

# Chapter 2: Project “Planning and analysis”

- 2.1 Project planning
  - 2.1.1 Feasibility Study
    - Technology Considerations: Using the software and hardware available to us will enable us to develop a good, reliable project, launch it on multiple platforms, and make it easy to use by designing a good-looking, simple UI/UX.
    - Product or Service Marketplace: This is a novel concept with no competitors in the market, and as soon as it is implemented, it will spread to all dentists and students.
    - Financial Projections: For the users, it is totally free to use, while we will only spend a small amount of money to help us make the website online and available to all users.
    - Schedule: Our project is well scheduled, divided into a few chapters, and each chapter has its own tasks and deadlines.
  - 2.1.2 Estimated Cost
    - It's a low-budget project where we will only need money to buy or rent a server to upload the website and its database.
  - 2.1.3 Gantt Chart
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- 2.2 Analysis and Limitation of existing system Mention what are the main limitations of the current system. What are the things that making the current system operate slowly?
  - In the current system, students search for volunteers (patients) among their relatives, friends, or even strangers walking in the street, and if a student finds a patient with a case he doesn't need, he will just leave him and look for another one. This process wastes time, power, and valuable information from patients.
  - When students get exams, they sometimes need tools that are just too expensive for them to buy, and they just don't use them anymore after they finish the exams.
  - it's hard for clinics to find doctors to work for them or for a student to get training because there is no network or communication between them.
  - For patients, it's hard to find a good doctor near them to go to.
- 2.3 Need for the new system with evidence fully support why you have to migrate from the old system. What are the weaknesses of the old system that let you think it is a good idea to develop a new system?
  - The old system's weakness is that it is slow and unreliable, and there is no network or good communication between dentists or between dentists and patients; additionally, there is a lack of dentist ratings for patients to build trust between the doctor and the patient.

- 2.4 Analysis of the new system
  - 2.4.1 User requirements
    - The user can look up doctors or clinics where they can be examined.
    - The user will be able to rate the visit to the doctor and give feedback.
    - Based on patients' ratings and comments on their visits to the doctor, AI will be used to rate how good the doctor was.
    - The user (if a dentist) would be able to view tools to buy or rent.
    - The user can view if there are any clinics needing doctors to work or to get training.
    - The user (if a dentist), he can view patients with different cases and can contact them to examine them.
    - The user (if a dentist), he can share patient cases that he believes should be investigated.

System Requirements	
<b>Registration</b>	User shall enter his essential data like name, age and student card and pick a username and password for himself.
<b>Login</b>	User shall enter his username and password correctly for himself to enter the system.
<b>Portfolio</b>	Optional, user can full his portfolio and be available for other to see.
<b>List supplements (only for doctors and students)</b>	User click of supplements button and a list of all available supplements on the database will appear to him.
<b>Search for supplements (only for doctors and students)</b>	User enter the name of supplements that he/she looking for in a box and the result will appear.
<b>Add new supplements (only for doctors and students)</b>	User click on add button and enter supplement name, amount, its number and image of it.
<b>List job offers/training (only for doctors and students)</b>	User click on job/training button and a list of all available offers/trainings stored in database will appear to user.
<b>Browse for students</b>	Doctor shall click on button and all students in database will appear.

<b>List patients' cases</b>	Students click on cases button and a list of cases entered by students and doctors stored in database will appear.
<b>Search patients' cases</b>	Students enter the name of the diagnosis he/she looking for in a box and the result will appear.
<b>Add new case (only for doctors and students)</b>	User enter the patient name, phone number and his/her diagnosis.

<b>Domain Requirements</b>	
<b>Region</b>	The system shall cover at first (Cairo) and then covers all Egypt Universities.
<b>Users</b>	The system shall handle up to one thousand active users and up to ten thousand users.
<b>Categories</b>	The system should cover (dentistry universities students – patients – doctors).
<b>Storage</b>	The system shall handle 100GB of patients - doctor data.
<b>Platforms</b>	Any Desktop - Mobile

<b>Functional Requirements</b>	
<b>Registration</b>	User shall be able to create account for himself with his/her essential data.
<b>Login</b>	User shall be able to access to website and use its features after a successful login.
<b>Portfolio</b>	User should write his/her own portfolio.
<b>List supplements</b>	User shall be able to browse supplements available on website.
<b>Search for supplements</b>	User Shall be able to search for specific supplement by its name.
<b>Add new supplement</b>	User Shall be able to add new supplement.
<b>List job offers/training</b>	User shall be able to browse available job offers/trainings available on website.

<b>Add job offer/training</b>	Doctors shall be able to add a job offer or training.
<b>Browse for students</b>	Doctor shall be able to search for students available for jobs.
<b>Browse Patient cases</b>	Students shall be able to browse cases.
<b>Search Patient cases</b>	Students shall be able to search for case by its name.
<b>Add new case</b>	Students shall be able to add new case after being diagnosed.

<b>Non-Functional Requirements</b>	
<b>Speed</b>	<p>The user shall be easy to him to browse all the website in less than 5 minutes.</p> <p>The system shall show search results in less than 10 seconds.</p> <p>The system as whole shall be fast and generate pages fast.</p>
<b>Security</b>	<p>Access to data only by authorized users.</p> <p>Protection of data from any unauthorized users.</p> <p>Prevent unauthorized users from modifying/deleting data.</p> <p>Protection against attacks.</p>
<b>Reliability</b>	<p>Reduce of percentage of the probability of failure.</p> <p>The product shall be operating on average, 20 days without failure.</p> <p>Track time between critical failure.</p>
<b>Usability</b>	<p>The product shall be easy to use by the members of the public who might not read English.</p> <p>The product shall be easy to use by the first attempt by the public without training.</p> <p>Most of the general population shall be able to use the system and do what they want in less than 5 minutes.</p>
<b>Performance</b>	System shall handle up to 20 users simultaneously.

	System shall generate search result in less than 5 seconds. System shall let the user knows what happened correctly.
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- 2.5 Advantages of the new system Here simply mention the advantages of the new system
  - The website will build a reliable network for dentists and patients to communicate on, and each user will find what he needs.
  - The students will be able to buy and rent tools from each other, so no one can waste a lot of money on a tool that he only needs for a short period of time.
  - The clinics will be able to let the students know if there are work-training opportunities available.
  - Students can create a portfolio for themselves to showcase their work and strengths.
  - The students can share patient cases (volunteers) that they found and will not work on for others to see.
- 2.6 Risk and Risk Managements
  - We are expecting to face some problems during the development process, and we are building solutions for how to solve them.
    - One of these problems will be how to make sure that the user who sees patients is a doctor, and we are working on this with studying - searching AI. to enable us to make an efficient AI that will distinguish doctors from normal users with a picture of their college ID.
    - Another problem will be the lack of time because of exams and normal college activity. We already solved this problem by balancing time between GP and college.
    - Another problem will be the need to know what technology to use to help us in our project, and we already solved this issue by searching and figuring out what we need to learn and have already started studying it.