
COL740: Software Engineering

Assignment 2: Project Specification Document

Title: Patient Report Application

Submitted By:

Group 8

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THE PROBLEM:

When patients are required to get their tests done in pathology labs for a diagnosis, they first need to wait for their turn for the test, and then they have to receive their test reports from the labs and take them to the doctor for diagnosis. The time taken for this process usually takes days as he has to wait for appointment at every step and the process entirely resides on the patient (or his family member) being the mediator of reports from one end to the other.

Idea:

We intend to develop a system that brings this process online. We also want to store entire medical history of each patient at same place. So our web application will be hosted on Microsoft Azure Cloud Platform and Services where it can be scaled to a large number of users. We plan to tackle mainly three use cases:

- Reducing efforts and time on behalf of the patient to collect the reports.
- Reducing efforts and time on behalf of the patient to take a doctors appointment only to show him the reports and get his diagnosis.
- Reducing chaos around the hospital or doctors clinic if the patient has small doubts regarding his prescription.
- Maintaining a standard medical history of the patient at all times.

Components:

- **Patient Profile:** Patient can get to maintain a standard report for himself. He can fill in his medical history for himself and with every report and diagnosis, at any moment of

time we will have all the medical details required for the patient. Each patient will have his unique username and password. Patient can add the Pathology lab as well as doctor to his profile giving them access to upload and view his reports respectively.

- **Lab Profile:** Each Pathology Lab will have its user profile where it can upload the reports for patients who have given them access to do so.
- **Doctor Profile:** Doctors will have their own user profile. They can view the reports for the patients who have given them access to do so. They can then add comments or diagnosis for the patient which will get added as a part of patient medical report.

General Flow:

- **Patient consults doctor:** Patient will visit doctor regarding some problem. The doctor may recommend him to get some test done to get clear idea about the symptoms and the diseases.
- **Patient visits pathology lab for tests recommended by the doctor:** The patient should have an account and a unique patient id for himself. The patient has to give access to the lab to upload his tests by adding the lab to his profile. The lab will take test sample/ x-ray/ sonography report of the patient. Only patient profile has the rights to add the lab and doctor under its name. A doctor cannot affiliate himself to a patient or lab directly.
- **Lab uploads the lab results in image form on the patient profile:** Once the test report is generated, lab will upload the result/images on the user profile and it will be made accessible to the patient only.
- **Patient gets notified:** The patient will be notified when the lab has uploaded the reports/ images.
- **Doctor writes comment/prescription:** The patient can add doctor to his profile and give him access to view his reports. The doctor will visit his profile where he can find the patients seeking his treatment. He will search the particular patient and write comment, diagnosis or prescription.
- **Patient gets notified:** As soon as the doctor submits his diagnosis, the patient will be notified about the same. He may visit the doctor or follow the doctor's advice.

Features:

- Notification system for patient from both lab and doctor.
- Patient can message pathology lab if the report is not generated within reasonable time.
- Patient may message doctor if he has minor doubts regarding his prescriptions without waiting in lines and/or creating chaos in and around the hospital or doctor's clinic.
- Cloud based service.

Use Cases:

- In daily based scenario, if a doctor asks a patient to get a bunch of tests available at different Labs, the patient has to visit all these labs to collect his reports. He then has to schedule an appointment with the doctor to show him the reports and get his diagnosis. All these steps are time consuming and decentralised. Our platform will provide a centralised system for the collection of reports for the patient as well as the doctor.
- This platform will also serve as means to maintain the entire medical history of the patient. If the patient sees a new doctor for some treatment, the patient will always have his past reports as well as diagnosis available on his profile which the doctor can go through for better treatment.
- Developing this application on Azure platform will be useful because it will then be scalable to millions of users.