B.TECH. SEMESTER V PROJECT PROPOSAL

HOSPITAL MANAGEMENT SYSTEM

MEMBERS

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EXECUTIVE SUMMARY

Health care is one of India's biggest sector - both in terms of employment and revenue
The annual growth rate is expected to grow from $100billon (2017) to $280 billion (2020)
India's health sector consists of public and private sector where most public sector caters the rural areas and private health care concentrating on urban areas.
India's advantage in skilled medical professionals and cost effective health care system has also made Medical Tourism as an important growing sector in India, worth US 3 billion(2015)
The technological revolutions which fuelled the growth of Amazon retailer has created an 'Amazon Effect' which is spreading to other industries including medical field which oughts to makes the medical services frictionless and instant and will pave way for intelligent appoint scheduling , predictive medical services and better customer support.
Growth of Health Information Technology (HIT) and Integration of Big Data and Analytics will further enhance these systems.

STATEMENT OF THE PROBLEM

In order to cater for this new population influx , we have to revise the traditional methods that are used now.The majors issues faced now are as follows

- Increase in patient flow due to population explosion.
- Inaccessibility to health care information.
- Lack of facility management leads to delay in delivery and downtime.
- Absence of proper grievance addressal system.
- Redundancy of records.
- Delays in access to records.
- Ill managed queue systems.
- Lack of privacy and confidentiality in record keeping.
- Hard to access data for data analytics and research.

TECHNICAL APPROACH

1) GUI based front-end for the following:

- Reception
- Inventory Management
- Out Patient Department (OPD)
- In Patient Department (IPD)
- Causality
- Pharmacy
- Wards
- Diagnostic Labs
- Intensive Care Unit (ICU)
- Operation Theatre (OT)
- Billing & Discharge
- Staff management
- Office administration

2) Centralized offline Database server with cloud support

3) A Web and Desktop Based clients for accessing the data

4) All computers must be networking capable.

5) Must accommodate specific requirements for different Medical Departments
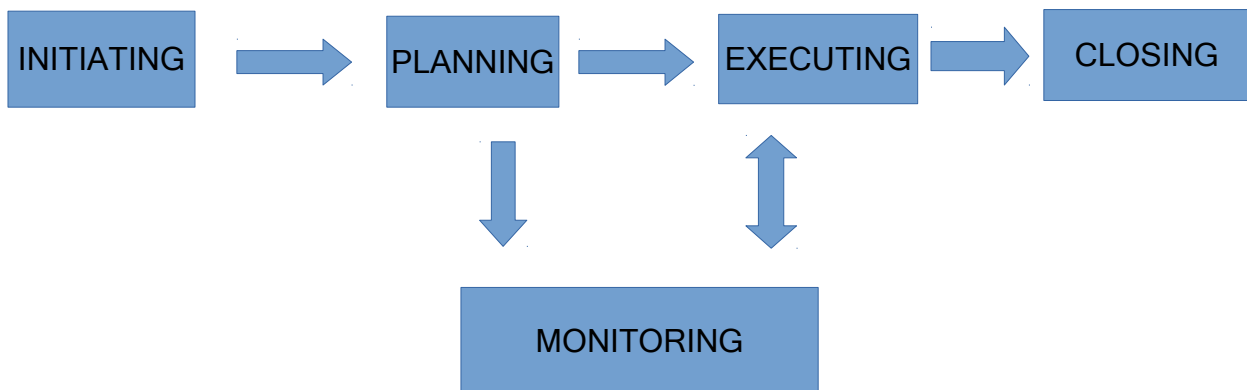
Software requirements

1.Database management Software – MariaDB
2.Desktop client framework – Electron
3.Web client framework – ReactJS
4.Cloud service – Amazon Web Services
5.Firebase
6.HTML
7.CSS
8.Windows, OSX or Linux

Hardware requirements

1. Intel/AMD quadcore cpu
2. 512 MB RAM

PROJECT MANAGEMENT

Figure 2: Software Project Management

Project Planning: Project Planning involves estimating several characteristics of the project and then planning the project activities based on the estimates made. It is undertaken immediately after the feasibility study phase and before the requirements analysis and specification phase.

It consists of the following essential activities:

1.   **Estimation:** The following project attributes are to be estimated. a. Cost

   a. Cost

   b. Duration

   c. Effort
2.   **Scheduling:** Schedules for manpower and other resources are developed.
3.   **Staffing:** Staff organisation and staffing plans have to be made.
4.   **Risk Management:** Risk identification, risk analysis and abatement planning are to be done.
5.   **Miscellaneous Plans:** Quality assurance plan, configuration management plan, etc have to be done.

Project Monitoring and Control Activities: They are undertaken once the development activities start. The aim of the project monitoring and control activities is to ensure that the development proceeds as per the plan.
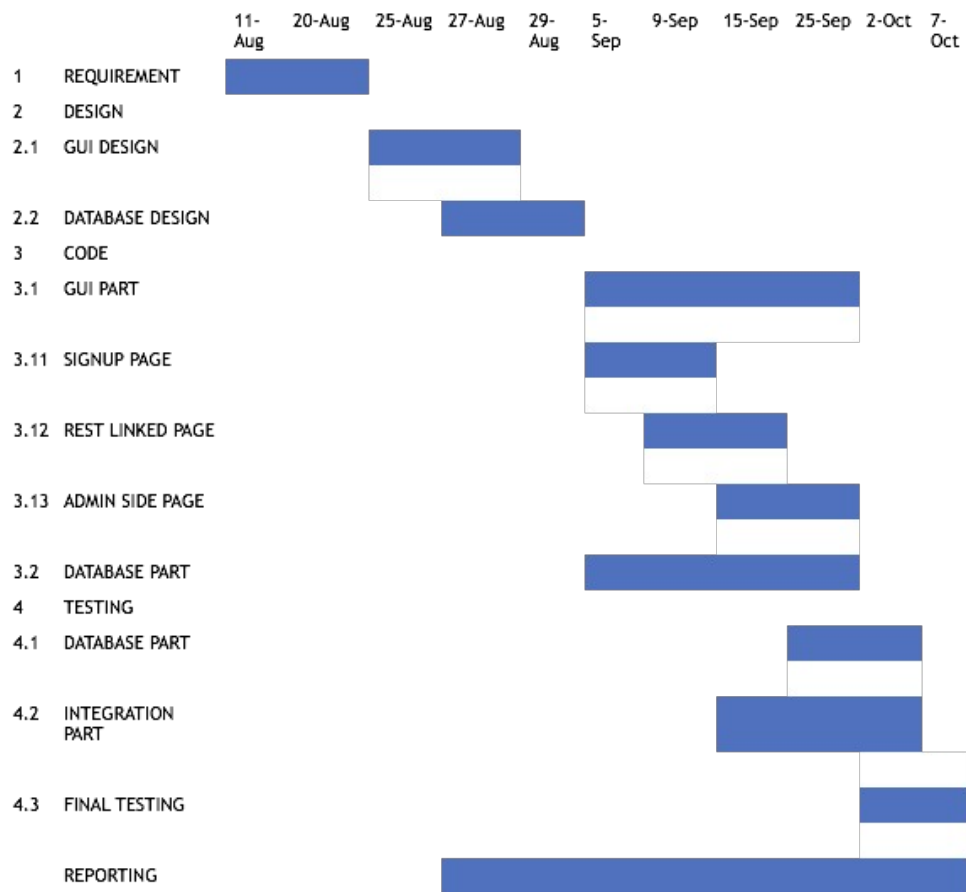
Figure 2: Gantt Chart

PHASE DESCRIPTION

Feasibility Study: The main aim of feasibility study is to determine whether it is financially and technically feasible to develop the project.

Requirement Gathering and Analysis Phase: All possible requirements related to the project to be developed are gathered in this phase and documented in a requirement specification doc.

Project Design Phase : The requirement specifications from first phase are studied in this phase and project design is prepared.

Implementation Phase : With inputs from project design, the project is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality which is referred to as Unit Testing.

Integration and Testing Phase : All the units developed in the implementation phase are integrated into a single final project after testing of each unit.

Deployment of System: Once the functional and nonfunctional testing is done, the project is deployed to the customer environment or released into the market.

Maintenance: Maintenance of a software product requires much more effort than to develop that product itself.

COMMUNICATION AND COORDINATION WITH SPONSOR

This is a university's project, so proper communication is scheduled to be set between the officials and the team. Weekly updates on the progress is planned to be reported to either the IT department or the main university. The mode of communication will be either through mail, physically visiting, or over phone.

Each member of the project was assigned parts of the work.

TEAM QUALIFICATION

Sharavan Krishna
Student at Cochin University of Science and Technology
Skills & Expertise
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