

American International University- Bangladesh (AIUB) Department of Computer Science

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Project: Developing a Test Plan for Student Registration System for a University

Submitted to

MD. ANWARUL KABIR

Senior Assistant Professor

Department of Computer Science

Faculty of Science and Technology (AIUB)

##### Subject: SOFTWARE DEVELOPMENT PROJECT MANAGEMENT

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Submitted by

Name: Ahmed Arif

ID: 18-37994-2

Email: aimzarifj123@gmail.com

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**1.**

**Introduction:**

The test plans are like other documentation. they're dynamic in nature and must be maintained thus far. Therefore, they'll have revision number. Here the test plan for the project under taken named “Developing a test plan for student registration system for a university”. Though there are several standard formats to develop any test plan, I am going to use my own testing plans to develop the project. With plenty of lack in testing I will try and make the test pretty much as good as possible for the testers.

The test plan is going to be documented in a very structural way using step by step technique. Having limited experience, I tried my greatest to create the test plan as useful as possible. The test plan described below in an off-the-cuff way using sequential structure.

* Audience of the project are given below:
* **Internal:** People and groups inside your organization
  + Upper management
  + Requesters:
  + Project manager:
  + End users
  + Team members
* **External:** People and groups outside your organization
  + Clients or customers
  + Collaborators:
  + Vendors, suppliers, and contractors
  + Regulators:
  + The public:

**2.**

**Project Title**: Developing a Test Plan for Student Registration System for a University.

**3.**

**Objectives**:

1. Detention, display and print student details
2. Allocate admission number of every student
3. Modify, delete and edit
4. Allocate student to the registered class
5. Print student identity card
6. Capture department details
7. Capture class details
8. Allocate student to classes
9. Display active and non-active student
10. Capture registration form
11. Generate class, registration and student report form

**4.**

**Justification:** The purpose of this project is to permit the registration of scholars specifically course. its intended to be complete specifications of what functionality the admission provides. it'll also facilitate keeping all the net Student Registration records of student, like their id, name, address DOB, etc. So, all the knowledge a couple of students are going to be available in a very few seconds. Overall, it'll make Student Registration System a neater job for the administrator and therefore the student of any organization. the most purpose of this project is maybe the wants of the project Student Registration System and is meant to assist any organization to take care of and manage its student’s particular data.

**5.**

**Stakeholders analysis**: different types of stakeholders of the project are given below:

1. Student.
2. Tester
3. Designer
4. Developer
5. Program manager.
6. Project Manager.
7. Testing team.
8. Development team.
9. University authority.
10. Faculty members of university.

**6.**

**Feasibility study:**

**A. Technical feasibility:**

It helps administrations regulate whether the procedural resources meet capacity and whether the technical team is accomplished of adapting the concepts into working systems.

1. Test data
2. Database server o Network

o operating system/tools o Browser

o Hardware includes Server Operating system o Data recovery process.

Following people are involved in setup

1. System Admins,

o Developers

o Testers

o Sometimes users or techies with an affinity for testing.

Project Student Registration System for a University could be a wide-ranging web-based application. the most technologies and tools that are related to Student Registration System for a University are given below:

* HTML
* CSS
* JSP
* MySQL
* JS
* NetBeans
* .net framework
* Bootstrap
* Java script

Each of the technologies are freely available and therefore the technical skills required are manageable. Time limitations of the produce growth and therefore the simple executing using these knowledges are corresponding. Initially the net site is going to be hosted in an exceedingly free web hosting space, except for later implementations it'll be hosted in an exceedingly paid web hosting space with a sufficient bandwidth. Bandwidth required during this application is incredibly low, since it doesn’t incorporate any multimedia aspect. From these it’s proved that the project Student Registration System for a University is technically feasible.

**B. Financial feasibility:**

Being an online application Student Registration System for a University will have an associated hosting cost. Since the system doesn’t contain any interactive program data transfer, bandwidth required for the operation of this application is incredibly low. The system will track the freeware software values. No charge is going to be charged from the potential customers. Bug solutions and continuing tasks will have a related charge. At the initial stage the potential market space is going to be the local universities and better educational institutes. Beside the associated cost, there'll be many benefits for the shoppers. Especially the additional effort that's related to paper making and marking are going to be significantly reduced while the trouble to make descriptive statistical reports are going to be eliminated, since reports generation is fully automated. Since these it’s clear that the project Student Registration System for a University is financially feasible.

**7.**

**Systems component:** A work breakdown structure could be a key project deliverable that organizes the team's work into manageable sections. The Project Management Body of data defines the work breakdown structure as a "deliverable oriented hierarchical decomposition of the work to be executed by the project team." The work breakdown structure visually defines the scope into manageable chunks that a project team can understand, as each level of the work breakdown structure provides further definition and detail.

Work breakdown structure the entire systems into different component are given below:

**Work Breakdown Structure**

University registration system

1

Initiation

1.1

Planning

1.2

Execution

1.3

Control

1.4

Create Preliminary Scope Statement

1.2.1

Closeout

1.5

Evaluation

1.1.1

Develop Project Agreement

1.1.2

Deliverable: Submit Project Agreement

1.1.3

Determine Project Team

1.2.2

Project Team Meeting

1.2.3

Develop Project Plan

1.2.4

Project Kickoff Meeting

1.3.1

Verify & Validate User Requirements

1.3.2

Design System

1.3.3

Testing Phase

1.3.4

Project Management

1.4.1

Project Status Meetings

1.4.2

Risk Management

1.4.3

Update Project Management Plan

1.4.4

Review Finding

1.5.1

Update Files/ Records

1.5.2

Gain Official Acceptance

1.5.3

Documentation Files

1.5.4

**8.**

**Efforts estimation:**

As per the project doesn't have any historical data available and it contains unique characteristics, I’ve got decided to follow bottom up approach of estimation. Bottom up approach follows basic WBS (work breakdown structure) where effort for every bottom level task is estimated.

Bottom-Up Estimating:

• Detailed Work Breakdown Structure (WBS) is created

• Effort for every bottom-level activity is estimated

• Estimates for bottom-level activities are added to induce estimates for upper-level activities until overall project estimate is reached.

• Identify all tasks that must be done – so quite time-consuming.

• Appropriate at later, more detailed, stages of project planning.

• Advisable where a project is totally novel or there's no historical data available.

**Constructive Cost Model:**

The project type is semi-detached.

* Based on SLOC (source lines of code) characteristic, and operates according to the following equations:
* Effort = PM = Coefficient<Effort Factor>\*(SLOC/1000) ^P

=3.0\*(15) ^1.12

= 62.27 Staff months.

* Development Time = DM = 2.50\*(PM)^T

=2.50\*(62.27) ^0.35

=10.61 months.

* Required Number of people = ST = Effort (PM)/Development Time (DM)

= (62.27/10.61)

=5.86 number of people

*where:*

* PM: person-months needed for project=62.27staff months.
* SLOC: source lines of code=15kLoc.
* P: project complexity (1.04-1.24) =1.12 (semi-detached).
* DM: duration time in months for project= 10.61 months.
* T: SLOC-dependent coefficient (0.32-0.38) = 0.35(semi-detached).
* ST: average staffing necessary=5.86 numbers of people.
* Productivity:15000 Loc / 62.27 staff months=240.86 / staff months.

|  |  |
| --- | --- |
| Item | Semi-detached |
| Effort (Staff-months) | 62.27 |
| Development Time | 10.61 |
| Average Staff | 5.86 |
| Productivity | 240.86 |
|  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Software Project Type | Coefficient  **<Effort Factor>** | P | T |
| Organic | 2.4 | 1.05 | 0.38 |
| Semi Detached | 3.0 | 1.12 | 0.35 |
| Embedded | 3.6 | 1.20 | 0.32 |

**9.**

* **Activity Scheduling Diagram:**
* Throughout a project, we require a schedule that clearly indicates when each of the project’s activities is planned to occur and what resources it will need.
* One way of represent a project plan is to use a Gantt chart.

Gantt chart of the project:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Weeks  Task  person | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| A: P1 |  |  |  |  |  |  |  |  |  |  |  |  |
| B: P2 |  |  |  |  |  |  |  |  |  |  |  |  |
| C: P3 |  |  |  |  |  |  |  |  |  |  |  |  |
| D: P1 |  |  |  |  |  |  |  |  |  |  |  |  |
| E: P2 |  |  |  |  |  |  |  |  |  |  |  |  |
| F: P3 |  |  |  |  |  |  |  |  |  |  |  |  |
| G: P2 |  |  |  |  |  |  |  |  |  |  |  |  |
| H: P4 |  |  |  |  |  |  |  |  |  |  |  |  |
| I: P4 |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

**Activity key of the Gantt Chart:**

A: Overall design.

B: Specify module 1

C: Specify module 2

D: Specify module 3

E: Code module 1

F: Code module 2

G: Code module 3

H: Integration Testing

I: System testing

**The Network Diagram**

* **Adding the time dimension**
* The **Forward Pass** –Identify the **Earliest** **Date** an Activity Can Start
* The **Backward** **Pass** –Identify the **Latest** **Date** an Activity Can Start Without Delaying the End Date of The Project
* Identifying the **Critical** **Path** (defines the duration of the project; any delay to any activity on this critical path will delay the completion of the project)
* **Activity Float:**
  + **Total Float** (LF – ES – Duration
  + **Free Float** (time by which an activity may be delayed without affecting any subsequent activity)
  + **Shortening the Project Duration**
* **Identifying Critical Activities**
  + The critical path
  + The near-critical path
  + Dynamics and monitoring
* **Project Activity:**

Project specification with satisfied with estimated activity diagram and precedence requirements

|  |  |  |
| --- | --- | --- |
| Activity | Duration(Weeks) | Precedents |
| **A** Hardware selection | 6 | ***-*** |
| **B** Software design | 4 | ***-*** |
| **C** Install hardware | 3 | **A** |
| **D** Code and test software | 4 | **B** |
| **E** File take-on | 3 | **B** |
| **F** Write user manuals | 3 | ***-*** |
| **G** User training | 3 | **E, F** |
| **H** Install and test system | 2 | **C, D** |
|  |  |  |

**Table: Project Activity**

**The Activity Network Diagram**

|  |  |  |  |
| --- | --- | --- | --- |
| A | | 6wks | |
|  | Hardware  design | |  |
|  |  |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| C | | 3wks | |
|  | Build  hardware | |  |
|  |  |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| B | | 4wks | |
|  | Software  design | |  |
|  |  |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| H | | 2wks | |
|  | Install and test | |  |
|  |  |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| A | | 6wks | |
|  | Code  software | |  |
|  |  |
|  | | | |

Start

Finish

|  |  |  |  |
| --- | --- | --- | --- |
| G | | 2wks | |
|  | User training | |  |
|  |  |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| F | | 10wks | |
|  | User manual | |  |
|  |  |
|  | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| E | | 3wks | |
|  | File  take-on | |  |
|  |  |
|  |  |
|  | | | |

**Figure:1.1. The precedence network for the project**

* Activity diagram for scheduling my project.

**The Activity Network Diagram**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A | | 6wks | | |
| 0 | Hardware  design | | | 6 |
| 2 | 8 |
| 8wks | | | 2wks | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| C | | 3wks | | |
| 6 | Build  hardware | | | 9 |
| 8 | 11 |
| 5wks | | | 2wks | |

|  |  |  |  |
| --- | --- | --- | --- |
| H | | 2wks | |
| 9 | Install and test | | 11 |
| 11 | 13 |
| 6 wks | | 4 wks | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A | | 6wks | | |
| 4 | Code  software | | | 8 |
|  |  |
|  |  |
| **7** | 11 |
| **7** wks | | | **3** wks | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| B | | 4wks | | |
| 0 | Software  design | | | 4 |
| **3** | **7** |
| 7 wks | | | 3 wks | |

Start

Finish

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| G | | 2wks | | |
| 10 | User training | | |  |
| 10 |  |
| 3 wks | | | 0 wks | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| F | | 10wks | | |
| 0 | User manual | | | 10 |
| 0 | 10 |
| 10 wks | | | 0 wks | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| E | | 3wks | | |
| 4 | File  take-on | | | 8 |
| **7** | 11 |
|  |  |
| 6 wks | | | 3 wks | |

**Figure:1.2. The Critical path**

**10.**

**Risk Analysis:**

**1**.Requirements change of clients: This is a large problem for development jobs as

well as testing jobs**. [Moderate]**

Solution: Gather overall requirement from client.

**2**.Budget issues: Due to lack of resources or time that increases cost. The planning

did not work as it was supposed to do. **[Moderate]**

Solution: Clients increase their budget or payment.

**3**.Lack of software testing tools: Advanced or update software testing tools makes testing easier, reliable, saves time. **[High]**

Solution: Arrange more software testing tools that is more comfortable or efficient for testing.

**4**.Understanding of testing team member with incomplete or inappropriate requirements**. [High]**

Solution: Discuss about requirement analysis specification with testing team members.

**5**.Shortage of staff in development and testing team**. [High]**

Solution: Increase in more advantage for meet their satisfaction is fulfilling.

**11.**

**Conclusion:**

The appropriate management of risk ensures improved outcomes for student and college, generates confidence within the system, and features a positive impact on trust within the online university system Limitations and Possible Future Improvements. the most objective of this application is to automate the entire operations of the scholar registration system. they have maintained many thousands of records. Also searching should be very faster therefore the student can find required details instantly. To develop a web-based portal to facilitate the co-ordination between student and college of the university. this technique makes conveniently available good quality of interval, safe usage and other functional components, which might be provided in an exceedingly sound, ethical and acceptable manner, in keeping with the long-term wellbeing of the university. It actively encourages student portal, motivate and maintain a well-indexed record of scholars and college educate the university on the advantages of communication. this can also function the positioning for interaction of best practices in reducing unnecessary utilization of your time and help the state work more efficiently towards self-sufficiency on university portal. The system will provide the scholar the choice to seem at the small print of the, notices, result and every one varieties of details of study. It also allows the user to switch the record. The administrator can alter all the system data

**…**