**Software Project Management Plan**

**1 Overview**

**1.1 Project summary:** The project is to create a 6x6x4 tic-tac-toe computer game that allows a player to play against another person, or to play against 3 difficulties of AI.

**1.1.1 Purpose, scope, and objectives:** The purpose of this project is to create tic-tac-toe game on a 6x6 grid on an appropriate GUI. Players/Computers will take turn placing colored stones and will receive points if 4 of the same colors stone, that they are placing, are lined up (either horizontally, vertically, and/or diagonally). The player can register a user name or play as a guest. The program will keep track of the history of each play and be able to tell the user what has happened. The user will be able to select the difficulty of the AI and who goes first. The computer will play each other in class and bonus points will be awarded to the best one.

**1.1.2 Assumptions and constraints:** The delivery date is on 4/26/2016. The client will be updated with a presentation and documentation on, 2/23/2016, and 3/29/2016. The computers will compete against each other on 4/28/2016. The budget is zero dollars since we are all volunteers.

**1.1.3 Project deliverables:** The client will receive the program on 4/26/2016. The client will be updated with a presentation and documentation on, 2/23/2016, and 3/29/2016. The computers will compete against each other on 4/28/2016 for extra credit.

**1.1.4 Schedule and budget summary:** The budget is zero dollars since we are all volunteers.

Schedule:

|  |  |  |
| --- | --- | --- |
| **Name** | **Dates** | **Description** |
| **(Requirements Phase)**  Begin Preliminary documents and discuss needs with clients. | 1/18/16 – 2/20/16 | The architecture of how we want to proceed will begin after discussing with the client the needs of the program. |
| **(Specification Phase)**  Finish preliminary documents | 2/21/16 | Finish the preliminary requirements, product specifications, and software project management plan |
| Presentation | 2/23/16 | Update the client with information and get feedback |
| Implement Feedback | 2/23/16 –3/30/16 | Use the feedback from client to update program |
| **(Design Phase)**  Finalize Details and begin program architecture | 2/23/16-3/30/16 | Discuss the positives and negatives of which language the program should be in and determine how the GUI should look. |
| **(Implementation phase)**  Complete Documents  Finish preliminary documents | 3/27/16 | Finish requirements, product specifications, and software project management plan.  Finish preliminary detail design and test plan. Prototype of the program will be in beta phase. |
| Presentation | 3/31/16 | Update the client with information and get feedback |
| Implement Feedback | 3/31/16 – 4/14/16 | Use the feedback from client to update program |
| Finalize testing of program | 4/15/2016 | Ensure the program does everything the client needs it to |
| Final Submission | 4/16/2016 | Final Project turn in |
| Computers Compete | 4/28/2016 | Ai’s fight each other for bonus points |

**1.2 Evolution of the project management plan:**  The procedures and schedule that we will be following can be changed if the majority of the group decides it is for the best. The client’s opinions will heavily influence the group’s decisions, but ultimately it will be the groups choice. This includes the project management plan itself.

**2 Reference materials.** Object-Oriented and Classical Software Engineering, 8th editionby Stephen R. Schach

**3 Definitions and acronyms:**

GUI: Graphical User Interface

6x6x4: 6 units wide and 6 units in height and requires 4 in a row for a point.

AI: Artificial intelligence.

API: Application Programming Interface.

**4 Project organization.**

Taylor Rowan: Team Lead

Zach Meier: Secretary

Imran Hussain: Secretary

Daniel Owen : Lead Programmer

Yiming Zhu: Lead SQA

**4.1 External interfaces:** No contractors will be hired for the program. Dr. Shengli Yuan is the client and is the only party member in his organization that we will be interviewing for the requirements and feedback.

**4.2 Internal structure:** All team members have equal say with regards to the project, and each member can provide support for any of the roles as well as his own. The main link between the clients needs and the program will be conducted between Mr. Taylor Rowan and Dr. Shengli Yuan.

**4.3 Roles and responsibilities:**

Taylor Rowan: Overview Project and ensure clients needs are met at each phase.

Zach Meier: Software Project Management Plan, Test Plan

Imran Hussain: Product Specifications, Detail Design

Daniel Owen : Develop and test program

Yiming Zhu: Quality assurance, product testing

**5 Managerial process plans**

**5.1 Start-up plan**: We will begin the project by interviewing the client and ensuring that we know as much as possible about what he needs for the program. Then we will discuss the best way to develop the program and how it should look. From there we can determine the best language to use and implement it.

**5.1.1 Estimation plan**. The project duration time is fixed and cannot be changed. As we group we must make sure to adequately plan to make this deadline. The cost for the project will be zero dollars.

**5.1.2 Staffing plan**. There will be 5 team members for the entire project and they will be working on the project from the beginning to the end.

**5.1.3 Resource acquisition plan**. The necessary information will be provided by the client. The other tools will be acquired as need by the staff. This includes the API, and the tools used for the GUI.

**5.1.4 Project staff training plan**. Our team will be using a self training method in which we will self teach each other depending on what information we need to acquire.

**5.2 Control plan.**

**5.2.2 Schedule control plan.** In this subsection, mechanisms for measuring progress

are listed, together with a description of the actions to be taken if actual progress lags

behind planned progress.

**5.2.4 Quality control plan.** The quality of the project will be lead by Mr. Yiming and each other team member will be checking as well to ensure the best quality.

**5.3 Risk management plan.** The risks in the project will be mitigated by ensuring the needs of the client are met in the very beginning. Documents will be kept and all version of the software in case we need to backtrack. These files will be saved on github.com. This will maximize our chances of finishing the project on time. The worst case scenario is turning the project in late so timeliness is a priority. There is also the risk that a classmate drops the course or is unable to continue working on the project. If this happens, Zach Meier, will leave as a secretary and take over that persons role. If 2 people leave, then Taylor Rowan will assume 2 roles. If 3 or more leave, then we will discuss further options with the client.

**5.4 Configuration control plan.** Major changes will be decided by a team vote and all team members must participate in this. Major changes include but are not limited by: language change, architecture change, role change, or tool change.

**5.5 Project close-out plan.** After the completion of the competition on 4/28/16, the project will be retired.

**6.1 Process model.** We will be using the iterative-and-incremental life-cycle model.

**6.2 Methods, tools, and techniques.** The language that is most likely to be used is C++ and the GUI will be conducted using a program call Construct 2.

**6.3 Documentation plan.** All documentation will be submitted to Github.com for the whole group to view and edit.