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REPUBLIC OF CAMEROON
Peace- Work-Fatherland
First Semester
Academic Year 2021/2022

FACULTY OF ENGINEERING AND ENGINEERING AND TECHNOLOGY

- Department: COMPUTER ENGINEERING (FET)
  - CEF 345: Software Development tools

Medical management system: Requirement Analysis

By Group 8

Under the supervision of: Dr. Tiydze

Group 8

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Requirement Analysis:

- **Definition**

A medical management system is a vague concept, it involves tracking the health and treatment of patients on a platform with a huge database. It may be used in clinics, hospitals and other health institutions.

Our medical management system will be global platform accessible to everyone. It will have an integrated digital medical booklet for consultations, it will then provide the location of the closest healthcare centers so you can receive adequate treatment using a GPS. It will permit patients to access their health stats, lab results, prescriptions by a simple click. More importantly, hospitals and clinics can use our platform as clients to interact better with their patients and reduce the paper work.

- **Functional Requirements**

There are a lot of software specifications required to build our medical management system. They contain a lot of processes and functionalities through the design and implementation. They involve; registration, digital medical report booklet, consultation, diagnosis, billing and a large database (warehousing).

❖ **Registration process**

The Platform will be user friendly, smooth and easy to use for everyone.

Patient Login: The patients will have the possibility to create accounts to access the system. Their account will track their past and present medical records. All the patient data will be stored and retrieved from the database.

Assigning a special ID to each patient will be crucial to track their health progress in any hospital or clinic they may find themselves in.

Staff login: The staff includes doctors in several health domains like ophthalmology, gynecology, pharmacists, laboratory worker. They will be able to access the system and send prescriptions, lab results and oral consultations.

We plan on creating a very large database that could contain the data of millions of patients with time. The coding of this platform will be done with the Java Programming Language. Meanwhile the User Interface will be implemented with Java Swing libraries.

❖ Database Design

To create an efficient database for patients, some key information like name, number, postal code, country, address, city, National ID number. This information will be crucial to identify all our patients and offer them a personalized experience on our platform.

The patient's information will be updated each time the patient makes transactions on our platform.

❖ Billing System

Our platform will have APIs such as MTN Mobile Money, so that transactions can be done easily online. The database will also contain records of all the transactions of individual patients and hospitals or pharmacies as whole. This is to digitalize the method of payment and make it less tedious.

• Non-Functional Requirements

These are software requirements as well that are important in the sustainability of our platform. They involve; security, performance, maintainability and reliability.

❖ Security

The patient will be required to use his National ID card to create an account on our platform. This is to identify the patient.

All the users that login to our platform will have a unique ID and passwords to make sure no one hacks their accounts. We will also set up a firewall to ensure the patient's data is safe.

All modifications to the database will be synchronized to the patient's accounts so they are always updated on their health stats.

The platform will be built such that, our hospital clients will have their own mini database in our system. Their manager or director will be able to alter the information directly. This is to ensure they have administrator rights.

❖ **Performance and Maintainability**

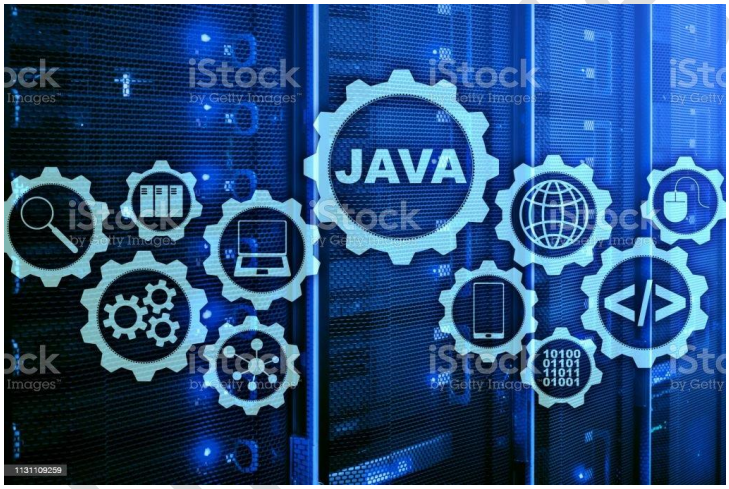
The response time of our platform will be relatively low and will be able to support at least 800 users at once. The user interface will easy to understand and use.

As for maintenance, the platform will offer regular data back-ups. The system will track any errors and glitch and solve them.

❖ **Reliability**

The system will be available and accessible at all times for everyone. Patients will also receive reminders through texts for any appointments they book on our platform.

- **Model Requirement**



To build this project successfully, we will need the following software development tools:

Star UML: For the design.

Eclipse IDE: For our Java programming.

MySQL: For the creation and maintenance of our database.

Net Beans

We will focus on Object Oriented Programming to create a platform that will work of several OS.

- **Statistics**

Cameroon has an estimated population of 27 million people, the large majority (85%) of households in Cameroon own a mobile phone. Twenty percent of women and 10% of men age 15-49 in Cameroon have received no education. The majority have gone to at least some primary or secondary school. Only 8% of women and 11% of men have gone beyond secondary school. Also, the infant mortality rate (deaths to children before their first birthday) in Cameroon is 48 deaths per 1,000 live births. Most infant deaths occur during the first month of life: the neonatal mortality rate is 28 deaths per 1,000 live births. These statistics were gotten from the 2018 Demographic and Health Survey in Cameroon.

This proves that our platform will have a huge market in Cameroon, because anyone may have severe health issues. Also, the 85% of households in Cameroon that own mobile phones could easily access our platform. With the proper marketing, our platform is feasible.

- **Feasibility Analysis**

With all the software development tools mentioned and the statistics mentioned above, the medical management system has a great potential for success. The programming and design will be done by our team.

Obstacles

We have to learn object-oriented programming before we can begin our project. This task will be daunting because we are learning during the runtime of the project.

Also getting users to our platform through marketing will be hard in Cameroon. A lot of institutions are reluctant to be digitalized and use a cloud database. They will rather use their paperwork and accept physical money for their services.

As a team, we believe more challenges will rise, but our resilience and determination will help us surpass all these obstacles together.

Conclusion

Our team strongly believes that under the supervision of Dr. Tiydze, by the end of this semester we will build a medical management system. This system will have a platform accessible to everyone in Cameroon and probably the world like Waspito. We will continue to work hard to attain this goal.