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## American International University- Bangladesh (AIUB)

## Department of Computer Science

**CSC4125: Software Development Project Management**

**Fall 2020-2021**

**Section B**

## Project: Developing the Software Development Project Management Plan for Dhaka Subway Systems Automated Ticket Issuing System

|  |  |
| --- | --- |
| **Name** | **Id** |
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# **Revision history**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **version** | **Authors** | **Description** | **sign** | **Date** |
| **1.0.0** | Faria Sultana  Mahbubur Rahman | The initial version of the project | Faria  Mahbub | 10th June 2020 |
| **1.0.1** | Faria Sultana  Mahbubur Rahman | Choosing a model and overall activity planning | Faria  Mahbub | 12th July, 2020 |
| **1.0.2** | Faria Sultana  Mahbubur Rahman | The final revised project with all correction. | Faria  Mahbub | 25th September, 2020 |

**3. Introduction:**

This document is an overview defining our software development project management Plan for Automated Ticket Issuing System for Dhaka Subway Systems. The aim of the project is to provide automated ticket sales for public use. The various criteria that will apply to the process model, the list of tasks, the calculation for each task, the deliverable process and the monitoring process of the specified application will be addressed in this document. As part of the strategic planning, feasibility analysis and project planning, we will use the project under management criteria.

**4. Process Model:**

Choosing a Model:

The Waterfall Model was the first Process Model to be introduced. It is very simple to understand and use. In a waterfall model, each phase must be completed before the next phase can begin and there is no overlapping in the phases. The Waterfall model is the earliest SDLC approach that was used for software development. The waterfall Model illustrates the software development process in a linear sequential flow. This means that any phase in the development process begins only if the previous phase is complete. In this waterfall model, the phases do not overlap. Teams do not require consistent communication and, unless specific integrations are required, can be self-contained. Team members can also work independently and are often required to provide status reports somewhat less frequently (when compared to an agile approach).

Why choosing this Model:

* Throughout these five stages, written requirements, usually put into a single document and used for verification of each stage, are composed alongside constraints and functional and non-functional needs of the project. Cost is described, as are assumptions, risks, dependencies, success metrics, and timelines for completion.
* A high-level design (HLD) is created to describe the purpose, the scope of the project, the general traffic flow of each component, and the integration points (the topology), followed by a detailed design, which allows subject matter experts (SMEs) to implement the HLD design to precise details.
* Implementation teams work to the design to create, code, implement, and test the solution. It is crucial that the single written document be as clear as possible, as the team who designs the system may or may not be the same. If changes are required during the implementation phase (due to unforeseen issues with the design, integrations, or even changes to the intended function of the system), this necessitates that a new design be created and signed off on before the implementation is completed.
* Acceptance tests are then deployed and executed in the verification phase, with the built solution further tested against the requirements to confirm that the project meets initial expectations. If it does not, then an examination is performed to identify the shortfalls and a review is completed to determine any ratification actions.
* Finally, as defects are raised or new versions of products are needed (maybe because they are no longer supported), planned changes are made by a dedicated ownership team. With the Waterfall Model, each stage can only continue when each of the previous stages are completed and signed off.
* The project scope stays relatively static, meaning cost and timelines can be determined early on in the project.
* By completing a full design early in the project, changes to systems stay minimal, meaning the cost to fix and alter designs is kept low.
* A structured approach to a project means that everyone understands what needs to be done and when. SMEs can effectively plan their time over the fixed period.
* By having detailed documentation and designs, a project can lose key members without too much hassle since the documentation describes in reasonable detail how any SME of the product or skill are needed to complete the work.

**5. Quality gate for each phase of software development:**

|  |  |
| --- | --- |
| **Phase** | **Quality Gate** |
| Requirement Analysis | Inspection |
| System Design | Inspection |
| Program design | Inspection |
| Coding | Inspection and Software testing |
| Testing | Software testing |

**6. List of tasks (WBS):**

* Requirement Elicitation
* Project Planning
* Requirement Analysis and SRS Document review
* System Prototype Design
* Project Design Review with Clients
* Implementation and Unit Testing
* Object Oriented Design Review
* Project Agreement
* System Integration and System Testing
* Internal Project Review – Functional Prototype Testing
* Project Acceptance by Client

**7. Estimation** **for each task (Use of COCOMO II):**

|  |  |  |
| --- | --- | --- |
| **Task of Phase** | **Days** | **Hours** |
| Requirements Elicitation | 12 | 96 |
| Project Planning | 13 | 104 |
| Requirements Analysis | 10 | 80 |
| System Design | 15 | 120 |
| Object Oriented Design | 13 | 104 |
| Implementation and Unit Test | 13 | 104 |
| System Integration and System testing | 14 | 112 |

**N.B.** Engineers individually works for 8 hours and 5 days a week. Total project duration is 90 working days.

**8. Schedule the tasks:**

|  |  |
| --- | --- |
| **Date** | **Project Phases** |
| June 10 – June 25 | Requirement Elicitation |
| June 26 – July 15 | Project Planning |
| July 16 – July 31 | Requirement Analysis |
| August 1 - August 21 | System Design |
| August 22 – September 10 | Object Design |
| September 11 – September 26 | Implementation and Unit Testing |
| September 27 – October 12 | System Integration and System Testing |

**N.B.** Weekend of few are included in the time frame which is not counted as working days. It is assumed that only 80% time of an engineer per day will be used to develop the software and 20% of the time will be used to reading emails, attending meetings and process improvement activities.

**9. Prepare list of milestones:**

|  |  |
| --- | --- |
| **Date** | **Project Milestones** |
| June 5 | Software Requirement Presentation by Client |
| June 10 – June15 | Analysis Review |
| July 14 | Project Plan Review by Client |
| September 8 | Object Design Review |
| September 12 | Demo Prototype Software |
| September 20 | Internal Project Review (Functional Prototype) |
| October 12 | Project Acceptance by Client |

**10. Staffing Plan:**

Staffing plan is prepared to make for certain reasons. In a project it is always need to be count in the plan that the sufficient staff with the right skills and experience to ensure the successful project completion. The following table is a detail breakdown of the roles and required stuff plan in order to execute the project. It includes the project role, the responsibility and the number of stuff required for the project.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Role** | **Name** | **Est. Working Hours** | **Key Project Phase** | **Number of Stuff Required** | **Hourly Rate** |
| Project Manager | Faria Sultana | 140 | ALL | 01 | $120 |
| Requirements Analyst (Lead) | Mahbubur Rahman | 35 | Requirements | 01 | $80 |
| Requirements Analyst | 1. Saba Zarin 2. SK Golam Mahmud 3. Mahbubur Rahman | 20  15  20 | Requirements | 03 | $80 |
| Software Engineer (Lead) | 1. ASM Humayun Kabir 2. Hasan Sheikh Muhammad Mehedi | 20  20 | System Allocation & Design | 02 | $90 |
| Software  Engineer | 1. Humaira Afrose 2. Rafid Shahriar Rimu | 30  46 | System Allocation | 02 | $60 |
| Programmer (Lead) | Faiyad Al Rahman | 25 | Implementation | 01 | $130 |
| Programmer | 1. Rahat Maksud Pranto 2. Tania Sultana | 30  35 | Implementation | 02 | $100 |
| Verification Engineer | 1. Muntanuz Zaman 2. Shahadat Hossain | 30  34 | Requirements, Design, Implementation | 02 | $50 |

**11. Monitoring and Controlling Mechanism:**

**Project Meeting for Monitoring**

**Project Name:** Developing the Software Development Project Management Plan for Dhaka Subway Systems Automated Ticket Issuing System

**Schedule Prepared By:** Faria Sultana

**Meeting Date:** 27 June, 2020

**Meeting Goal:** Monitoring and controlling the process

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **1. Meeting Objective** | | | | | |
| The main aim of this meeting is the monitoring of employee work and the work process and the staff is given a new meeting schedule after these have been monitored. | | | | | |
| **2. Attendee’s** | | | | | |
| **Name** | | **Department/Group** | | **Email** | |
| Mahbubur Rahman | | SE Department | | abc@gmail.com | |
| Saba Zarin | | SE Department | | bvd@gmail.com | |
| SK Golam Mahmud | | SE Department | | hrg@gmail.com | |
| ASM Humayun Kabir | | SE Department | | hrgk@gmail.com | |
| Hasan Sheikh Muhammad Mehedi | | SE Department | | hrgb@gmail.com | |
| Humaira Afrose | | SE Department | | hrga@gmail.com | |
| Rafid Shahriar Rimu | | SE Department | | hrgm@gmail.com | |
| Faiyad Al Rahman | | SE Department | | hrgl@gmail.com | |
| Rahat Maksud Pranto | | SE Department | | hrgx@gmail.com | |
| Tania Sultana | | SE Department | | hrge@gmail.com | |
| Muntanuz Zaman | | SE Department | | hrgt@gmail.com | |
| Shahadat Hossain | | SE Department | | mhrg@gmail.com | |
| **4.Agenda and Notes** | | | | | |
| **Topic and Position** | | **Owner** | | **Given Time** | |
| Requirement Analysis (Lead)  Requirements | | Mahbubur Rahman | | 1 week  ( 10 June to 16 June) | |
| Requirement Analysis  Requirements | | Mahbubur Rahman  Saba Zarin  SK Golam Mahmud | | 1 week  ( 10 June to 16 June) | |
| Software Engineer (Lead)  System Allocation & Design | | ASM Humayun Kabir  Hasan Sheikh Muhammad Mehedi | | 1 week  ( 10 June to 16 June) | |
| Software Engineer  System Allocation | | Humaira Afrose  Rafid Shahriar Rimu | | 1 week  ( 10 June to 16 June) | |
| Programmer (Lead)  Implementation | | Faiyad Al Rahman | | 2 week  ( 10 June to 16 June) | |
| Programmer  Implementation | | Rahat Maksud Pranto  Tania Sultana | | 2 week  ( 10 June to 16 June) | |
| Verification Engineer  Requirements, Design, Implementation | | Muntanuz Zaman  Shahadat Hossain | | 2 week  ( 10 June to 16 June) | |
| Tester  Testing | | Mahbubur Rahman | | 2 week  ( 10 June to 26 June) | |
| **5.Actions For Monitoring and Controlling** | | | | | |
| **Monitored and Controlled By** | **Checking Activity** | | **Review** | | **Comment** |
| Faria Sultana | Checking Requirement Analysis’s work | | Review the work | | Update the status and give the next extended time |
| Faria Sultana | Checking System Allocation and Design’s work | | Review the work | | Update the status and give the next extended time |
| Faria Sultana | Checking implementation’s work | | Review the work | | Update the status and give the next extended time |
| Faria Sultana | Checking testing’s work | | Review the work | | Update the status and give the next extended time |
| **6. Next Meeting** | | | | | |
| **Date** | | **Time** | | **Location** | |
| 14 July,2020 | | 1.00 pm | | Main Office, Dhaka | |
| |  | | --- | | **Objective of Next Meeting** |   When the job and work process are tracked again and once these have been monitored, the workers are granted a new meeting schedule. | | | | | |

**12. Risk Management:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Risks** | **Category** | **Probability** | **Impact** | **RMMM** |
| Lack of training on tools | DE | 80% | 3 | Provide more training for process tools |
| Customer will change requirement | PS | 80% | 2 | Continually communicate with customer and before starting the implementation again confirmed thee requirement |
| Staff inexperienced | ST | 30% | 2 | Provide training by the experts |

**13. List of Deliverables:**

* Software Requirements Specification
* User Manual
* System Design Document
* Code Modules
* Software Alpha Version
* Software Beta Version
* Test Case
* Test Plan
* Software Final Version

**14. Defect Tracking Process:**

* Selenium
* HP-UFT
* LoadRunner
* Jira
* BugZilla
* Trac
* HP ALM

**15.** **Metrics:**

* Metrics for monitoring test execution
* Metrics for monitoring defects
* Probability Impact Matrix
* Strong Matrix Organization

**16. Postmortem:**

**Meeting Date:** 14 October, 2020

**Review By:** Faria Sultana

|  |  |  |
| --- | --- | --- |
| **Item** | **Assigned to** | **Review** |
| Requirement Analysis | Mahbubur Rahman  Saba Zarin  SK Golam Mahmud | Completed |
| System Design and Allocation | ASM Humayun Kabir  Hasan Sheikh Muhammad Mehedi  Humaira Afrose  Rafid Shahriar Rimu | Completed |
| Program Design | Faiyad Al Rahman  Muntanuz Zaman  Shahadat Hossain | Completed |
| Coding | Rahat Maksud Pranto  Tania Sultana  Muntanuz Zaman  Shahadat Hossain | Completed |
| Testing | Mahbubur Rahman | Completed |