**MINISTRY OF EDUCATION AND TRAINING**

**FPT UNIVERSITY**

Capstone Project Report 1

**Building the laboratory tests management system**

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| **Capstone Project Code** | eLTMS |

- Ho Chi Minh City, 14 September 2018 -

# Table of Contents

[Table of Contents 1](#_Toc531532277)

[List of Tables 1](#_Toc531532278)

[Introduction 2](#_Toc531532279)

[1. Project Information 2](#_Toc531532280)

[2. Introduction 2](#_Toc531532281)

[3. Current Situation 2](#_Toc531532282)

[4. Problem Definition 2](#_Toc531532283)

[5. Proposed Solution 3](#_Toc531532284)

[5.1. Feature functions 3](#_Toc531532285)

[5.2. Advantages and disadvantages 3](#_Toc531532286)

[6. Functional Requirements 4](#_Toc531532287)

[7. Roles and Responsibility 5](#_Toc531532288)

# List of Tables

[Table 1 - Roles and Responsibility 5](#_Toc531532271)

# **Introduction**

## **Project Information**

* Project name: **Building the laboratory tests management system**
* Project Code: **eLTMS**
* Product Type: **Website & Mobile Application**
* Start Date: **September 10th, 2018**
* End Date: **December 14th, 2018**

## **Introduction**

Hospital are the essential part of our lives, providing best medical facilities to people suffering from various ailments, which may be due to change in climatic conditions, increased work-load, emotional trauma stress etc. It is necessary for the hospitals to keep track of its day-to-day activities & records of its patients, doctors, nurses, ward boys and other staff personals that keep the hospital running smoothly & successfully.

But keeping track of all the activities and their records on paper is very cumbersome and error prone. It also is very inefficient and a time-consuming process Observing the continuous increase in population and number of people visiting the hospital. Recording and maintaining all these records is highly unreliable, inefficient and error-prone. It is also not economically & technically feasible to maintain these records on paper.

Thus, keeping the working of the manual system as the basis of our project. We have developed “The Laboratory Tests Management System”.

The main objective of this project is to analyses the concept and process of laboratory tests in the hospital, from which to build up the website to manage all patient information of laboratory tests and help doctor, users, and laboratory technician easy to control their job. It also aims at providing low-cost reliable automation of the existing systems. The system also provides excellent security of data at every level of user-system interaction and provides robust & reliable storage and backup facilities.

## **Current Situation**

Nowadays, In Vietnam, Except for the large hospitals on the upline have laboratory system, which help doctor conjecture and treat patients in the best way. Other hospital or clinics on the downline do not have this system, If the doctor want to conjecture and treat patients in the best way, they must require patients go to hospital on upline and check their health on the laboratory systems, after that, patient will come back and listen the diagnosis.

But all of hospitals on upline is over-load now. If the patients want to check health, they must take time consuming to change hospital, take time consuming to wait because large numbers overload of patients. Not only time but also money, they must spend money for this moving and laboratory system.

With our laboratory management system, we will help patients and doctor with life easier.

## **Problem Definition**

Below are disadvantages of current situation:

* Patients spend too much time, effort to get the health result.
* Doctor do not have the best support tools for offering the best treatment options.
* Hospitals, clinics have difficulty in managing records, reviews.

## **Proposed Solution**

Our solution is to build systems capable of placing and managing time (Calendar Manager) to resolve the current situations, we also design the system to be scalable, so we can deploy this system to a multiple insurance services company in future.

eLTMS includes web application and mobile applications with following functions:

### **Feature functions**

* Web application:
  + Register Appointment: User can register a new account on website. A staff will reply by SMS message for authentication to confirm calendar management
* Mobile application:
  + Register Appointment: User can register a new account on mobile. A staff will reply by SMS message for authentication to confirm calendar management.

### **Advantages and disadvantages**

* Advantages:
  + Patient is easier in manage time for appointment.
  + Hospitals/Clinics can control facilities, machines and supplies.
  + Hospitals can record the types of illnesses, disease trends, which can be used for deciding how to treat, how to disease prevention.
  + Hospitals/Clinics can maximize the free time of each laboratory.
  + High Automation.
* Disadvantages:
  + Human must still interfere with system in some cases.

## **Functional Requirements**

Function requirements of the system are listed as below:

* Base Component:
* Login.
* Register.
* User (Patient) component:
  + New account request / Feedback about account request.
  + Book Appointment/ View Booked Appointment/Edit-Cancel Appointment.
  + View test result-View suggestion, note.
  + Edit, Update profile account.
* Receptionist component:
* View detail appointment.
* Change status of appointment.
* View list patient who has testing following day.
* Cashier component:
* New account creates for user (Patient).
* View list patient who has testing following day
* Manage Laboratory (Operate with patient by appropriate/real time)
* Change status of appointment.
* Nurse component:
* Change status of appointment.
* Change status of lab-testing.
* Warehouse-keeper component:
* Manage items on system.
* Import and control quantity on the system.
* Stock control, stock out, stock in
* Doctor component:
* Check the disease.
* Suggest Medication (types and quantities)
* Some good advice for patient.
* Write note and conclusion
* Request re-testing
* Laboratory Technician component:
* Import the test result in the system.
* Mapping code of specimen.
* Create New Group of Specimen.
* Create New Type of Specimen.
* Manager component:
* Manage Service of Lab Test.
* Manage Staff account (Add, Edit and Delete).
* View and Check Result Test.
* View Feedback.

## **Roles and Responsibility**

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| --- | --- | --- | --- | --- |
| No | Full Name | Role | Position | Contact |
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Table 1 - Roles and Responsibility