

Software Development Project Management (Sec: A)

Department of Computer Science

American International University-Bangladesh

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Project Title:Software Development Project Management Plan for Dhaka Subway Systems Automated Ticket Issuing System.

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**Revision history**

|  |  |  |
| --- | --- | --- |
| Version | History | Description |
| 12011.1001.1.0 | 8th December,2020 | Launch of initial version of project. |
| 12011.1302.3.1 | 11th December,2020 | Major fix on tasks documentation and release of final version. |

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**Introduction**

This is the documentation for the Software Development Project Management Plan for Dhaka Subway Systems Automated Ticket Issuing System. This software project management plan will explain details about the software development life cycle, which our Datasoft, Inc. group will consider in order to complete the desired software product. We tried our best to make this document a winning one thru revised versions. This document will cover detailed information about the management plan used in this project. The intended audience for this document is the designers and the IT department people. We hope that using our document the intended project will be much easier to proceed. It specifies the technical and managerial approaches to develop the software product. This includes scheduling, identification of tasks and factors that may affect the project and planning.

* **Choosing a development life cycle model**

RAPID Application Development model is type of incremental model. It is a faster software development process. This model generally describes applications that can be designed and developed within 60 – 90 days. This can quickly give the customers a quick preview to see and use, to provide feedback regarding the delivery and their requirements.

* **Why choosing this model**
* RAD should be used if there is high availability to designers for modeling.
* The budget is high enough because of automated code generating tools.
* In this model changes are adoptable.
* It brings highest priority functionality of the customer.
* It increases the reusability of features and reduced development time.
* It should be used if the budget allows the use of automatic code generating tools.

**Quality gate for each phases**

A quality gate is a milestone in an IT project that requires that predefined criteria must be met before the project processed to the next phase. Increased quality is a primary focus of the RAPID Application Development methodology. In this term, it associated with custom application development. According to the RAD, quality is defined as both the degree to which a delivered application must fulfill the needs of users as well as the degree to which a delivered system has low maintenance costs. RAPID Application Development attempts to deliver on quality through heavy involving of users in the analysis and design phases.

**List of tasks**

* Requirements Elicitation.
* Project planning.
* Requirements Analysis.
* System Design.
* Object Design.
* Implementation & Unit Test.
* System Integration & System Testing.

**Estimation for each tasks**

|  |  |  |
| --- | --- | --- |
| **Task of phase** | **Days** | **Hours** |
| Requirements Elicitation | 12 | 96 |
| Project Planning | 13 | 104 |
| Requirements Analysis | 12 | 96 |
| System Design | 15 | 120 |
| Object Design | 14 | 112 |
| Implementation & Unit Test | 11 | 88 |
| System Integration & System Testing | 13 | 104 |

Note: Each engineer works for 8 hours a day & 5 days a week. Total project duration is 90 working days (excluding national holidays).

**Scheduling the tasks**

|  |  |
| --- | --- |
| **Date** | **Project Phases** |
| October 4 – October 20 | Requirements Elicitation |
| October 21 – November 8 | Project Planning |
| November 9 – November 24 | Requirements Analysis |
| November 25 – December 15 | System Design |
| December 17 – January 5 | Object Design |
| January 6 – January 20 | Implementation & Unit Test |
| January 21 – February 8 | System Integration & System Testing |

Note: We assume that only 80% time of an engineer per day will be used to develop software. Other 20% will be spending by reading emails, attending meetings, process improvement activities etc.

**List of milestones**

|  |  |
| --- | --- |
| **Date** | **Project Milestones** |
| September 27 | Project Presentation by Dhaka Subway Systems |
| October 4 – October 8 | Analysis Review |
| November 8 | Project Review with Dhaka Subway Systems |
| December 31 | Object Design Review |
| January 6 | Demo Software |
| January 16 | Internal Project Review |
| February 8 | Project Acceptance by Dhaka Subway Systems |

**Staffing plan**

To ensure a successful project completion a stuffing plan should be made to make sure that the project has enough skilled and quality staff. Here is a detailed list of the staffs who will play roles in various categories are given below-

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Role** | **Name** | **Estimated Working Hours** | **Key Project Phase** | **Staff required** | **Rate**  **(Per Hour)** |
| Project Manager | Iftekhar Hossain | 120 | All | 01 | $110 |
| Requirements analyst (Lead) | Nishadul Alam | 30 | Requirements | 01 | $90 |
| Requirements analyst | 1.Victor Roazrio  2.Azmal Hossain 3.Fakhrul Islam  4.Hasan Kabir | 20  15  20  30 | Requirements | 04 | $90 |
| Software Engineer (Lead) | Fazlul Kabir | 25 | System Allocation & Design | 01 | $100 |
| Software Engineer | 1.Asif Sarkar  2.Naeem hasan | 35  51 | System Allocation | 02 | $70 |
| Programmer (Lead) | Francisca Costa | 25 | Implementation | 01 | $130 |
| Programmer | 1.Shariful Bari  2.Benedict Rozario | 35  31 | Implementation | 02 | $110 |
| Verification Engineer | 1.Jaber Hossain  2.Asad Ullah | 35  37 | Requirements, Design,  Implementation | 02 | $65 |
| Software Designer | Khairul Alam | 70 | Design | 01 | $175 |
| Quality Analyst | Zaheer Khan | 30 | All (but up-front works most during definition) | 01 | $225 |
| Database Engineer | Rafid Azad | 25 | Design,  Implementation,  Installation | 01 | $85 |
| Configuration Manager | Tasfia Tasneem | 25 | All (but up-front works most during definition) | 01 | $60 |
| Technical Writer | Ismat Azam | 25 | Documentation | 01 | $100 |
| Installation Specialist | Salim Sadman | 25 | Installation | 01 | $110 |

Note: Most Staff will be required to attend weekly project status meetings, for which the dates are yet to be determined. All staff identified as “Leads” will be required to attend the meetings. Staffs who are in a group underneath a “Lead” will not be required to attend, while staff who have a “Lead” role, or who have no subordinate “Lead” will be required to attend.

**Monitoring and controlling mechanism**

The Project Manager will monitor the progress using the following means:

* Weekly Project Meetings will take place at the lead project manager’s room.
* Meetings will be held Monday at 11.30 am and inform each other of the progress made on various tasks. New tasks are assigned by the project manager during this meeting. Before project group meetings, project manager will study and will compose an agenda for the meeting. Team members can propose additional agenda points before or during the meeting.
* These meetings are scheduled once in a week. During these meetings, the Project Manager and Quality Assurance Manager Meet with the Senior Management.

The Following things need to be done before a progress meeting:

* A progress report of the last reporting period is written by the Project Manager.
* The Project Manager and Quality Assurance Manager read the minutes of the previous meeting.

A hard copy version of the progress report is delivered to the Senior Management.

**Risk management**

This mentions several possible risks for the project. Also, actions or measures are described to prevent or to reduce the risks.

* Communication collapse- Possibilities are there of breaking in communication between the team members. If it happens, it could lead to a slow progress work. If it happens then we will try hard to reach that teammate. If they become unreachable for a time being. We will be redistributing the works.
* Hardware incapacity- There is a chance that the company server could fall before, during or after deployment of our software. If this happens then no solution will come, it means this project will be unable to deliver to the sponsor. All necessary recovery steps will be taken as soon as possible.
* Defect at modeling/planning- If any defect or progress malfunction found during the project in our planning or modeling then the project will demand more time to complete.
* Political/Pandemic crisis- In case of any other political issue our workers will work on the weekends and If there any serious conditions occurs like Pandemic, they will be working from home to recover the lost time.

**List of deliverables**

Software Project Management Plan defining the technical and managerial processes necessary for the development and delivery of the system .

* Agreement between Dhaka Subway System and developers, representing a contract between the Dhaka Subway System and the developers of what is going to be delivered.
* Analysis Document describing the functional and global requirement of the system of 4 models. The use case model, the object model, the functional model and the dynamic model.
* System design describing design goals, the high level decomposition of the system, concurrency identification, hardware/software platforms, data management, global resource handling, software control implementation and boundary conditions. The document forms the basic of the object design.
* Object design is composed of two documents. The first document is an updated RAD.
* Test Manual describing the unit and system tests performed on the system before delivery along with expected results.

The System documentation is the principals of operation. The delivery consists of a presentation of a system.

**Defect tracking process**

* The project manager has to be  communicative towards the stakeholders of Dhaka Subway System.
* The communication between developer and project manager has to be more comfortable so that we can give updates and take feedback easily.
* When the  developer rejects a bug, the developer must allocate the bug  to the person  who can solve it with justification.
* Breakdown the whole execution procedure  into several parts, each parts can track down defects.
* By using error  monitoring tools.
* App bug reports.
* Defect with bug design.

**Metrics**

|  |  |  |
| --- | --- | --- |
| **Schedule** | **Milestones** | **MS Project** |
| **Staff Usage** | Graph of person used per month both projected and actual | MS Excel |
| **Expenditures** | Graph of total expenditures over time Both projected actual | MS Excel |
| **No. of Requirements** | Graph of total requirements Identical per module over time | MS Excel |
| **No. of Requirements Defects** | Graph of number of defects identified per module over time | MS Excel |
| **No. of Objects** | Graph of number of defects identified over time | MS Excel |
| **Coding Progress** | Number of objects coded | MS Excel |
| **Coding Size** | Line of code measured daily | MS Excel |
| **Test Progress** | Unit test cause passed over time | MS Excel |
| **Defect Tracking** | Number of code defects | MS Excel |
| **Test Progress** | Number of integration test passed over time | MS Excel |
| **Defect Tracking** | Number of code defects test Passed over time | MS Excel |

**Postmortem**

The overall project plan follows the model, a modified RAD Model. A graphical user interface, a functional protype, a system integration prototype those has to be delivered. Analysis is started before project planning is finished. The system design is followed by object design.

We hope we will complete this project successfully without any interruption.

The result of our project :-

* We can save our time.
* We can see exact seats availability.
* We can book a ticket from anywhere.

**The End**