

SMART THERAPY



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Chapter1

Planning

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Section 1:

PROJECT OVERVIEW

1.1) Project Description:

It' S *an online system that helps users to find their medicine easily wherever they are, because that system locates the nearest pharmacies that have delivery service, it also enables the user to enter the data base of each of these pharmacies and look for any medicine or product he or she wants and finally it also provides a special feature which enables its users to communicate with specialized doctors to ask them about their illness or for any diagnosis*

1.2) Project scope:

First project Includes:

- 1. locates the nearest pharmacies***
- 2. View pharmacies medicine database***
- 3. communicate with specialized doctors***
- 4. Know the number of ambulances in the nearest hospitals***
- 5. Delivering medicine to customers***
- 6. Live location to track the delivery***
- 7. Customer service in the system***
- 8. A record of drugs bought by the user***
- 9. A reminder for drugs time***
- 10. A record for daily blood pressure measurement***
- 11. A unique ID for every user***
- 12. monthly report about patient***
- 13. Submit complaints (About the system)***
- 14. Submit complaints (Patient pain)***
- 15. Takes feedback from the user (about the system)***
- 16. Takes feedback from the user (about the doctor)***
- 17. Inquire about bills & pay bill***
- 18. Collecting patient info at his medical record***
- 19. Selecting doctors***

Second Project Excludes:

- 1. Nursing services***
- 2. Accessing personal data of each patient***
- 3. Change medical staff through the treatment***
- 4. Taking an appointment without matching the queue***
- 5. Generating MR with serious reason***
- 6. change of the payment authorizations***

1.3) Assumptions:

1. Project need to enhance clinical pharmacist shortage that can help in healthcare practitioners trained to ensure medication-related assistance to hospital personnel and patients.

2. GPS to know the specific position of ambulance.

3. There is an assessment on every hospital and pharmacy.

1.4) Constrains:

There are some constraints for users who will use this system form clients (patient) or even from the employees (medical staff)

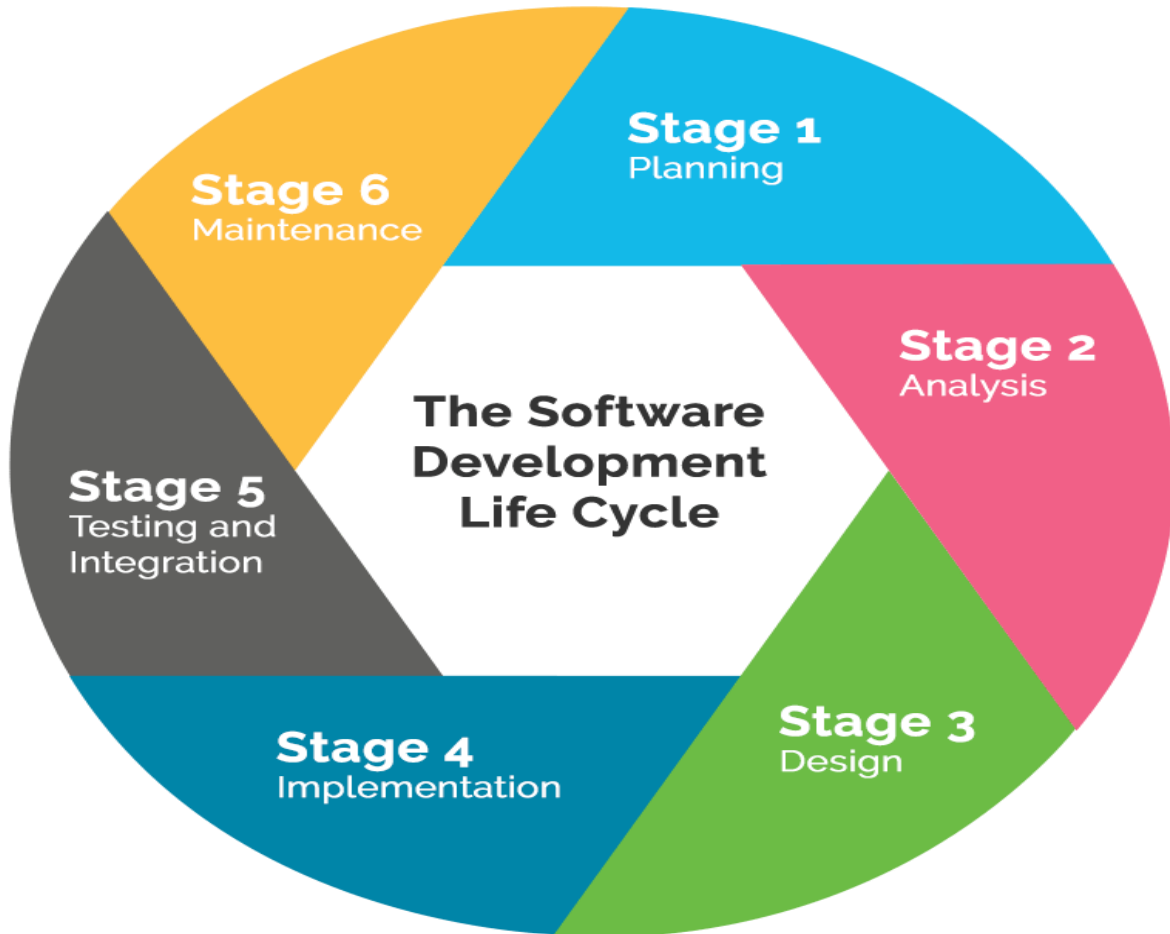
<ul style="list-style-type: none">• Clients (patient)	<ol style="list-style-type: none">1) People under age of 18 couldn't register.2) This system is only available for those who can afford it.3) Advertisement content issues4) Limitations from consumer's perception5) Product dosage form confusion6) Self-medication
<ul style="list-style-type: none">• The employees (medical staff)	<ol style="list-style-type: none">1) Database must be update regularly.2) No one could access all data except key persons3) Appointments timetable must be organized based on doctor's availability.

- 4) All required important data must be send to admin.**
- 5) No one can access patient medical records without a strong permission.**
- 6) The availability of information about every pharmacy all around the country and should be updated every period of time.**
- 7) Mis advertising and misbranding**

Section 2:

Project Start Up

2.1) Project Life cycle:



1. Planning Phase:

Initial phase of the SDLC process that sets out to discover, identify, and define the scope of the project to decide the course of action and specifically address the issues that are going to be solved by the new system solution. This crucial phase sets the tone for the overall

	<p>success of the project, which is why it is during this phase that thorough research is performed to determine resources, budget, personnel, technical aspects, and more.</p>
<p>2. Analysis Phase</p>	<p>The purpose of this phase is to understand the business and processing needs of the information system project. Here, the development team considers the functional requirements of the system to assess how the solution will meet the end user's expectations. The end user requirements are determined and documented, and a feasibility study is typically performed to determine if the project is feasible from a financial, organizational, social, and technological standpoint.</p>
<p>3. Design Phase:</p>	<p>After a comprehensive analysis phase, the design phase surfaces. In this third phase, the elements, components, security levels, modules, architecture, interfaces and data of the system are defined and designed to evaluate how the finished system will work and what it will look like. The system design</p>

	is produced in detail to ensure the system will include the necessary features to meet all functional and operational aspects of the project.
4. Implementation Phase:	After the system is given a green light from the QA team, it is brought into a production environment. In essence, during this phase, the project is released to be used and/or installed by end users
5. Testing & Integration Phase:	This phase involves the Quality Assurance (QA) team who is in charge of performing the overall system testing to determine if the system solution meets the set of business goals and if it performs as expected. Additionally, in this phase, all the different components and subsystems of the solution are brought together to bring the whole integrated system alive. As we've discussed in previous articles, testing is becoming increasingly important as it helps ensure customer satisfaction by establishing that the system is fault-free.

6. Maintenance

In this final phase, end users can fine tune the system as necessary to increase performance, add new features and capabilities, or meet new requirements brought to the table by the client. This phase ensures the system remains relevant and usable by replacing old hardware, improving the software, evaluating performance, and applying new updates to make sure meets all necessary standards and includes the latest technologies to face cyber security threats.

2.2) Methods, Tools and techniques:

The important element a huge database that collect data about pharmacies, hospitals and all the available ambulance of the hospitals. And using server to facilitation communication between doctors and patient when discuss in some syndrome using chatting or zoom meeting.

We should use **dart and flutter** and use **html, CSS and java script** as our programming

language, our repository in GitHub named smart theory,

use **android studio** and **visual studio** to build app and website.

Use **MySQL** to insert and modify our data.

The **internet** has been widely adopted for business and social communications.

In future,

as internet use becomes universal, there may be an increase in the number of internet

pharmacies, and use of the internet to display and disseminate information on medicines

and health from pharmacies.

Electronic prescribing (EP) systems automate prescribing, supply and administration of

medicines **in hospitals**, where they have been shown to reduce medication errors and

have a major impact on patient safety. However, the effect on error reduction is

dependent on system design and a poorly implemented system can **actually increase**

error rates.

2.3) Estimation methods and Estimates:

Description	Estimation		Most likely	Source of the estimation
	Best	Worst	Calculated from the formula: $(Best + Worst) / 2$	
Programmers Effort per week	6 tasks	2 tasks	4 tasks	IT department
Marketing staff effort per month	4 ads	2 ads	3 ads	Marketing department
Number of accounts Created on the System per week	100 accounts	50 accounts	75 accounts	IT department
Budget needed monthly	15000 pound	20000 pound	17500 pound	Finance department
Expected earning monthly	30000 pound	25000 pound	27500 pound	Finance department
Quality of service rate	100	50	75	Customers Or clients
Schedule in calendar	Have on system 50 doctors 500 accounts 20 pharmacies	Have on system 10 doctors 300 accounts 10 pharmacies	Have on system 30 doctors 400 accounts 15 pharmacies	Project manager

2.4)Economic Feasibility study:-

- Benefit per year = 360000 EGP
- recuring cost per year = 247500 EGP
- Discount rate = 9.75%
- one time cost = 38500 EGP -

	Year of project						
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Net economic benefit	0	360000	360000	360000	360000	360000	
Discount rate	1	0.5063	0.2563	0.1298	0.0657	0.0333	
PV of benefits	0	182268	92268	46728	23652	11988	
NPV of all benefits		182268	274536	321264	344916	356904	356904
One-time cost				38500			
Net economic cost	0	247500	247500	247500	247500	247500	
Discount rate	1	0.5063	0.2563	0.1298	0.0657	0.0333	
PV of cost	0	1253	63434.25	32125.5	16260.75	8241.75	
NPV of all cost	38500	163809.2	227243.5	259369	275629.75	283871.5	283871.5
Overall NPV				73032.5			
Overall Roi				0.2573			

System analysis project

Smart therapy

V 1.0

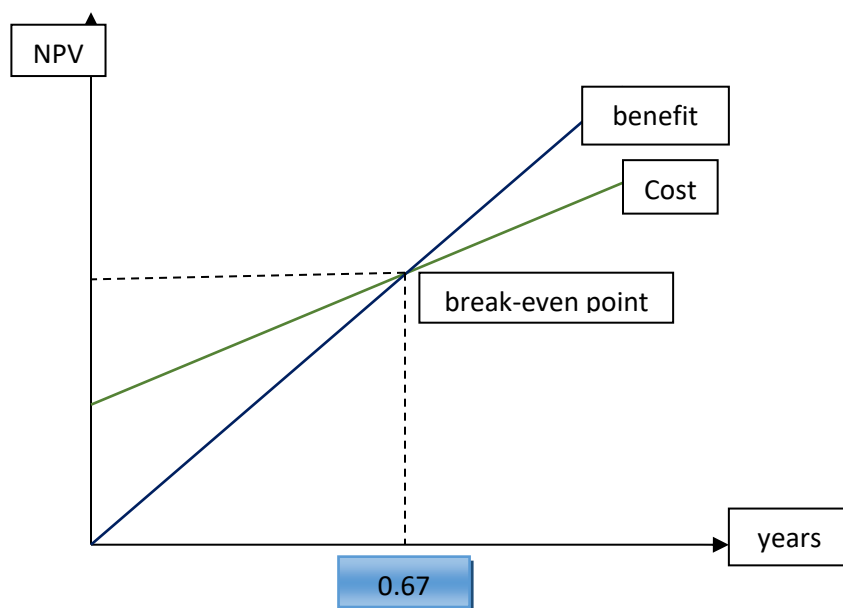
BFAI

revision date 4/19/2022

	Year of project					
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Yearly PV cash	(38500)	56958.75	28833.75	14602.5	7391.25	3746.25
Yearly overall NPV cash	(38500)	18458.75	47292.5	61895	69286.25	73032.5

Breakeven Point occurs at 0.67.

Actual break-even occurred at 0.67 year.



2.5) Resource Allocation:

➤ *Available budget is: 40000 pounds*

Resources	Price	Set Requirements	Timeframe: s-f
project designer	2000 <u>EGP</u>	create the visual elements that support the system and customer requirements	18-4-22 to 28-4-22 10 days
Database Developer	1500 <u>EGP</u>	design and implement database for the system.	18-4-22 to 25-4-22 7 days
Programmer	3000 <u>EGP</u>	Create, implement and develop the system – write and edit code	Every month
Database - administrator	5000 <u>EGP</u>	Installing and upgrading the database Servers and applications	Every month
Data base storage	2000 <u>EGP</u>	Capacity to save and store the database	One time cost
5 computers Or 5 laptops	30000 <u>EGP</u>	Test and run the project	One time cost
advertiser	5000 <u>EGP</u>	Advertising the project	30-4-22 to 20-5-22 3 weeks

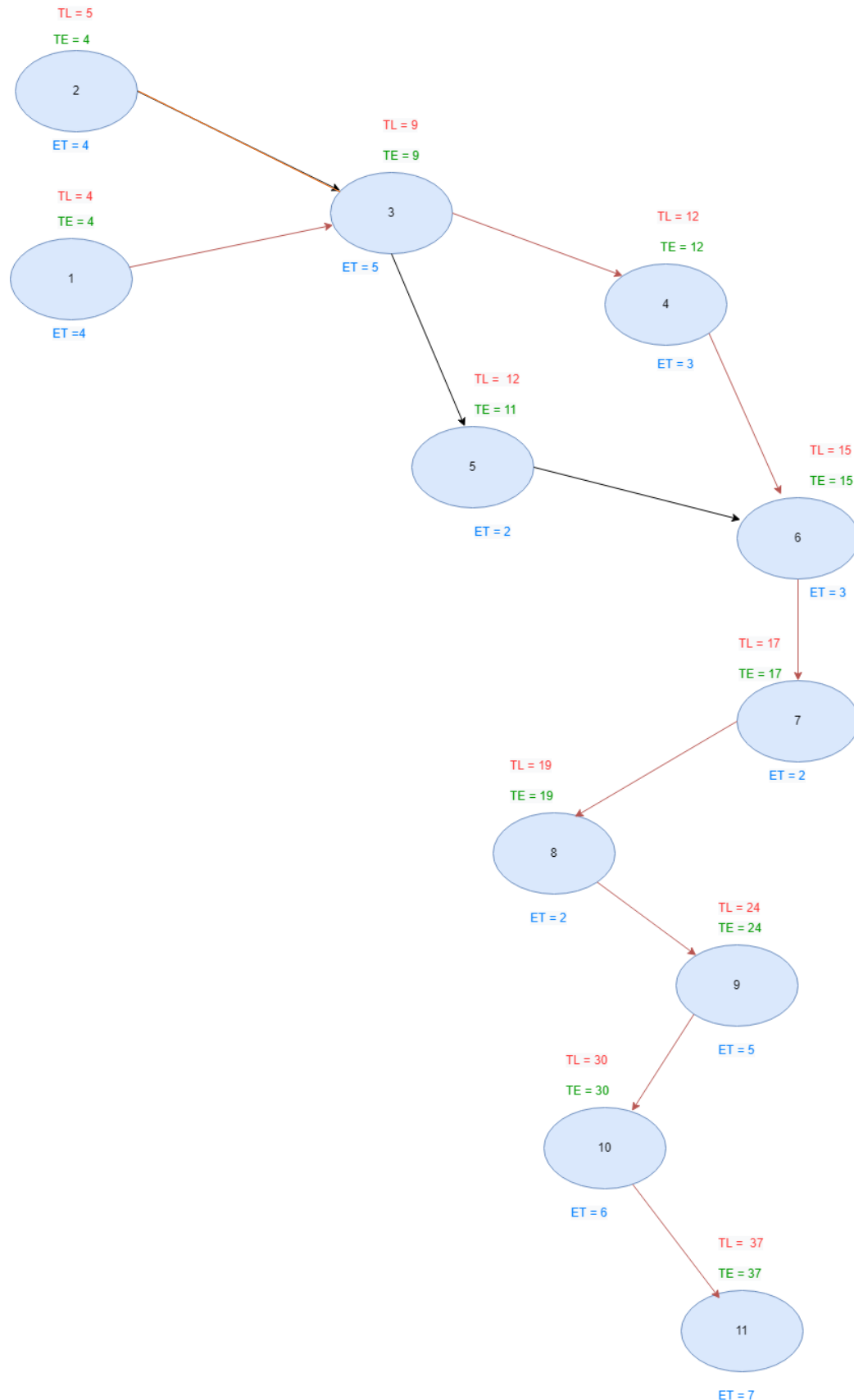
2.6) Budget Allocation:

Number	Budget Category	Budget Amount	Period of Time
1	Team members	10000 EGP	Monthly
2	Maintenance	4000 EGP	Monthly
3	Data Base License	5000 EGP	Yearly
4	Resources	3000 EGP	Monthly
5	Transport	1000 EGP	Monthly
6	System Censorship	4500 EGP	Yearly
7	Improvements of Tools	4000 EGP	Yearly
8	Announcements	1500 EGP	Monthly

2.4) Schedule Allocation:

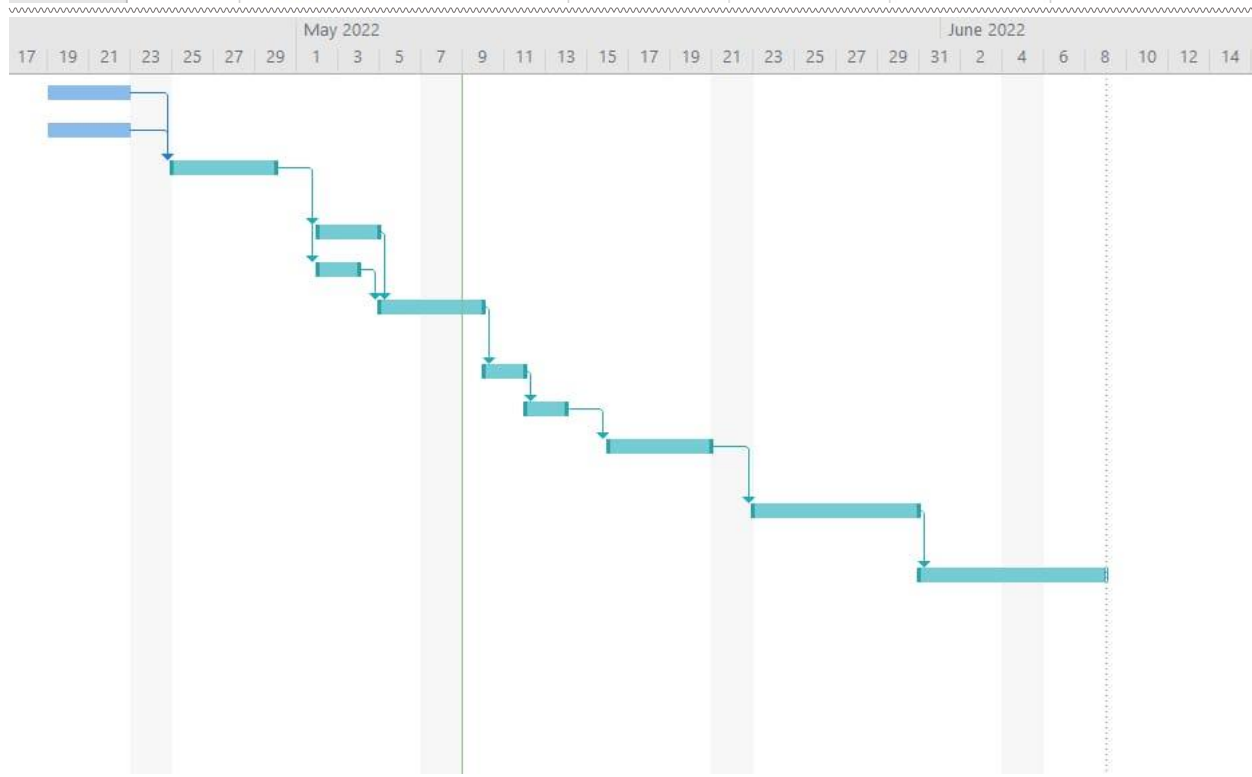
2.4.1- Network Diagram:

#	Tasks	Time in days				Critical Path	Pre step
		ET	TE	TL	slack		
<u>1</u>	Meetings with pharmacies	4	4	4	0	✓	---
<u>2</u>	Dealing with doctors	4	4	4	0	✓	---
<u>3</u>	Design the backend and The frontend of the app	5	9	9	0	✓	1,2
<u>4</u>	Programming	3	12	12	0	✓	3
<u>5</u>	Design the database	2	11	12	1		3
<u>6</u>	Connection between Database & the app	3	15	15	0	✓	4,5
<u>7</u>	Create the final product	2	17	17	0	✓	6
<u>8</u>	Implement and test	2	19	19	0	✓	7
<u>9</u>	Add pharmacies accounts And doctors accounts	5	24	24	0	✓	8
<u>10</u>	Release and make advertisement	6	30	30	0	✓	9
<u>11</u>	Take feedback then make Maintenance and optimizations	7	37	37	0	✓	10

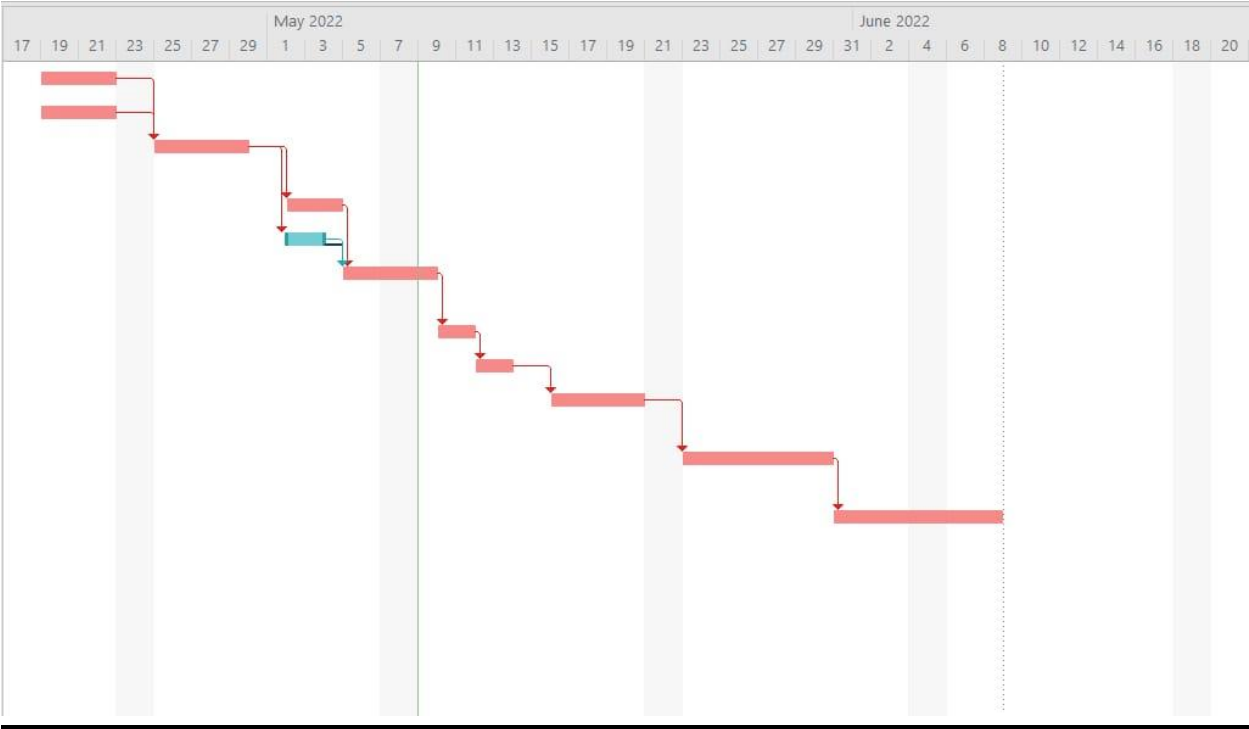


2.4.2- Chart Diagram:

	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		Meetings with pharmacies	4 days	Tue 4/19/22	Fri 4/22/22	
2		Dealing with doctors	4 days	Tue 4/19/22	Fri 4/22/22	
3		Design the backend and The frontend of the app	5 days	Mon 4/25/22	Fri 4/29/22	1,2
4		Programming	3 days	Mon 5/2/22	Wed 5/4/22	3
5		Design the database	2 days	Mon 5/2/22	Tue 5/3/22	3
6		Connection between Database & the app	3 days	Thu 5/5/22	Mon 5/9/22	4,5
7		Create the final product	2 days	Tue 5/10/22	Wed 5/11/22	6
8		Implement and test	2 days	Thu 5/12/22	Fri 5/13/22	7
9		Add pharmacies accounts And doctors accounts	5 days	Mon 5/16/22	Fri 5/20/22	8
10		Release and make advertisement	6 days	Mon 5/23/22	Mon 5/30/22	9
11		Take feedback then make Maintenance and optimizations	7 days	Tue 5/31/22	Wed 6/8/22	10



Critical Path



Section 3:

Risk Management

Risk Description	Probability	Impact	Strategy
Cost Estimates Unrealistic	Low	High	The cost is the important role in the project that mustn't change by the time Estimates Unrealistic high the project. (Good study to cost and benefits)
Time Estimates Unrealistic	Low	High	The project must be delivered in the specified time and delaying delivering the project may affect on the importance of the project.
Team Size	High	Medium	If one of the team leave working of the project this will delay the delivered time of the project.
Project Scope Creep	low	High	The scope of the project must review by the project manager to determine the scope of the project requested.
Team Members Unknowledgeable of Business	Medium	High	This effect of the project that does not achieve the requested.
Available documentation	Medium	Medium	The documentation help to make new project or to reengineering the project and it's very imported.
System failure	low	High	If the Number of users using the system at the same time Has risen more than expected that may cause system failure
Available 24 Hours of medical care	Medium	High	The system should be available 24 hours and provide alternative care in case of technology malfunction
All Doctors are busy	low	medium	In some health cases immediate Consulting should be provided to the Patient
Delay in delivering medicine	High	High	Due to traffic congestion at peak times, the delivery of medication to the patient may be delayed
The disease is not clearly described	Low	High	As the Doctor should inquire clearly about the illness in some cases it may be misunderstand
Available medical record	Medium	Medium	The interaction between patient and doctor using the telehealth monitoring technology should be recorded in the medical record of the patient.

Section 4:

Appendices

- ⇒ ***There will be a new feature downloaded on the application every month***
- ⇒ ***This application is made with the help of a specialized staff of doctors and pharmacists***
- ⇒ ***To make use all the features of that app you have to read 'project scope' part very carefully***

Chapter2

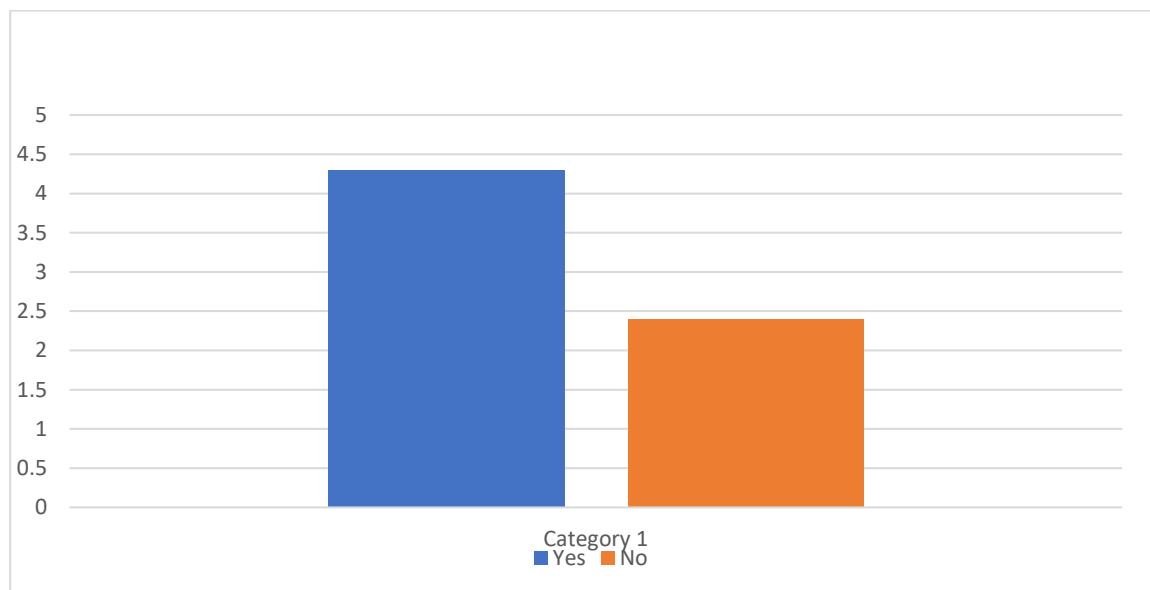
Analysis

Questionnaire

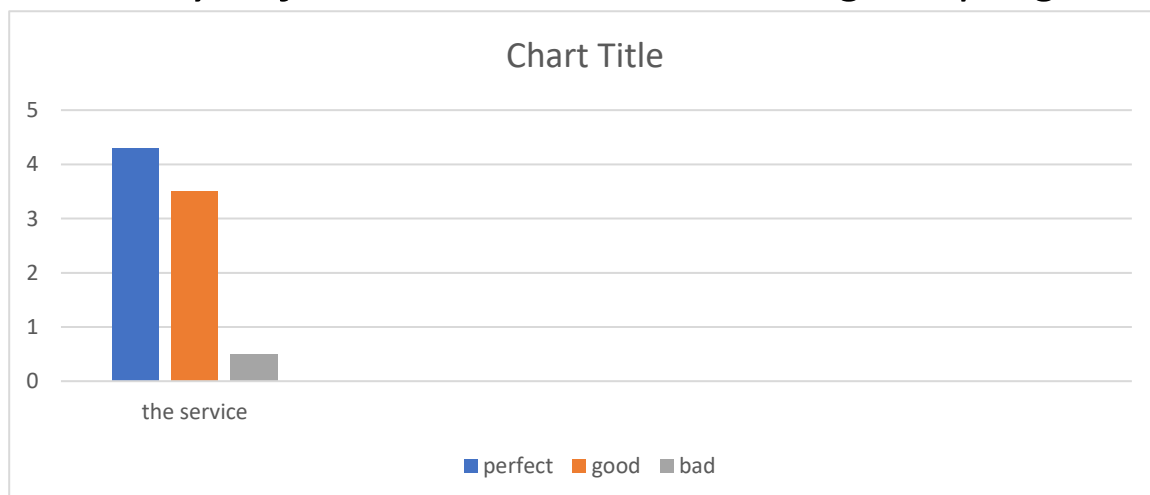
For whom: number of users

Date: 5 / 4 / 2022

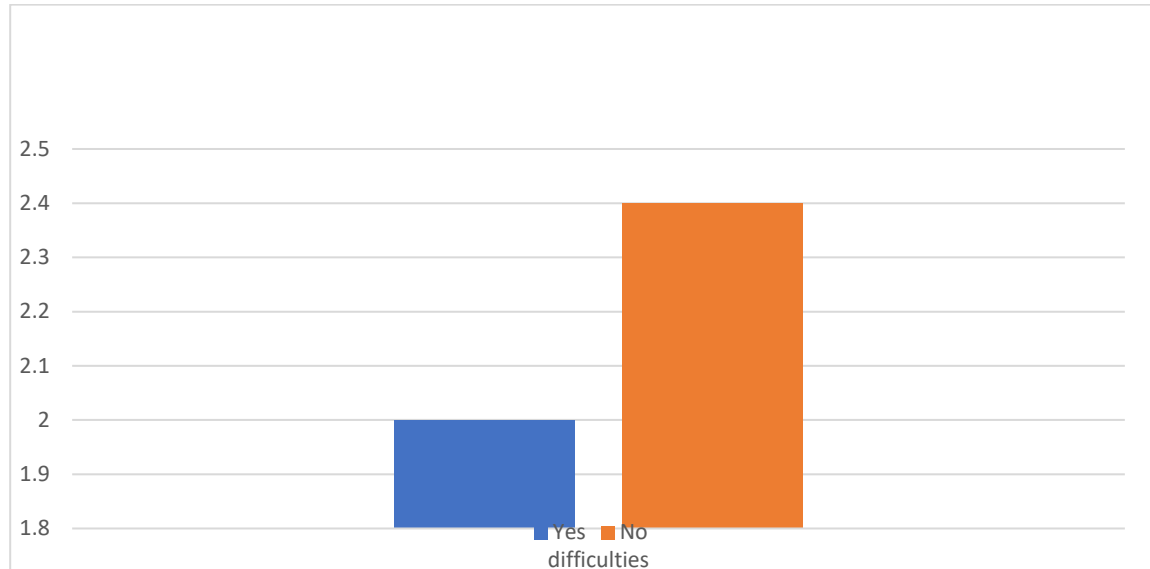
1) Did you choose the program as the primary means of diagnosing disease and obtaining the medicine?



2) How did you find the service while using the program?



3) Do you find it easy to use the program?



4) what would you want to change or add?

-Add more pharmacies and more payment methods.

• *What did we obtain from this Questionnaire?*

- 1) That we must update the program and make it easier to use.
- 2) Add more payment methods to make it easier for the users to pay.

Interview

Interviewee's Name: **Abdelrahman Rashawn** Date: **6/4/2022**

Position: **engineer**

Time: - **03:00 pm**

Position Location: **Cairo**

Interviewer: **Ahmed Mohamed**

1. Describe your experiences with the program

Answer: very useful program that help me to diagnosing a disease and knowing the best treat

2. Tell us how you can use the program?

Answer: the program is easy to use because there are thousands of diseases and its diagnoses, I can know what is my disease by search for the effects that I feel and knowing the best treat

3. Describe a task

Answer: order a medicine online and its delivers to my house

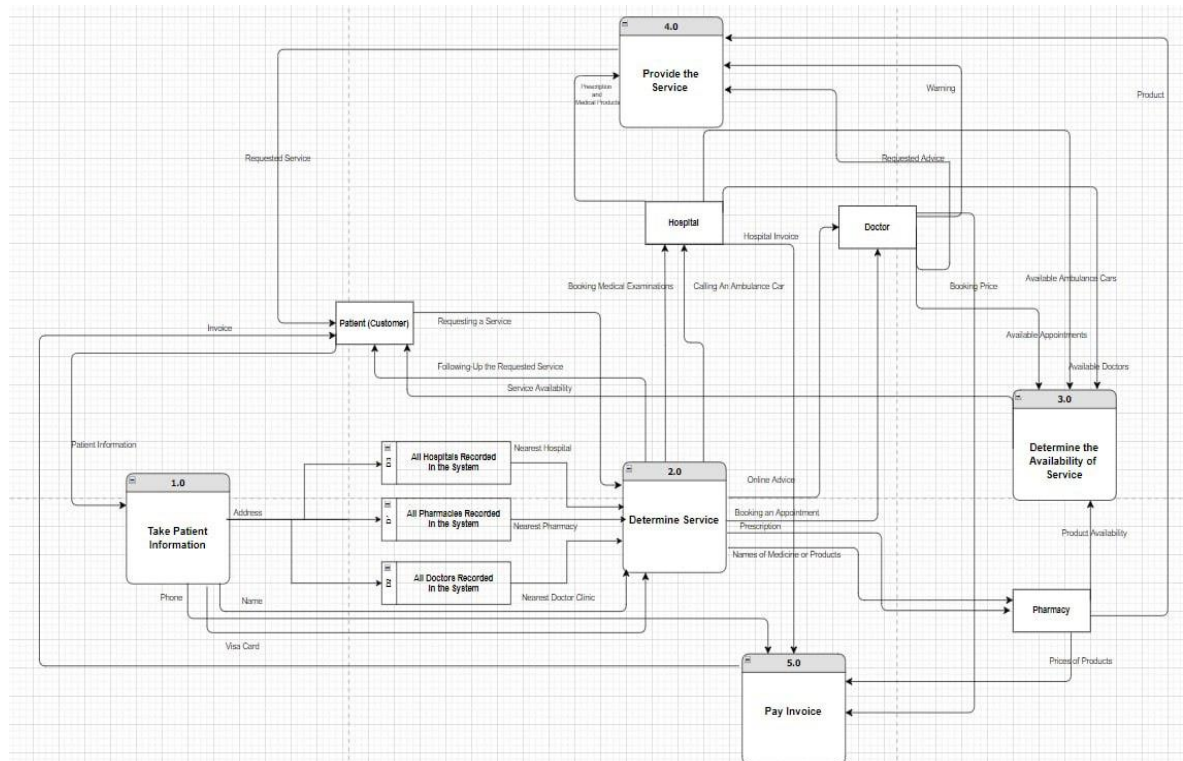
4. What are your expectations of the new system?

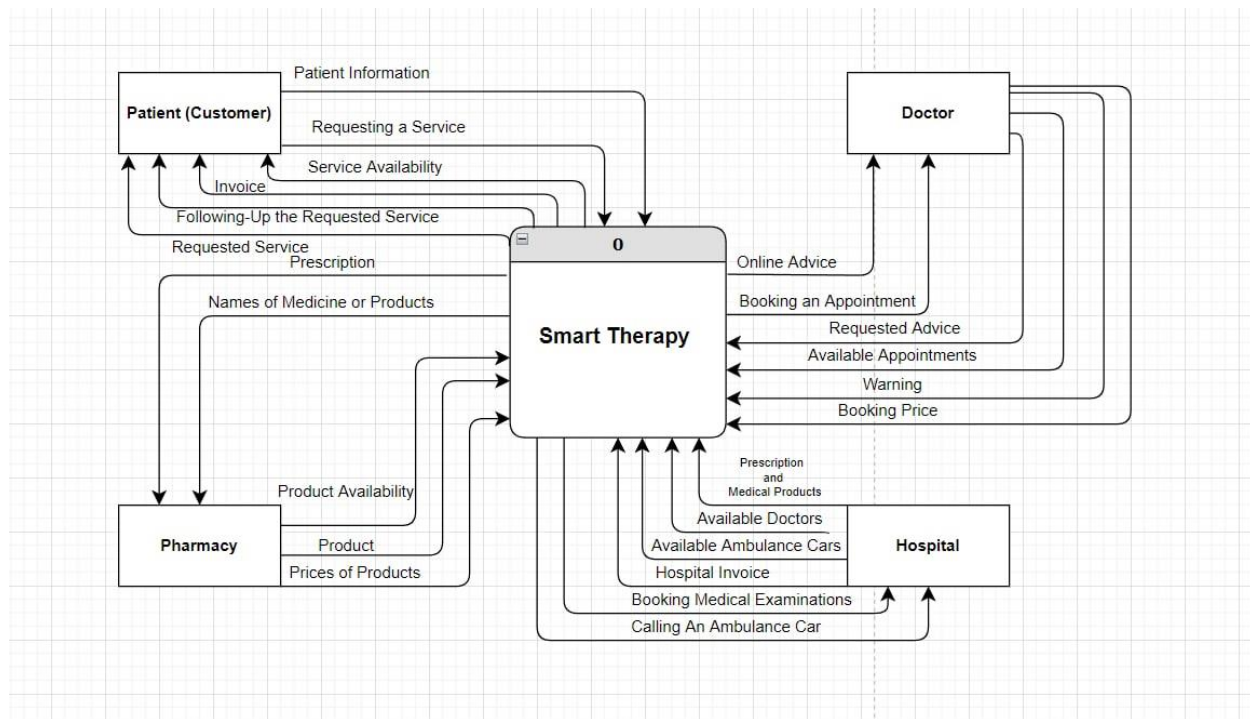
Answer: it will provide a new feature like you can consulting a doctor and booking a room at hospital

Chapter3

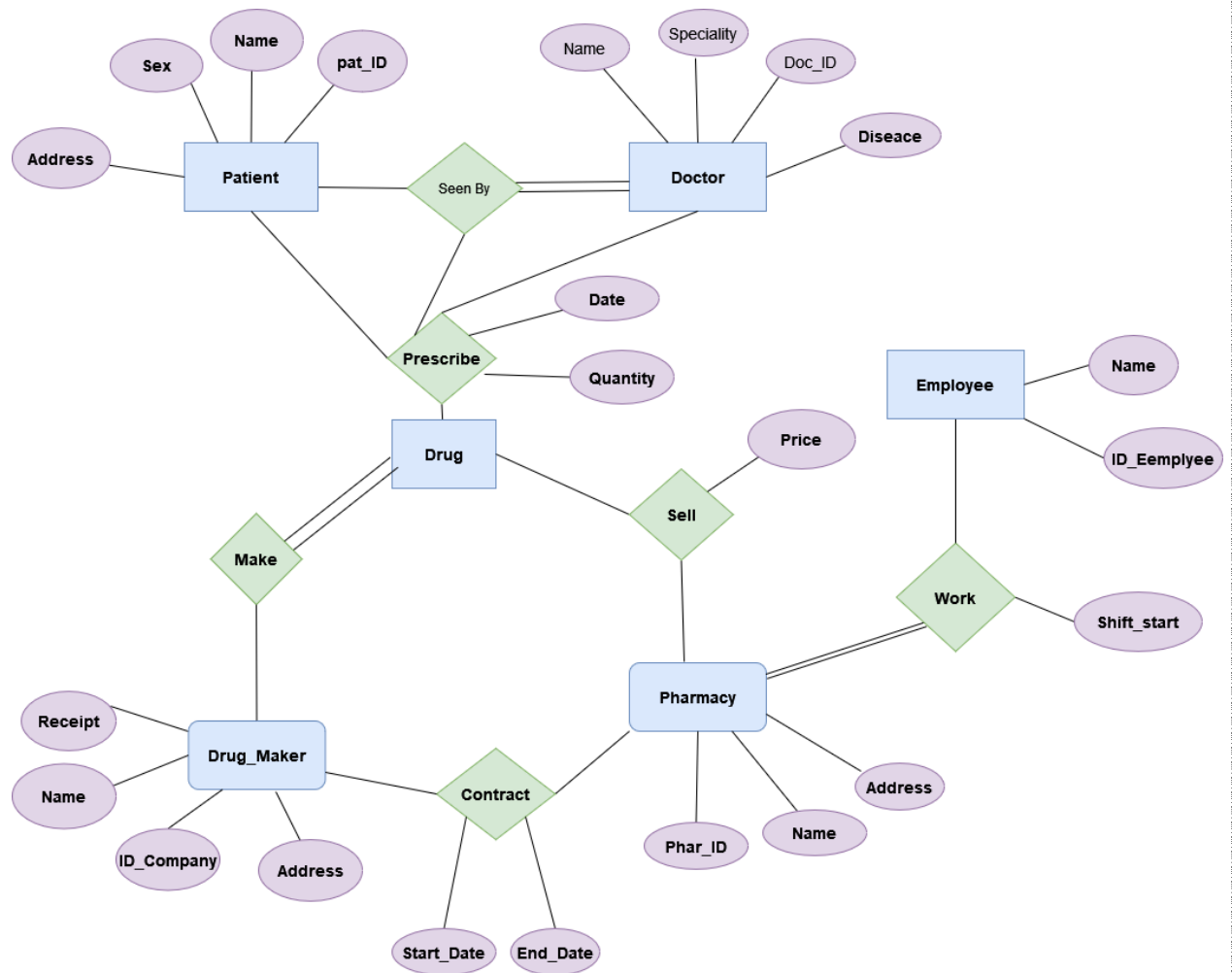
Design

1) DFD (Data Flow Diagram)





2)ERD (Entity Relationship Diagrams)



Mapping:

Patients

<u>Pat ID</u>	Name	Address	Gender	Disease
---------------	------	---------	--------	---------

Doctor

<u>Doc ID</u>	Name	Specialty
---------------	------	-----------

Drug Maker

<u>Drug ID</u>	Name	Address	Receipt
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Pharmacy

<u>Pha ID</u>	Name	Address
---------------	------	---------

Employee

<u>Emp ID</u>	Name
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