userid',p_name='$name',p_statues='$sts',p_age='$age',p_phone='$tel',p_addre
ss='$address',p_city='$city',p_password='$password',p_medical='$medicalh',O_name='
$org'  where P_ID='$pu'";




        $r=mysql_query($q1,$con);




}

        if($r ) {

die("<meta http-equiv='refresh' content=0;URL='controlp.html?errmsg=1' />");
```

```
                    }
                    else{
                die("error".mysql_error());
            }

?>
```

Delete patient

```
<?php
            $con = mysql_connect("localhost", "root","");
    if(!$con) {
            die('Failed to connect to the server: ' . mysql_error());
    }
    $db = mysql_select_db('giving');
    if(!$db) {
            die("Unable to find database");
    }
            if(isset($_SESSION['username'])){
            //echo $_SESSION['username'];
            $pu=$_SESSION['username'];
    $pp=$_SESSION['password'];
    $qry="delete FROM patient WHERE P_ID= '$pu' AND P_Password='$pp'";
    $result=mysql_query($qry,$con);
```

```
if($result)
{
echo"<legend><h1>".$pu."</h1></legend>";
echo "<h3>  تم حذف الحساب بنجاح</h3>";
}
}
        ?>
```

Chapter Seven

TESTING

7.1 UNITTESTING:

Incremental Integration Testing:

First: Test (component A)

Component A

1. Admin log in.

Implement test case: Admin log in [Test Case #:1] discussed later.

Second: Test (component A with component B)

Component B

2. Create Donor Account.

Implement test case: donor Account [Test Case #:2] discussed later.

Third: Test (component A + component B with component C) Component c

3. Create patient Account.

Implement test case: patient Account. [Test Case #:3] discussed later.

Fourth: Test (component A + component B + component C with component D)
Component D

4. Create organ center

Implement test case: Add organ center. [Test Case #:4] discussed later.

Fifth: Test (component A + component B + component C + component D with component E) Component E

5. Matching organs and patient

Implement test case: Matching organs and patient
[Test Case #:5] discussed later.

Sixth: Test (component A + component B + component C + component D +component E with component F)

Component F

6. Manage donor profile

Implement test case: manage donor profile [Test Case #:6] discussed later.

Seventh: Test (component A + component B + component C + component D +component E + component F with component G)

Component G

7. Manage patient profile

Implement test case: Manage patient profile [Test Case #:7] discussed later.

Eighth: Test (component A + component B + component C + component D +component E + component F + component G with component H)

Component H

8. Donate organ...

Implement test case: donate organ. [Test Case #:8] discussed later.

Nine: Test (component A + component B + component C + component D +component E + component F + component G + component H with component I)

Component I

9. Create Strategy1...

Implement test case: Strategy1. [Test Case #:9] discussed later.

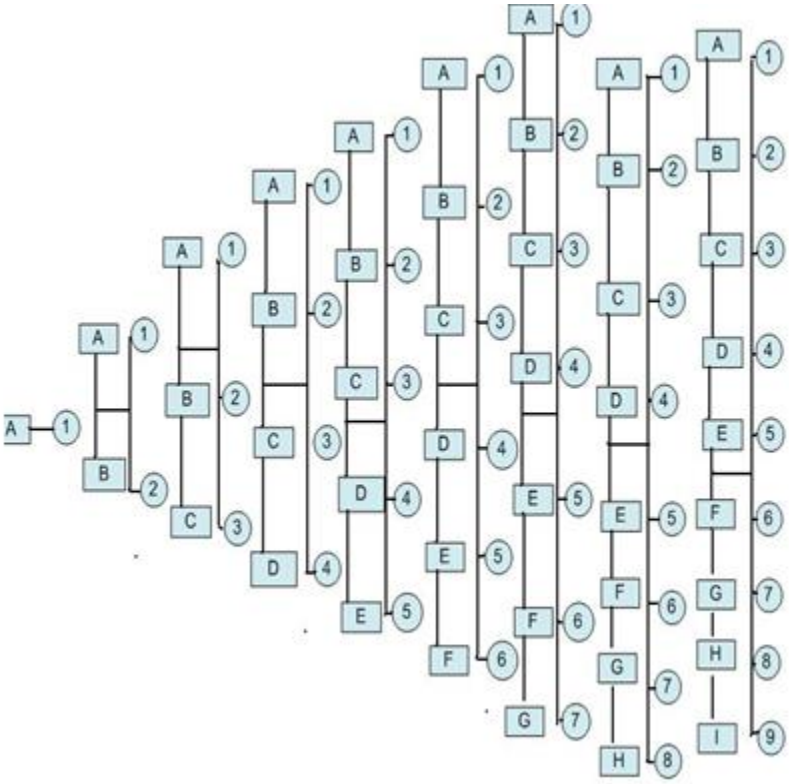


FIGURE7. 1 COMPONENT TEST

7.2. INTEGRATION AND REGRESSION TESTING:

Integration Testing is about combining and linking all the individual functions together as a group, and then testing the functionality of the group.
Our site contains 9 primary functions. To perform integration testing effectively on these functions, we first conducted Unit Testing on every single function. After testing each function, we started to link the pages together one by one. At first we linked two functions and performed the test, and then we added a third function and performed the test again. We repeated those steps until reaching the 11th function, the purpose of this move is for us to be able to locate the error specifically in case one occurs.
Regression Testing is performed whenever a function of the software is modified or changed for any reason. It is used to insure that the changes did not impact any other existing function and did not introduce new errors or bugs to the software.
To apply the concept of regression testing on our site, we tested the whole site each time we change or modify a function.

7.3. USER ACCEPTANCE TESTING:

The purpose of acceptance testing is to confirm that the system is ready for operational use. During acceptance test, end-users (customers) of the system compare the system to its initial requirements. (*We've given each user a consent form. Check the appendix A for further info*)

7.3.1. **Student:**

We've applied this test on **5** students.

Test Case ID	Date Tested	Tester	Pass/Fail	Severity of Defect(0-5)	Summary of Defect	Closed prior to Production Release?	Comments
1	1/12/2015	Afaf	pass	0	No defect	Yes	
2	1/12/2015	Haifa	pass	1	Registration not available	Yes	
3	1/12/2015	Sara	pass	2	Information about patient	No	Must log in as admin This secret information.
4	1/12/2015	Hesa	Fail	4	Problem in work links	Yes	
5	1/12/2015	Asmaa	Pass	1	Send email	Yes	

Table 7. 1 user accepting test

7.4. **TEST CASES:**

7.4.1. **Log in:**

Function : log in to the site.
Description: Test the ability of the members to log in
Test Input Data: user name, password

Purpose: Login for admin.

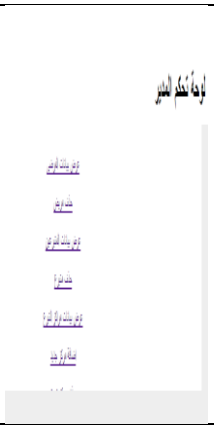
	Step	Action	Input	Expected output	Actual output	Pass/fail
Log in	1	Fill	User name (aaa) Password (111)	Admin control window		Pass
	2	Click login button				

Table 7. 2 test log in for admin

Log in for donor

	Step	Action	Input	Expected output	Actual output	Pass/fail
Log in	1	Fill	User name (ddd) Password (222)	Donor control window		Pass
	2	Click login button				

Table 7. 3 test log in for donor

Log in for patient

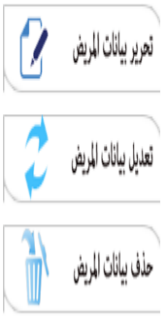
	Step	Action	Input	Expected output	Actual output	Pass/fail
Log in	1	Fill	User name (pat) Password (1)	Patient control window		Pass
	2	Click login button				

Table 7. 4 test log in for patient

7.4.2. Manage donor- Patient – Organ Center:

- **View donor:**

Function: view donor.
Description: Test the ability of the admin to view all donors in site.
Test Input Data: user name, password

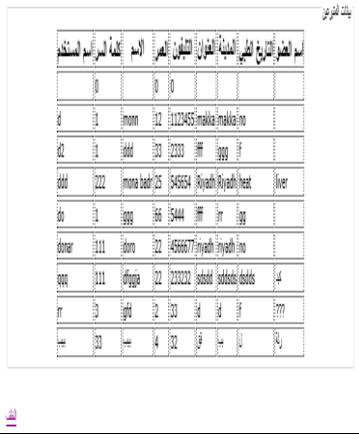
	Step	Action	Input	Expected output	Actual output	Pass/fail
View donor	1	Fill	User name (aaa) Password (111)	Donor information		Pass
	2	Click login button				
	3	Click view donor				

Table 7. 5 test for view donor

- **Delete donor:**

Function: delete donor.
Description: Test the ability of the admin to delete specific donor from site.
Test Input Data: user name, password, telephone of donor.

	Step	Action	Input	Expected output	Actual output	Pass/fail
delete donor	1	Fill	User name (aaa) Password (111) Phone	Delete donor information		Pass
	2	Click login button				
	3	Click delete donor				

Table 7. 6 test for delete donor

- **View Patient:**

Function: view patient.
Description: Test the ability of the admin to view all Patients in site.
Test Input Data: user name, password

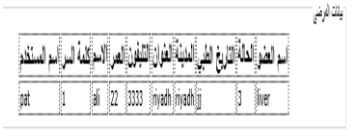
	Step	Action	Input	Expected output	Actual output	Pass/fail
View patient	1	Fill	User name (aaa) Password (111)	patient information		Pass
	2	Click login button				
	3	Click view patient				

Table 7. 7 test for view patient

- **Delete Patient:**

Function: delete donor.
Description: Test the ability of the admin to delete specific patient from site.
Test Input Data: user name, password, telephone of patient.

	Step	Action	Input	Expected output	Actual output	Pass/fail
delete patient	1	Fill	User name (aaa) Password (111) Phone	Delete information		Pass
	2	Click login button				
	3	Click delete patient				

Table 7. 8 test for delete patient

- **View organ center:**

Function: view organ center.
Description: Test the ability of the admin to view all center in site.
Test Input Data: user name, password

	Step	Action	Input	Expected output	Actual output	Pass/fail
View organ center	1	Fill	User name (aaa) Password (111)	Center information		Pass
	2	Click login button				
	3	Click view patient				

Table 7. 9 test for view organ

- **Delete organ center:**

Function: delete organ center.
Description: Test the ability of the admin to delete specific organ center from site.
Test Input Data: user name, password, telephone of organ center.

	Step	Action	Input	Expected output	Actual output	Pass/fail
delete center	1	Fill	User name (aaa) Password (111) Phone(1111)	Delete organ center		Pass
	2	Click login button				
	3	Click delete center				

Table 7. 10 test for delete organ

- **Add organ center:**

Function: Add organ center.
Description: Test the ability of the admin to Add specific organ center to site.
Test Input Data: user name, password, telephone of organ center, ID, Address.

	Step	Action	Input	Expected output	Actual output	Pass/fail
Add center	1	Fill	name address Phone	Add organ center		Pass
	2	Click Add button				

Table 7. 11 test for Add organ

7.4.3. Donor:

Create Donor account:

Function: Add donor.
Description: Test the ability of the donor to create account in site.
Test Input Data: user name, password, telephone of organ name, ID, Address, name, age..

	Step	Action	Input	Expected output	Actual output	Pass/fail
Add donor	1	Fill	name address Phone user name password age organ name	Add donor		Pass
	2	Click Add button				

Table 7. 12 test for add donor

- **Edit donor:**

Function: view donor.
Description: Test the ability of the donor to view his information in site.
Test Input Data: user name, password

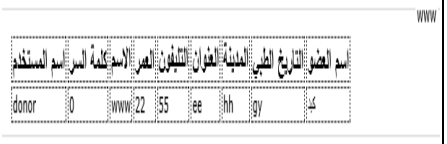
	Step	Action	Input	Expected output	Actual output	Pass/fail
view donor	1	Fill	user name password	Add donor		Pass
	2	Click edit button				

Table 7. 13 test for view donor

- **Delete donor:**

Function: delete donor.
Description: Test the ability of the donor to delete yourself from site.
Test Input Data: user name, password.

	Step	Action	Input	Expected output	Actual output	Pass/fail
delete donor	1	Fill	User name Password	Delete information		Pass
	2	Click login button				
	3	Click delete patient				

Table 7. 14 test for delete donor

7.4.3. Patient:

Create patient account:

Function: Add patient.
Description: Test the ability of the patient to create account in site.
Test Input Data: user name, password, telephone of organ name, ID, Address, name, age..

	Step	Action	Input	Expected output	Actual output	Pass/fail
Add patient	1	Fill	name address Phone user name password age organ name	Add patient		Pass
	2	Click Add button				

Table 7. 15 test for add patient

- **Edit patient:**

Function: view patient.
Description: Test the ability of the patient to view his information in site.
Test Input Data: user name, password

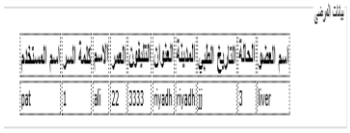
	Step	Action	Input	Expected output	Actual output	Pass/fail
View patient	1	Fill	User name Password	patient information		Pass
	2	Click login button				
	3	edit patient				

Table 7. 16 test for view patient

- **Delete patient:**

Function: delete patient.
Description: Test the ability of the patient to delete yourself from site.
Test Input Data: user name, password.

	Step	Action	Input	Expected output	Actual output	Pass/fail
delete patient	1	Fill	User name Password	Delete information		Pass
	2	Click login button				
	3	Click delete patient				

Table 7. 15 test for delete patient

Chapter Eight

CONCLUSION

Nowadays, a lot of people are communicating over the internet through many social networks to share different interests in an easy and efficient way. Some of those people are donor and patient want share files and communicate. That's why we developed **giving** offers many services for patient and donor which will impact them locally and globally. At a local level , it tends to serve donor and patient at Riyadh .

We can conclude the local impact of our site in the following points:

- Rather than having a weekly meeting between the supervisor and her students, which sometimes can be canceled due to the time conflicts or under some circumstances, these meeting can be rescheduled to be online. Which will save their time and provide more flexibility for their meetings?
- **Giving** provide special tools to the coordinator , allowing her to use a user-friendly calendar to post important events , communicate with donor and patient through private messages instead of emails .

We are considering some extra work regarding our project that need to be done at the future, such as:

- Improving the evaluation form of supervisors by making it more flexible and helpful.
- Adding some advanced options to our site's search function.
- Expanding the functions of Private messages to involve not only the donor and patient , but also between the patient and their admin and between each other as well.
- **Giving** performance need to upgraded either by switching to a better server or using some advanced technologies.
- Email notifications can be a good and important feature to be added to **Giving** at the future.

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APPENDEX

APPENDIX A: Test Report Approval

The undersigned acknowledge they have reviewed the Giving t**est Report** and agree with the approach it presents. Changes to this **Test Report** will be coordinated with and approved by the undersigned or their designated representatives.

Signature: _____ Date: _____

Print Name: _____

Title: _____

Role: _____