**Project 23**

**Mill Park Family Clinic Management System**

**About the Client**

Mill Park Family Clinic is a GPA plus accredited general practice. Comprehensive health care to all families and individuals of all ages has been provided at the clinic since 2008. Bulk billing is available to all patients with medicare cards. We have 2 locations now and both are located near the Mill Park shopping centre and are easily accessible via public transport. Free parking is available at the back of Elgar Road clinic.

The practice comprises 6 General Practitioners and host 1+ Registrar/s who practice quality medical care for patients incorporating best practice principles and up to date knowledge. They are supported by 2 practice nurses, a practice manager, office manager, 4 receptionists, on-site pathology, and psychology and dietitian services.  
  
**OUR VISION:     
Our vision is to deliver quality comprehensive medical care in a financially sustainable environment.**

**OUR MISSION:**  
The goal of the doctors and staff of Mill Park Family Clinic is to provide:

**Quality medical care** for patients incorporating best practice principles, up to date knowledge and technological advances.  
**Quality service** for patients through awareness of individual health and social requirements, respect for the patients as people and confidentiality for any information gained.  
​**Quality working conditions** for doctors and staff through mutual respect and awareness individually of personal and social requirements.

**Project Brief & Business Problem Specifications:**

Mill Park Family Clinic Management System needs to be developed to override the problems prevailing in the practicing manual system. This system should be supported to eliminate and in some cases reduce the hardships faced by the existing system. Moreover this system need to be designed for the particular need of the company to carry out operations in a smooth and effective manner.

The application should reduce as much as possible to avoid errors while entering the data. It should also provide error message while entering invalid data. No formal knowledge should be needed for the user to use the system. Thus by this all it should prove it is a user-friendly system. Mill Park Family Clinic Management System, as described above, should lead to error free, secure, reliable and fast management system. It should assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus it should help organization in better utilization of resources.

Every organization, whether big or small, has challenges to overcome and managing the information of Appointment, Clinic, Patient, Test, and Medicine. Every Clinic Automation system has different Clinic needs, therefore the system should be designed exclusive to employee management systems that are adapted to managerial requirements. The system should be designed to assist in strategic planning, and will help ensure that the organization is equipped with the right level of information and details for future goals. Also, for those busy executive who are always on the go, the system comes with online access features, which will allow the users to manage the workforce anytime, at all times. The system should ultimately allow the system users to better manage resources.

## **Objective of Project**

The main objective of the Project on Mill Park Family Clinic Management System is to manage the details of Clinic, Appointment, Doctor, Patient, and Medicine. It should manage all the information about Clinic, Test, Medicine, and Clinic. The project should totally built at administrative and user ends and only the administrator is guaranteed the complete access to the system. The purpose of the project is to build an application program to reduce the manual work for managing the Clinic, Appointment, Test, and Doctor. It should track all the details about the Doctor, Patient, and Medicine.

**Functional Requirements**

**Registration Process**

* Adding Patients: The Clinic Management System (CMS) should enable the staff at the front desk to include new patients in the system.
* Assigning an ID to the patients: The CMS enables the staff at the front desk to provide a unique ID for each patient and then add them to the record sheet of the patient. The patients can utilize the ID throughout their hospital stay.

**Check Out:**

* Deleting Patient ID: The staff in the administration section of the ward can delete the patient ID from the system when the patient checkout from the hospital.
* Adding to the beds available list: The Staff in the administration section of the ward can put the bed empty in the list of beds available.

**Report Generation of SRS:**

* Information of the Patient: The system should generate a report on every patient regarding various information like patients name, Phone number, bed number, the doctor's name whom its assigns, ward name, and more.
* Availability of the Bed: The system should also help in generating reports on the availability of the bed regarding information like bed numbers unoccupied or occupied, ward name, and more.

**Database of SRS:**

* Mandatory Patient Information: Every patient has some necessary data like phone number, their first and last name, personal health number, postal code, country, address, city, 'patient's ID number, etc.
* Updating information of the Patient: The system should enable users to update the information of the patient as described in the mandatory information included.
* Provide the searching facilities based on various factors. Such as Clinic, Doctor, Patient, Medicine
* Clinic Automation system should also manage the Test details online for Patient details, Medicine details and Clinic.
* It should track all the information of Appointment, Test, and Patient etc.
* Manage the information of Appointment
* Show the information and description of the Clinic, Doctor
* To increase efficiency of managing the Clinic, Appointment
* It should deal with monitoring the information and transactions of Patient.
* Manage the information of Clinic
* Editing, adding and updating of Records should be improved which results in proper resource management of Clinic data.
* Manage the information of Patient
* Integration of all records of Medicine.

**Non Functional Requirements**

There are a lot of software requirements specifications included in the non-functional requirements of the system, which contains various processes, namely Security, Performance, Maintainability, and Reliability.

**Security:**

* Patient Identification: The system needs the patient to recognize herself or himself using the phone.
* Logon ID: Any users who make use of the system need to hold a Logon ID and password.
* Modifications: Any modifications like insert, delete, update, etc. for the database can be synchronized quickly and executed only by the ward administrator.
* Front Desk Staff Rights: The staff at the front desk can view any data in the system, and add new patients record to the HMS but they don't have any rights to alter any data in it.
* Administrator rights: The administrator can view as well as alter any information in the system.
* Cybersecurity Implementation: Identify ethical risks in database design and implement the actions of mitigation.
* Cybersecurity Implementation: Provide evidence that you have implemented the data encryption and anonymization of data.
* Cybersecurity Implementation: Perform ‘Data Protection Impact assessment’ to help ensure compliance, facilitate a privacy by-design approach and identify better practice.
* Cybersecurity Implementation: Implement the secure methods for data encryption, data security and data breach to maintain the privacy of end users.

**Performance:**

* Response Time: The system provides acknowledgment in just one second once the 'patient's information is checked.
* Capacity: The system needs to support at least 1000 people at once.
* User-Interface: The user interface acknowledges within five seconds.
* Conformity: The system needs to ensure that the guidelines of the Microsoft accessibilities are followed.

**Maintainability:**

* Back-Up: The system offers efficiency for data backup.
* Errors: The system will track every mistake as well as keep a log of it.

**Reliability:**

* Availability: The system is available all the time.

Project should aim at Business process automation.

* + In computer system the person has to fill the various forms & number of copies of the forms should be easily generated at a time.
  + In computer system, it is not necessary to create the manifest but we can directly print it, which saves time.
  + To assist the staff in capturing the effort spent on their respective working areas.
  + To utilize resources in an efficient manner by increasing their productivity through automation.
* The system should generate types of information that can be used for various purposes.
* It satisfy the user requirement
* Be easy to understand by the user and operator
* Be easy to operate
* Have a good user interface
* Be expandable
* Delivered on schedule within the budget.

**User Modules (User Frontend):**

Developers need to research and discuss with the client to finalize the modules and requirements.

**Reports Requirements:**

* + It should generate the report on Clinic, Appointment, Test
  + Provide filter reports on Doctor, Patient, Medicine
  + Users should easily export PDF for the Clinic, Test, Patient
  + Application should also provide excel export for Appointment, Doctor, Medicine
  + Also export the report into csv format for Clinic, Appointment, Medicine

**System Modules**

* + - Clinic Management Module: Use for managing the Clinic details.
    - Medicine Module : Use for managing the details of Medicine
    - Test Module : Use for managing the details of Test
    - Appointment Management Module: Use for managing the information and details of the Appointment.
    - Doctor Module : Use for managing the Doctor details
    - Patient Module : Use for managing the Patient information
    - Login Module: Use for managing the login details
    - Users Module : Use for managing the users of the system

**Input Data and Validation Requirements**

* + All the fields such as Clinic, Doctor, Medicine should be validated and does not take invalid values
  + Each form for Clinic, Appointment, Test should not accept blank value fields
  + Avoiding errors in data
  + Controlling amount of input
  + Integration of all the modules/forms in the system.
  + Preparation of the test cases.
  + Preparation of the possible test data with all the validation checks.
  + Black-box/White-box testing.
* Recording of all the reproduced errors.
* Modifications done for the errors found during feeling.
* Prepared the test result scripts after rectification of the errors.
* Functionality of the entire module/forms.
* Validations for user input
* Checking of the coding standards to be maintained during coding.
* Testing the module with all the possible test data.
* Testing of the functionality involving all type of calculations etc.
  + Creating & Changing Issues at ease
  + Query Issue List to any depth
  + Multi-level Priorities & Severities.
  + Targets & Milestones for guiding the programmers
  + Attachments & Additional Comments for more information
  + Robust database back-end
  + Various level of reports available with a lot of filters criterias
  + It should contain better storage capacity.
* Accuracy in work.
* Easy & fast retrieval of information.
* Well-designed reports.
* Decrease the load of the person involve in existing manual system.
* Access of any information individually.
* Work becomes very speedy.
* Easy to update information

**The proposed system requirements:**

* + System needs store information about new entry of Clinic.
  + System needs to help the internal staff to keep information of Appointment and find them as per various queries.
  + System need to maintain quantity record.
  + System need to keep the record of Doctor.
  + System need to update and delete the record.
  + System also needs a search area.
  + It also needs a security system to prevent data.

**UI Design Requirements**

User Interface Design is concerned with the dialogue between a user and the computer. It is concerned with everything from starting the system or logging into the system to the eventually presentation of desired inputs and outputs. The overall flow of screens and messages is called a dialogue.

1. The system user should always be aware of what to do next.
2. The screen should be formatted so that various types of information, instructions and messages always appear in the same general display area.
3. Message, instructions or information should be displayed long enough to allow the system user to read them.
4. Use display attributes sparingly.
5. Default values for fields and answers to be entered by the user should be specified.
6. A user should not be allowed to proceed without correcting an error.
7. The system user should never get an operating system message or fatal error.

**Existing System**

* + Lack of security of data.
  + More man power.
  + Time consuming.

- Consumes large volume of pare work.

* + Needs manual calculations.
  + No direct role for the higher officials

The aim of proposed system is to develop a system of improved facilities. The proposed system should overcome all the limitations of the existing system. The system should provide proper security and reduces the manual work.

* + Security of data.
  + Ensure data accuracy's.
  + Proper control of the higher officials.
  + Minimize manual data entry.
  + Minimum time needed for the various processing.
  + Greater efficiency.
  + Better service.
  + User friendliness and interactive.
  + Minimum time required.

Functional requirements are product features or functions that developers must implement to enable users to accomplish their tasks. So, it’s important to make them clear for the stakeholders. Generally, functional requirements describe system behavior under specific conditions. The developers of this system must enhance the performance and efficiency of the system by adding 15 to 20 more functional requirements. Students need to do their own research to find how they can improve the system and which FRs need to added. The group must need a prior approval from the stakeholders/project supervisor before finalizing these Functional Requirements. These enhanced FRs must be reflected separately in Final SRS Report after the approval.

**Hardware Requirement: Should be recommended by the developers.**

**Software Requirement: Should be recommended by the developers.**