**Software Project Management Plan**

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# PREFACE

Tic Tac Toe is a two-player game where the first player to connect a line of pieces from one side or corner of the board to the other wins. The game is for all ages. However, due to its simplicity and its capability to improve mind's reasoning skills, the game is considered as a very good mental exercise for children.

The game can be played on a paper and on a computer. The purpose of this project is to design the computer version of the game.

# 1. Overview of the Product

## 1.1 Purpose Scope & Objective

This document serves as the project plan for the Tic-Tac-Toe (3T) game. The document summarizes the key elements of time, cost and resources. It also establishes the scope and describes the limitations of the project.

The objectives are to complete the project by March 6th, 2013, and within budget. A commitment has been made to provide all deliverables by the due date.

## 1.2 Assumptions & Constraints

In the project management world, absolute certainty is almost uncertain. As projects are planned and executed, some facts and issues are known and others must be estimated. This project is being planned with the assumptions that the game will not be run on any platform other than computers running windows operating systems. As the project moves forward, the following constraints are to be kept in mind:

- Budget: All expenses are to be kept within $20, 000.

- Time: The project is to be completed by March 6th, 2013.

**1.3 Project Deliverables**

All deliverables requested by the client are listed below.

|  |  |  |  |
| --- | --- | --- | --- |
| **Major Deliverable** | **Planned Delivery Date** | **Author** | **Delivery Mechanism** |
| Product Design and Specifications |  | All group members | In person |
| Product Interface |  | Ibra Cisse | In Person |
| Product with a functional multiplayer game |  | Ibra Cisse | In Person |
| Product with a functional Database |  | Ibra Cisse | In Person |
| Final Product |  | All group members | In Person |
| Final Documentation |  | All group members | As files |
| Maintenance & Support Plan | Throughout the life cycle of the product | All group members | In person |

## 1.4 Schedule & Budget Summary

The project has the following schedule:

• Delivery of baseline project plan: March 6th, 2013

• Game ready for operation: April 30th, 2013

The project has a budget of $48,000. The monthly maintenance cost should not exceed $28000.00.

## 1.5 Evolution of the Plan

The plan will be updated weekly and on an unscheduled basis as necessary. Scheduled update will occurs every Saturday morning between 8am and 12pm.

All notification of updates will be sent by emails. All team members are also required to log on Google Drive at least twice a week to view changes made by others.

# 

# 2. References

|  |  |  |
| --- | --- | --- |
| **Resource** | **Identifier** | **Description of Use** |
| www.webopedia.com | website | Used for Definitions & Acronyms |
| Object Oriented Intro to software Engineering | Stephen R. Schach  (Vanderbilt University) | Book that teaches how to develop a software product |
| Couchbase |  | NoSQL database |
| Visual Studio |  | Microsoft IDE for developing C# |

# 3. Definitions & Acronyms

|  |  |
| --- | --- |
| **Term** | **Definition** |
| 3T game | Tic Tac Toe game |
| TTT game | Tic Tac Toe game |
| T^3 game | Tic Tac Toe game |
| Platform | The hardware and support software with which a program is intended to operate. |
| Database | Is a way to keep a record of information such as the players’ name and score |
| Client/Server System | Relationship between processes running on separate machines. A client initiates the dialog by sending requests to the server asking for information or action. |
| GUI | A graphical user interface is a human-computer interface (i.e., a way for humans to interact with computers) that uses windows, icons and menus and which can be manipulated by a mouse (and often to a limited extent by a keyboard as well). |
| 6x6 Tic Tac Toe | A game that is played with two players, X and O, who take turns marking spaces usually in a 5x5 grid. The player that succeeds in placing four respective marks in either horizontal, vertical, or diagonal row wins the game. |

# 4. Project Organization

## 4.1 External Interfaces

The client, Shengli Yuan is constantly in contact with the project manager for any concern about the project. Brandon has also participated to most important meetings.

## 4.2 Internal Structure

## 4.3 Roles & Responsibilities

The following people are participants in this project and included in the project planning.

|  |  |  |
| --- | --- | --- |
| **Roles** | **Responsibilities** | **Person** |
| Lead | Lead the planning and execution of the project, chair workgroup | Ibra Cisse, Eddie |
| Project Owners | Ensure adequate resources are available and track project status | Ibra Cisse, Eddie, Jason, Carrie, Alexis, Alfonso |
| Project Workgroup | Plan and design the Commons, advise Implementation Workgroup | Ibra Cisse, Eddie, Jason, Carrie, Alexis, Alfonso |
| Project Team Management | The project manager coordinates the project tasks assigned to team members | Ibra Cisse, Eddie, Jason, Carrie, Alexis, Alfonso |

## 

# 5. Managerial Process Plans

## 5.1 Start-Up Plan

### Training

No additional staff training is needed for this project

## 5.2 Work Plan

### 5.2.1 Work Activities

Refer to section 5.2.2

### 5.2.2 Schedule Allocation

|  |  |  |
| --- | --- | --- |
| Date | Status | Comments |
| Week 1 | Completed | Formed group and assigned roles. Met with client, to determine the requirements artifacts. Inspected requirements artifacts. |
| Week 2 | Completed | Design pseudocodes; GUI, game logic and database schema.  Start of documentation - produced analysis artifacts, and inspected analysis artifacts. |
| Week 3 | Completed | Began product design – GUI and game logic. Produced software project management plan. |
| Week 4 | Completed | Continue product design - GUI and game logic. |
| Week 5 | Completed | Continue product design - GUI and game logic. |
| Week 6 | Completed | Continue product design - GUI and game logic. |
| Week 7 | Completed | Completion of product Interface. |
| Week 8 | Completed | Completion of product game logic |
| Week 9 | Completed | Create database for connectivity to interface. |
| Week 10 | Completed | Established connectivity from database to interface. |
| Week 11 | Completed | Tested connectivity between database and interface. |
| Week 12 | Completed | Start product design – game AI |
| Week 13 | Completed | Continue product design – game AI |
| Week 14 | Completed | Complete documentation |
| Week 15 | In Progress | Delivery of the product |
| Week 16 | To be determined | Product maintenance & support |

\*Product testing, SQA walkthroughs, performance feedback, error handling, and customer communication were continuously applied throughout the life cycle of the product.

### 5.2.3 Resource Allocation

See section 4.3 Roles & Responsibilities

### 5.2.4 Budget Allocation

Requirements workflow: $4,000

Analysis workflow $8,000

Design workflow $7,000

Implementation workflow $18,000

Testing workflow $11,000

--------------------------------------------------

Total $48,000

**5.3 Control Plan**

Any change made to any document that has already been reviewed has to be approved by all team members. The team will have to ensure that the changes are feasible and permissible within the time and budget constraints of the project.

### 5.3.1 Requirements Management

|  |  |  |
| --- | --- | --- |
| **Requirements Management Activities** | **Performed By Whom** | **Comments** |
| Team communication | Ibra |  |
| Setup communication tools | Eddie |  |

### 

### 5.3.2 Schedule Control

If the work scheduled in section 1.4 is gets behind, the owner of the person in charge of the task will spend extra time on the project in between and after the schedules and also during to make up for the lost time and deliver the final project on time.

### 5.3.3 Resource Control

Resources are allocated as mentioned in section 4.3. Each resource is responsible for the task assigned to him/her. If a task gets behind schedule, the resource will need to spend extra time to make up for the time loss.

### 5.3.4 Budget Control

All members are required not to exceed the allocated budget no matter the extra time they are spending on late assignments.

### 5.3.5 Reporting & Communication Plan

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Information** | **Frequency** | **From** | **To** | **Medium** |
| Produce analysis artifacts, and inspected analysis  artifacts | 2 | All (done during a meeting) | All (done during a meeting) | -meeting  -emails  -voicemails |
| Design the Winning Combination for the game | 2 | All (done during a meeting) | All (done during a meeting) | -meeting  -emails  -voicemails |
| Designing the game | 6 | All (done during a meeting) | All (done during a meeting) | -meeting  -emails  -voicemails |
| Testing | 4 | All (done during a meeting) | All (done during a meeting) | -meeting  -emails  -voicemails |
| Documentation | 3 | All (done during a meeting) | All (done during a meeting) | -meeting  -emails  -voicemails |

### 

### 5.3.6 Measurement Plan

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Measure Required** | **Frequency Collected** | **Collected By Whom** | **Analyzed By Whom** | **Used By Whom** |
| Produce analysis artifacts, and inspected analysis artifacts | Every two days | Project manager | Project manager |  |
| Designing the game | Every three days | Project manager | Project manager |  |

## 

## 5.4 Risk Management Plan

The risk management process will identify potential risk sources; assess individual risks and impacts on performance, cost, and schedule.

|  |  |  |
| --- | --- | --- |
| **Risk Management Activity** | **Performed By Whom** | **Comments** |
| Project Scope | Project manager | The project manager will ensure that the following risks are understood and how to avoid them:  Risks that the scope is not understood, requirements not documented properly, requirements not agreed upon by customer |
| Management | Project manager | Project manager is not actively engaged in project, project issues are not addressed, changes are not controlled and project scope grows beyond original boundaries |
| Technology | Project manager | Client infrastructure is not reliable |

### 

## 

## 5.5 Closeout Plan

|  |  |  |
| --- | --- | --- |
| **Closeout Activity** | **Performed By Whom** | **Comments** |
| Staff reassignment plan | Project manager |  |
| Archiving project materials | All team members |  |
| Preparation of a final report to include lessons learned and an analysis of project objectives achieved | Project manager |  |

# 

# 6. Technical Process Plans

## 6.1 Process Model

This project will be implemented and executed using the waterfall life-cycle model.

**6.2 Methods, Tools, & Techniques**

This project adapts the system for use on a Personal Computer using a Visual Interface that would be built using Visual Studio 10 with C# environment, and NoSQL databases.

### Programming Environment

Use visual Studio with C# environment. The main extension used is the new GIT extension from Microsoft TFS

### Database Environment

The chosen database is MySQL that allows easy scaling and fault tolerant deployment. It is a document oriented database that allows modification of the schema with zero downtime.

<http://www.couchbase.com/>

### Version Control

GIT is the version control tool, used and the repository of the project files resides on GITHUB, a public GIT hosting provider. https://github.com/Amatarasu/

### Documentation

* Visio for all diagrams, flowchart
* Google Docs for all documents
* Microsoft Project for the project management
* GitHub to easily communicate with

### Testing

The testing workflow of the Unified Process will be performed

## 

## 6.3 Infrastructure Plan

The hardware resources are at least four computers (prefer Intel Core i5-3330 Processor) running Windows 7 or Windows 8 Operating System. Each of these computers should have at least 2GB RAM and a minimum of 60 GB of disk space.

## 6.4 Product Acceptance Plan

The customer accompanied by the lead will test the final product for acceptance.

## 

## 6.5 Deployment Plan

# 

# 7. Supporting Process Plans

## 7.1 Configuration Management Plan

All the project deliverables are to be considered as configuration items. The configuration item as well as its file would be named after the document like Documentation, Installation and followed by the version number. For example, all the preliminary versions that are submitted to the client for review would be named with the file name followed by 0.1, 0.2. After the client reviews and approves an item, the version would change from 0.1 to 1.0 and distributed to all team members. Informal updates will be numbered with 1.1, 1.2, etc.

## 7.2 Product Testing & Reviews Plan

Testing and Review will be addressed as a part of the Software Quality Assurance and Verification & Validation Plan.

## 7.3 Document & Work Product Plan

### Requirements

|  |  |
| --- | --- |
| Version | 0.1 |
| Date | Feb 10th, 2016 |
| Author | Ibra Cisse |
| Access information | Drop box and also GitHub |

### Product Specification

|  |  |
| --- | --- |
| Version | 0.1 |
| Date | Feb 12th, 2016 |
| Author | Ibra Cisse |
| Access information | Drop box and also GitHub |

### Design Documentation

|  |  |
| --- | --- |
| Version | 0.1 |
| Date | Feb 12th, 2016 |
| Author | Ibra Cisse |
| Access information | Drop box and GitHub |

### Implementation Documentation

|  |  |
| --- | --- |
| Version | 0.1 |
| Date | Feb 12th, 2016 |
| Author | Ibra Cisse |
| Access information | Drop box and GitHub |

### Test Documentation

|  |  |
| --- | --- |
| Version | 0.1 |
| Date | Feb 14th, 2016 |
| Author | Ibra Cisse |
| Access information | Drop box and GitHub |

## 7.4 Quality Assurance Plan

|  |  |
| --- | --- |
| Version | 0.1 |
| Date | Feb 20th, 2016 |
| Author | Ibra Cisse |
| Access information | Drop box and GitHub |

## 7.5 Project Progress Reviews

## 

## 7.6 Issue Management

Any major problems faced by the team members will immediately be reported to the lead

## 7.7 Version Management

|  |  |  |
| --- | --- | --- |
| **Change Management Activities** | **Performed By Whom** | **Comments** |
| Software management plan v1.0, v1.1 | Ibra Cisse |  |
| Requirements v1.0 |  |  |
| Specifications v1.0 |  |  |
|  |  |  |

## 7.8 Subcontract Management (Acquisition Management) Plan

## 7.9 Process Improvement Plan

All activities will be conducted in accord with the company plan to advance from capability maturity model (CMM) level 2 to level 3 within 2 years.

# 

# Document Control

## Change History

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Description (Including Page #’s)** |
| 1.0 | 3/03/2016 | Ibra Cisse | Specification |
| 1.0 | 3/03/2013 | Ibra Cisse | Requirements |
| 1.0 | 3/03/2016 | Ibra Cisse | Software Management PLAN |
| 1.0 | 3/03/2016 | Ibra Cisse | Presentation slides |

## Document Storage

https://github.com/Amatarasu

## Document Owner

* Ibra Cisse

# 

# Appendices

|  |  |  |
| --- | --- | --- |
| **Appendix** | **Title** | **Location Or Link** |
| None | Software Management Plan | https://github.com/Amatarasu76 |