**LCOM Deliverables**

Vision - Manusha Anjaana Liyanage

Hospital Management System

Vision

**1.               Introduction**

As a team we hope to build up a system which mostly important in the real world when working with patients and hospitals. Our main thought is to build a hospital Management System to enrich the quality of the service carried out by the doctors and nurses toward the patient.

The main goal of this project is, use the new online system instead of the old legacy system used by the Hospitals to treat the patients. However we identify our stakeholders as the Patient, Doctor, Nurse and instead of that we are going to count the details about the Staff members including the nurses, details of the wards, details of the rooms, Handling of appointments, Handling all the schedules of the operating rooms, Payment details, medical reports and lastly the  system would handle all the invoices.

Any way this computerized system would be really speed when considering to the old legacy system. All the functionalities and the explanation about the system would be done below in this document.

**2.               Positioning**

**2.1             Problem Statement**

|  |  |
| --- | --- |
| The problem of | The problem with the old legacy system.  Very difficult to retrieve, find and process information  The generated information from various transactions takes time and effort to be stored at right place  Specific details of the information such as patient details or child's immunization details are difficult to make because it requires paperwork.  Preparing reliable and timely reports. This is a daunting activity as information from various registers is difficult to obtain.  Manual calculations are prone to error and this can lead to accurate information taking a lot of time. |
| Affects | Patients, Doctors, Staff members |
| the impact of which is | The accuracy of the details of on-going old legacy system is doubtful and it takes more time to decide as it needs to check with different registers.  The payments would be wrong as all these functionalities are handled by a human being. |
| a successful solution would be | The successful solution is the Online web-based Hotel management system which facilitates the patients, doctors, and the staff members to have a reliable service.  This allows the management to maintain the patients easily and help to provide prescriptions, precautions, and other advices.  Except this it maintains the level of users. |

**2.2             Product Position Statement**

|  |  |
| --- | --- |
| For | Patient |
| Who | Hospital |
| The (product name) | The hospital management system |
| That | Good solution for the past legacy system.  Easily recognize the needed information and generate the needed outputs.  Maintain different types of user levels.  Manage all the functionalities inside the hospital to make the system convenient and reliable.  Easy to handle  Maintain all the billings, prescriptions etc. |

**3.               Stakeholder Descriptions**

**3.1             Stakeholder Summary**

| **Name** | **Description** | **Responsibilities** |
| --- | --- | --- |
| Project Manager | The person who manages the project | Organizing and motivating the project team  Resource planning  Time management  Cost estimating and developing the budget  Ensuring the customer satisfaction  Analyzing and managing the project risk  Monitoring the progress  Producing the reports and necessary documentation |
| Business Analyst | The person who analyses a business domain | Planning and monitoring the project  Eliciting the requirements  Organization of the requirements  Translating and simplifying the requirements  Requirement analysis |
| Software Engineer | The person who design, develop, maintain and evaluate the system | Developing and directing the software system  Improve the system quality and resolving the issues.  Identifying the opportunities for improvement  Maintain and improve the code |
| Software Analyst | The person who study about the software domain and prepare software requirement document | Maintain and manage all the system  Interfere with the end users  Resolve the complex issues  Analyze and develop the testing  Develop the modifications and the changes needed. |
| Administrator | The person who control the system in the hospital | Register patient, staff, room, ward, Operating room, payments, appointments, admission, medical report  Update patient, staff, room, ward, Operating room, payments, appointments, admission, medical report  Search the details of patient, staff, room, ward, Operating room, payments, appointments, admission, medical report  Delete patient, staff, room, ward, Operating room, payments, appointments, admission, medical report |
| Front Officer | The person who handles the system without the staff handling | Register patient, room, ward, Operating room, payments, appointments, admission, medical report  Update patient, room, ward, Operating room, payments, appointments, admission, medical report  Search the details of patient, room, ward, Operating room, payments, appointments, admission, medical report  Delete patient, room, ward, Operating room, payments, appointments, admission, medical report |
| Patient | The person who get the service from the system | Register to the system.  Update the necessary details when needed.  Making the appointment  Settle down the payments |
| Doctor | The person who treat the patient | Update the patient details.  Add the medical reports and update and delete them  Search the medical reports |

**3.2             User Environment**

This is a web-based application that uses the web browsers as clients. And this includes

©      Display reports in Graphical Form

©      Provide product information online

©      Provide task information for workers on site via mobile devices

©      Allow remote works to enter job completion and get sign off on site

©      Order Goods with Online Catalogue, easy searching allows customer to keep track of orders and budgets

**4.               Product Overview**

**4.1             Needs and Features**

|  |  |  |  |
| --- | --- | --- | --- |
| **Need** | **Priority** | **Features** | **Planned Release** |
| Add the details of the patients | 1 | Using a database to add the details of the patients. | 20/04/2020 |
| Search the details of the patients easily | 2 | Using the search bar, it can easily search the details of the patient. | 25/04/2020 |
| Update the content of a patient | 3 | Use the feature of the update to make any changes of the patient details. | 04/05/2020 |
| Delete the patient details | 4 | Under a given circumstance if the patient is not necessary to the database, there is a feature which can make the data removed | 06/05/2020 |
| Register a new staff member to the company | 8 | Use the register member option in the system to add the member details. | 23/05/2020 |
| Search the details of the staff member to make a change to his address (update and search) | 9 | Use the search bar given to the staff member and change the given address of the staff member to the new address and save it properly | 25/05/2020 |
| Delete the details of the staff member | 10 | Use the delete option which available for the staff member to delete the data of the staff member when needed. | 03/06/2020 |
| A new building was made and need to add the details of the building and need to add the count of operating rooms that have and need to update the details of the current rooms and wards available | 12 | Still in the system we have an option named the Operating rooms and the rooms and the ward. So then from those options you can add all the details of the new buildings and the changes done to the current buildings could be included. | 04/06/2020 |
| The patient needs to make the payment | 7 | The front person can log in to the system and he has a option to pay the bill. Then he can ask the details of the patient while taking his patient ID to find all the necessary details input to the system to finalize the bill. | 19/05/2020 |
| The front person has mistakenly inputted the persons bill. So, he needs to re do the payment by deleting the followed bill and need to update the relevant field | 11 | This can be done by the Payment option and this make the front person to edit the details of the patient and remake the mistake by deleting the wrong payment details. | 03/06/2020 |
| A new patient needs to make an appointment and he need to change the appointment made his mother and once the same time he needs to delete the appointment made for his father as he was passed away. | 6 | This can be done using the appointment register. At the same time, the user can add his patient details, update the mother’s details and delete the father’s details. | 15/05/2020 |
| Doctor need to search for a specific report of a patient, and he need to update the details of the patient. | 5 | Doctor can able to use the medical report section to handle all the tasks like delete update, add and search. | 09/05/2020 |

**5.               Other Product Requirements**

|  |  |  |
| --- | --- | --- |
| **Requirement** | **Priority** | **Planned Release** |
| Security | 4 | 05/06/2020 |
| Audit | 5 | 07/06/2020 |
| Performance | 3 | 06/06/2020 |
| Capacity | 10 | 15/06/2020 |
| Availability | 2 | 06/06/2020 |
| Reliability | 6 | 10/06/2020 |
| Integrity | 9 | 13/06/2020 |
| Recovery | 11 | 14/06/2020 |
| Compatibility | 7 | 10/06/2020 |
| Maintainability | 8 | 10/06/2020 |
| Usability | 1 | 06/06/2020 |
| Documentation | 12 | 15/06/2020 |

Initial Requirement Model - Manusha Anjaana Liyanage

Use Case Model

Use Case Diagram

[use case.jpg](https://interact2.csu.edu.au/bbcswebdav/internal/courses/S-ITC303_202030_SM_I/wikis/group/a1aeaa3238834613955e93fdf7e9d54e/6116705ed7834b1faa0d941ea3817df8/use%20case.jpg)

Short Use Case Descriptions

**Hospital Management System**

**Short Use Case Descriptions**

1. Use Case 1

**When** Front Officer

**Wants**to add patient they need to enter to the system first and he need to choose the option add patient

**So that** he can add the details of the patient to the system

1. Use Case 2

**When** Front Officer

**Wants**to search the details of the patient and update his name as R.Devin in place of K.Devin so they first log in to the system and go to patient details section and he would search the K.Devin and by clicking the update details , he is able to update the name

**So that** Front Officer can update his details and search the details he needed.

1. Use Case 3

**When** admin

**Wants to** delete the details of a patient they must go to the option of delete patient details and then he needs to choose the needed patient to be deleted and then need to delete it.

**So that** admin would be able to delete the patient details.

1. Use Case 4

**When**admin

**Wants** to add the new room is which newly built

they log to the system and go to the option register the room and add the details ask and make save it

**So that** Add a new room to the system

1. Use Case 5

**When**front officer

**Wants**to search for a room which has entered before and he need to update the room number they search the room by the search tab, and he update the details from the buttons given

**So that** he can search and update the details of the rooms

1. Use Case 6

**When** admin

**Wants**to remove an old room they need to log to the system and go to the option delete room and delete the need room from the system

**So that** he can remove/ delete the room

1. Use Case 7

**When** Patient

**Wants to** make a payment they log to the system and do the payment from their specific logins

**So that** then they can make a payment

1. Use Case 8

**When** Admin

**Wants to** Register a staff member they log to the system and from the staff adding option he can add the details of the new staff member

**So that** he can add new staff member to the system

1. Use Case 9

**When** Doctor

**Wants**to Add medical report they need to log in to the system and add the medical report to the specific patient needed.

**So that** they can add a new medical report to the system.

1. Use Case 10

**When** the doctor

**Wants** to delete the medical report of a patient they need to search the specific patient and delete that

**So that** he can remove that patient from the system.

1. Use Case 11

**When** the admin

**Wants** to search for the appointment details they need to log to the system first and go to the appointment section and he need to use the search bar to find the details

**So that** he can find the necessary details of the patient.

1. Use Case 10

**When** the patient

**Wants** to place an appointment they need to log from their logins and need to make an appointment from the appointment bar

**So that** he makes an appointment

1. Use Case 10

**When** the doctor

**Wants** to search the medical report of a patient they need to search the specific patient from the search bar given in the system

**So that** he can search the patient from the system.

System Wide Requirement Specification

**Descriptive Use Case**

|  |  |
| --- | --- |
| Title | Add patient to the system |
| Actor | Front officer |
| Normal Flow | 1. Log in to the system 2. Go to the patient management 3. Select add patient 4. Add the details of the patient 5. Save the details |
| Pre-condition | New patient is available |
| Post Condition | Check the patient is added to the system by searching the patient name. |

|  |  |
| --- | --- |
| Title | Update medical report |
| Actor | Doctor |
| Normal Flow | 1. Log in to the system 2. Go to the Medical report 3. Search the medical report no to find the report 4. Select field to be updated 5. Make the change to the data 6. Save the details |
| Pre-condition | Mistake in the medical report/ New details need to be added to the report |
| Post Condition | Check the report is changed by searching the medical report ide |

|  |  |
| --- | --- |
| Title | Register the details of the staff member |
| Actor | Admin |
| Normal Flow | 1. Log in to the system 2. Go to the staff management 3. Select add staff member 4. Add the details of the staff member 5. Save the details |
| Pre-condition | New staff member is joined to the company |
| Post Condition | Check the staff member is added to the system by searching the staff member name |

|  |  |
| --- | --- |
| Title | Search the medical report |
| Actor | Doctor |
| Normal Flow | 1. Log in to the system 2. Go to the medical report management 3. Search the medical report id |
| Pre-condition | Medical report needed to be searched |
| Post Condition | Able to find the medical report |

|  |  |
| --- | --- |
| Title | Delete the operating room |
| Actor | Admin |
| Normal Flow | 1. Log in to the system 2. Go to the operating room management 3. Search the room no 4. Delete the room from the delete button 5. Save the details |
| Pre-condition | The operating room is no more available |
| Post Condition | Check the operating room is gone by searching it id again. |

|  |  |
| --- | --- |
| Title | Make the payment |
| Actor | Patient |
| Normal Flow | 1. Log in to the system(patient) 2. Go to the payment due 3. Mark the amount to be going to paid 4. Select the card/visa 5. Make the payment |
| Pre-condition | When a payment is due |
| Post Condition | Download the receipt |

|  |  |
| --- | --- |
| Title | Search an appointment |
| Actor | Front Officer |
| Normal Flow | 1. Log in to the system 2. Go to the appointment management 3. Search the appointment id |
| Pre-condition | Need of finding a specific appointment |
| Post Condition | Appointment is available / may be not |

|  |  |
| --- | --- |
| Title | Place an appointment |
| Actor | Patient |
| Normal Flow | 1. Log in to the system(patient) 2. Go to appointment 3. Select the appointment type 4. Give the details need for the appointment 5. Make the appointment |
| Pre-condition | Need of making an appointment |
| Post Condition | Verification of Appointment is made |

Proposed Architecture

Architecture Notebook -  Prabashi Gunawardana

ABC HOSPITAL MANAGEMENT

Architecture Notebook

**1.    Purpose**

This document describes the philosophy, decisions, constraints, justifications, significant elements, and any other overarching aspects of the ABC Hospital System that shape the design and implementation.

**2.    Architectural goals and philosophy**

The primary objectives of this computer system are to be developed and implemented with usability and availability, not just for patients, but also for physicians and nurses, which could include those who are not technologically comfortable.

In order to achieve this high degree of usability and availability, there are not only specific hardware devices to be used but also variants of the standard user interface to fulfil the device's intended purpose.

For example, the self-service kiosk station is only required to allow patient to fill details like name, age, address, birthdate etc. Therefore, a touchscreen with minimal selection options should be adopted.

however, the administrator counter system must have full access allowing for the count the details about the Staff members including the nurses, details of the wards, details of the rooms, Handling of appointments, Handling all the schedules of the operating rooms, Payment details, medical reports and lastly the  system would handle all the invoices.

Adding to user interface optimization, the performance of each device often depends on its features. The online catalogue should be accessible on a website 24/7, for example, and Hospital staff should be able to access the program easily during or after working hours.

 This computer system also needs to concentrate on data traceability through the incorporation of audit features. It will ensure that the position of the valuable objects in the Hospital is still known, including who took part in particular transactions i.e. Assign doctor to one patient

In addition, the management of member's fines will also be traceable, which in turn will reduce the Hospital s costs and liability. To further support the system's auditing capabilities, security / user authentication must be included as a feature.

To reduce the effect on device usability, only user management should be the priority of the security features. This means that unique device functionality is made accessible only to approved users (Hospital staff).

Furthermore, as personal information of member is being collected and stored, adequate protection must be in place to secure this information. Finally, the program must be effective, with the goal of ensuring availability to all users during working hours.

This will ensure Library's enhanced performance is preserved and will impact on system accessibility and availability.

**3.    Assumptions and dependencies**

* The system is extremely dependent on the intended hardware devices (barcode scanners, swipe card readers, etc.) and a database for data management.

* Additionally, internet access is also essential to the website's publication (online catalogue).

* The library system is assumed to have access to a database for data management criteria (patient’s details, details of the wards, details of the rooms, Handling of appointments).

* It is also assumed that the council permits the publishing of a website.

**4.    Architecturally significant requirements**

* Interfaces have to customized for the specific purpose and system must be easy to members. Self-serving kiosk station allows for creating or checking Handling of appointments, handling all the schedules of the operating rooms the system design primarily designed for schedule work with staff.

* The system must be available at the Hospital during business hours. An unscheduled downtime frequency of 2 - 3 times are year is acceptable and the system should be back up within 5 - 10 mins.

* Maintenance of 1 - 2 hours a week is acceptable, after business hours.

* An online catalogue must be available to users 24/7. In event of a system crash out of hours, it is acceptable for a “fix during working hours” response to be displayed to users.

* The system must be able to manage the data relating to count the details about the Staff members including the nurses, details of the wards, details of the rooms, Handling of appointments, Handling all the schedules of the operating rooms, Payment details, medical reports and lastly the  system would handle all the invoices.

* The transactions / changes to the data relating to appointments, patients and payment must be tracked to ensure the maintain the schedule of patients is known at all times.

* Authentication of the users is required so that only authorized personnel can access restricted data and perform restricted transactions (discharge patient, take payment of outstanding fines). All staff members personnel are required to have a login and password to allow unrestricted access.

* The personnel information regarding member’s must be protected as per the governing privacy policy.

* An inactive user time-out (30 secs) should be implemented to provide security to the previous user and system data.

* During data entry, it must be ensured that all the required data is entered, no duplicate data entries are made and that the format of the data is correct.

* Any electronic interface failures, or user cancellations, must be handled so that the system reverts to the previous valid state

* The system, including all staff details, member and appointments, must be able to be restored from backups. The transactional, staff members and appointments is to be backed up daily, while the system code is only required to be backed-up upon changes.

* Receipts of transactions for members must be printed, along with barcodes and stickers for patients and general paper-based reports.

**5.    Decisions, constraints, and justifications**

* Optimize usability of the system and customized user interface for each of the intended devices.

* Using an application server independently from the rest of the applications to manage these personalized user interfaces.

* Constraint - Members data are to be obtained by using a swipe card reader, but a search can be conducted at the librarian's station in the event of missing membership card.

* Receipts are to be printed for patient transactions, Optional search at the kiosk station can be performed in case of missing barcode or member card.

* A touch screen interface is to be used for the kiosk station to increase usability

* The devices must be linked to a central server location in the hospital through local networking ports.

* Online catalogue searches and 24/7 item bookings for improved accessibility and availability shall be available on the website.

* The patient, staff member and appointments information must be handled by a relational database server as it provides perseverance, availability, integrity and security for the system. It's to stay separate from other software.

* All transactions are to be tracked and recorded using the relational database to ensure auditability of the system.

* A Domain server shall be used to authenticate / authorize users and to perform other system functions.

* The domain server shall enforce and preserve the protection of the members 'personal information in compliance with the applicable privacy policy / legislation.

         Network server shall limit maximum network access only to hospital / council employees.

**6.    Architectural Mechanisms**

* Relational Database Server

A relational database is expected to be used to achieve consistency and automate the management of patients, staff members and appointments. Relational databases enable structured data storage which avoids undesirable complexity and increases system usability. Furthermore, relational databases not only guarantee the validity of the stored data but also allow the data to be stored.

* Domain Server (Authentication / Authorization)

A domain server authenticates and permits computers and users to reach Logical Domain (Hospital) services. A username and password are required for all users with full system access (patients and hospital staff). It ensures that only approved individuals are able to conduct restricted tasks such as adding / removing hospital objects from the list, discharging patients.

For remote access, the same login specifications will be required. In addition, the transactions performed by each authorized user can be monitored using the relational database by logging in to the program. User authentication shall be achieved using the swipe cards.

* Back Up

The generated data and the device software have to be stored on a backup. Though the cheapest and easiest alternative is to connect to another external server to back up to a removal hard drive. In the event of a disaster (fire, flood, etc.) in the Hospital, such as the council server provides the added security of off-site backups.

**7.    Key abstractions**

* Patient - Register patient, Update patient details, Search patient details, and Delete patient
* Room - Register room, Update room details, Search room details, and Delete room
* Ward - Register ward, Update ward details, Search ward details, and Delete ward
* Operating room - Register operating room, Update operating room details, Search operating
* room details, and Delete operating room
* Payment – make a payment, Update payment details, Search payment details, and Delete
* payment
* Appointment - place an appointment, Update appointment details, Search appointment
* details, and Delete appointment
* Admission - Register admission, Update admission details, Search admission details, and
* Delete admission
* Medical reports - add medical report, update medical report details, Search medical report

**8.    Layers or architectural framework**

The ABC Hosptial Management system design is to reflect that of a three-tier architecture

• presentation tier (module) - which is responsible for the displaying the various user interfaces for the self-service kiosk station, the website and the Hospital station. This tier sends the results / inputs from the user to the application tier

• application tier - That is responsible for the programme logic, and ultimately governs the functionality of the application

• data tier - That is responsible for database storage and retrieval. This data is kept independent of the application servers.

Architectural Views

Risk List

Master Test Plan

Initial Project Plan - Prabashi Gunawardana

                           ABC HOSPITAL MANAGEMENT

Project Plan

**1       Introduction**

Throughout this project plan we are following procedure to achieve successful project, for that as the first step we create the project vision. we primarily spell out the core idea and the business case justify the development effort. We establish vision, establish initial use case model complete preliminary non-functional requirement analysis and identify/document candidate architectures. As the second step we create initial requirement model which identifies the scope of our intended software and the functional and non-functional requirements. Third we going to create initial requirement model which indicate how we achieve the functional and non-functional requirements. Furthermore, we are creating master plan which indicate how we intend to achieve our aim. Risk List is important to aware and avoid the issues. Technical competency demonstrator our proposed technology technical skills to achieve our goals and finally we are talking about inception phase project status assessment.

**2       Project organization**

Our team discussed to what sort of project we want to do, and we decided to work on Hospitality management. We are going to create online system for hospitality basically covering the functionality of the hospital.

Record of all the doctors, record of the patient and records of the nurses included in this system with Nurse registry patient registry, doctor registry. This system can be used by hospitals to hire doctors/nurses, to look at past medical history of patients. This system can be used by general people to find suitable doctors to channel accordingly. This project has the potential to be a revolution to the health and medical industry.

System project team members are

* H.K. Theekshana Ravinath
* Manusha Anjaana Liyanage
* Prabashi Mithma Gunawardana
* Kushal Regmi

In this project we all are collaborate equally to achieve this project goal successfully.

Task done by Theekshana

* A Risk List
* A Master Test Plan

 Manusha’s assign tasks are

* A Project Vision
* An Initial Requirement Model

In this resource allocation project tasks done by Prabashi are

* An Initial Requirement Model
* An Initial Project Plan

Task done by Kushal

* A Technical Competency Demonstrator
* An Inception Phase Project Status Assessment

According to the guidance of the lecturer, we have decided to use “Asana “, in case of

doing all the communication activities via the team members. Most of the documents have

been uploaded to “Asana “, which makes every team member allow and access to the

documents and updatable details.

Link to access: https://app.asana.com/0/1166585221404488/list

**3       Project practices and measurements**

There are some technical practices used in the project. Such as Scrum, Lean (LN), Crystal, DSDM, Adaptive software development and Agile unified process. That process is the main agile technical practice we used throughout this project. Agile unified process is an iterative and incremental process consisting of four subprocesses or workflows.

The components have been modified number of times to create number of variations. The unified process contains the rational unified process (RUP) and open unified process (Open UP). In our project Unified process is the main technical practices which we used. Technical practices such as Iterative development is a way of breaking down large project into smaller parts and complete it. By Iterative development software will be quicker and early during the software life cycle. Also, it’s more flexible.

Continuous Integration is a development practices and it requires developers to integrate code into shared repository several times. This method verified each method by automated build. And it allows team to detect problems early. Independent testing is an inferential statistical test that determines whether there is a statistically significant difference between

the means in two unrelated groups. How we Track the process of the project are

First, we create Deadlines for each task so that we can track the progress of each and every task. In our project there are only two members. So, in our meeting we create project outline for track the project progress. Checked regularly: we checked the project progress regularly, our communication mechanism slacked helped us in this process to track the progress. Established goals and milestones Setting up tailored goals and milestones with each member of the team also goes a long way toward team satisfaction. It’s important to stress each team member’s role and how it will contribute to the success of the team. Keeping the big picture in mind is always important, even while implementing smaller goals and points

of progress.

**4       Deployment**

Software deployment brings many key advantages to enterprises. Tasks like installing, uninstalling and updating software applications on each computer are time consuming.

Software deployment services reduce the time and make the process error free. The software can be easily controlled and managed through deployment. You can also monitor software information and the actions of users.

Create a checklist / pipeline of things to do before and after delivery to ensure data protection. The process of continuous integration should be implemented to ensure that any change is checked for implementation before it is submitted and there are no other errors along the way. Similarly, adopt [Continuous Delivery](https://opensenselabs.com/blog/articles/continuous-delivery-drupal?utm_source=oslwebsite&utm_medium=blog&utm_campaign=Continuous%20Delivery) (CD).

Invest in standard operating environments (SOEs) that help ensure the consistency in the environment

[Automate the build](https://opensenselabs.com/blog/articles/drupal-infrastructure-code?utm_source=oslwebsite&utm_medium=blog&utm_campaign=IAC) with tools that can simplify the process of tearing down an entire infrastructure stack and rebuild it from scratch.

Have a systematic process for creating alerts that can warn teams about the changes or notify about the issues in real-time.

**5       Project milestones and objectives**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Subject** | **Phase** | **Iteration** | **Dates** | **Primary objectives**(risks and use case scenarios) |
| ITC303 – Software Development Project 1 | Inception Phase | I-1 | 13/03 – 26/03 | Establish Vision  Establish Initial Use Case Model  Complete Preliminary Non-functional Requirement Analysis  Identify/Document Candidate Architectures  Establish Version Control |
| I-2 | 27/03 – 9/04 | Establish Risk List  Complete Full Description for Critical Core Risky Difficult (CCRD)Use Case  Implement Technical Competency Demonstrator  Create Test Plan  Establish Initial Project Plan  Deliver Life Cycle Objectives Milestone (LCOM)  Complete Inception Phase Project Assessment |
| Elaboration Phase | E-1 | 10/04 – 23/04  (Session Break) | Mitigate Highest Priority Risk(s)  Implement Highest Priority Architectural Element(s) to Support CCRD Use Case  Complete Development Testing for Highest Priority Architectural Element(s) |
| E-2 | 24/4 – 7/05 | Mitigate 2nd Highest Priority Risk(s)  Implement 2nd Highest Priority Architectural Element(s) to Support CCRD Use Case  Complete Development and Integration Testing for 2nd Highest Priority Architectural Element(s) |
| E-3 | 8/05 – 21/05 | Mitigate 3rd Highest Priority Risk(s)  Implement 3rd Highest Priority Architectural Element(s) to Support CCRD Use Case  Complete Development and Integration Testing for 3rd Highest Priority Architectural Element(s)  Deploy Executable Architecture in Trial Environment  Complete Internal User Acceptance Testing for CCRD Use Case in Trial Environment |
| E-4 | 22/05 – 2/06 | Contingency  Deliver Life Cycle Architecture Milestone (LCAM)  Complete Elaboration Phase Project Assessment |
| Mid-year Semester Break | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mid-year Semester Break | | | | |
| ITC309 – Software Development Project 2 | Construction Phase | C-1 | 10/07 – 23/07 | Implement 2nd Highest Priority Use Case(s)  Complete Development and Integration Testing for 2nd Highest Priority Use Case(s)  Complete Internal User Acceptance Testing for 2nd Highest Priority Use Case(s) |
| C-2 | 24/07 – 6/08 | Implement 3rd Highest Priority Use Case(s)  Complete Development and Integration Testing for 3rd Highest Priority Use Case(s)  Complete Internal User Acceptance Testing for 3rd Highest Priority Use Case(s) |
| C-3 | 7/0 – 20/08 | Implement 4th Highest Priority Use Case(s)  Complete Development and Integration Testing for 4th Highest Priority Use Case(s)  Complete Internal User Acceptance Testing for 4th Highest Priority Use Case(s) |
| C-4 | 21/08 – 3/09  (Session Break) | Contingency  Deliver Initial Operation Capability Milestone (IOCM)  Complete Construction Phase Project Assessment |
| Transition Phase | T-1 | 4/09 – 17/09 | Deploy Application in Trial Environment  Complete 1st Round External User Acceptance Testing  Resolve Any Identified Issues |
| T-2 | 18/09 – 1/10 | Complete 2nd Round External User Acceptance Testing  Resolve Any Identified Issues |
| T-3 | 2/10 – 13/10 | Contingency  Deliver Product Release Milestone (PRM)  Complete Final Project Assessment |

**Technical Competency Demonstrator**

By - **Kushal** Regmi

Video walkthrough

The link to the video walkthrough is below:

https://youtu.be/S4mOSYbbwB8

Source Code (version control)

The source Code is on our version Control and the link is below :

<https://github.com/TheekshanaRavinath/Hospital_management_system/wiki/Project-team>

**Inception Phase Status Assessment**

By - Kushal Regmi

**1. Assessment against Objectives of the Inception Phase**

**1.1 Do we know what we are trying to achieve?**

The aim of the project is to create a fully functioning online Hospital Management System to replace the old traditional System. This is embodied in the completed Vision Document.

We understand the main functional requirements of the project which are:

* Hospital Rules
* Administrative Functions
* Authentication
* Authorization
* External Interface
* Database Management System
* Patient Medical History
* Stakeholder Data and Information

This is shown in the completed Functional Requirement model

We understand the main Non-Functional requirements of the project which are:

* Usability
* Security
* Performance
* Reliability
* Data Integrity
* Availability
* Recovery

This is shown in the completed Non-Functional Requirement model

**1.2 Do we know how we are going to achieve it?**

We have a good idea of how we are going to achieve our aims. We are going to use a self-service kiosk station in the hospitals, the website consisting of the medical history and communication mechanisms and the Hospital station for staff members and doctors to access. This is shown in the completed architecture.

We have a good understanding of the project specific risks facing our project and how we are going to deal with them. The risks are:

* Requirement of project no defined
* Lack of communication
* Latency in Stakeholder Response
* Latency of legal Action
* Potential Global Pandemic

Our evolving understanding of risks is shown in the ongoing risk list and discussed further below in Section 4.

We have a good understanding of how we are going to check that our application delivers the intended functionality and system properties. Our key areas of concern and the test strategies we will use to address these concerns are as follows:

* Vision Doument
* Iteration Plan Execution
* Communication
* Member’ health

This is shown in the completed Master Test Plan

We have a good understanding of the dependencies and likely completion times for different parts of the project. Target completion dates for key aspects of the project are as follows:

* 13/04 - Deliver Life Cycle Objective Milestones ( LCOM)
* 02/06 - Deliver Life Cycle Architecture Milestone (LCAM)
* 03/09 - Deliver Initial Operation Capability Milestone (IOCM)
* 13/10 - Deliver Product Release Milestone (PRM)

This is shown in the Initial Project Plan.

**1.3 Skills required**

Our project requires skills using the following key tools and technologies:

* Familiar with push communication mechanism (ASANA)
* Using version control properly (Github)
* Experience in php(JavaScript)
* Instant communication mechanism (Email & WhatsApp)

We have demonstrated that we have the skills to use these technologies through the implementation of a technology competency demonstrator.

**2. Deliverables**

Iteration Plan 2

* Plan for the second part of the inception phase
* No issues

Architecture

* Describes how we are going to achieve what we want to do.
* No issues

**3. Risks**

Lack of communication

* Missing important point from discussions may lead to misunderstand the project goal

Latency of legal Action

* Project initiation will be delayed

Potential Global Pandemic

**Impact on all the project portfolio and the company**

**Summary – Overall Project Progress**

The inception phase of the project went very well. We had chance to know all the team members and their strength and weaknesses. Through many ideas, we decided to choose Hospital Management System. We thought that this project could be actually useful in the world right now. We decided to use Asana as our push communication mechanism while using Github for version control. We made a Vision Document establishing all the goals for this project. Vision Document shows the core idea and the business case justifying the development effort. Intital Requirement Model that illustrates the Functional and Non-Functional Requirements. An architecture was established that planned how we were going to achieve of result. A Risk List makes us aware where our project can go wrong. Master Test Plan verifies how our project meets its aims. An initial project plan gives idea on how we are going to achieve the goal of the project. The technical Competency Demonstrator shows that we have the technical skills to achieve our aims.