Technical Design Document (TDD)

**Project 4 – Real Time Strategy Single Player**

Team Beatles – All You Need Is Love

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Executive Summary

**Project**

Create a single-player, real-time strategy game based off of the board game Settlers of Catan. There are deviations from the game, such as fewer resource types and restricted actions, and the game only accepts a single player. This project will be broken into three categories: Game Content Creation, User-Centered Design/External Tool Creation, and User Generated Content.

The game portion will have the options to create, load and quit the game. Creating a game also creates a new game file, while loading a game opens an existing, external text file. Quitting the game only closes the game with no saves. Game turns will be broken into seven phases--two of which are one time uses--with the first and last being one-time-only actions to start and end the game.

The Tool Creation portion allows the user to create the map and place player resources and structures. The UGC portion is linked in that it will help the user create an export to be saved in an external file. While the UGC portion is extra credit, it should be made to handle multiple external files.

**Technical**

Programs

The following programs will be required for the creation of Around the World:

|  |  |  |
| --- | --- | --- |
| *Program* | *Purpose* | *Cost* |
| Unity3d | Game Development Environment | $1500 |
| Audacity | Sound Creation | Free |
| Microsoft Visual Studio 2015 Community | Debugging Environment | Free |
| G.I.M.P | 2D Image Manipulation | Free |
| Blender | 3D Graphics and Animation | Free |

Market Release

User Rails will be an in house tool with no release.

Time to Completion

The total estimated completion time for Shooter on rails is two weeks. That includes time for coding and bug testing. It will be turned in September 28, 2015

estimated Cost of Completion

|  |  |
| --- | --- |
| Unity3d for 3 | $4,500 |
| 60 Hours Salary | $1,620.00 |
| **Total** | **$6,120.00** |

Hardware and Software

**Programming Software**

|  |  |  |
| --- | --- | --- |
| Software Name | Description | Cost |
| Microsoft Visual Studio | Used to debug and create code | Free |
| MonoDevelop | Used to create prototype code | Free with Unity3D |
| Unity3D | Development Environ-ment. Used to release to multiple platforms. | $1500 |

Development Plan

**Milestones**

|  |  |
| --- | --- |
| Date | Milestone |
| 9/28/2015 | TDD Mockup Completed |
| 10/05/2015 | Prototyping Startup, TDD turned in |
| 10/07/2015 | Engine Completed |
| 10/09/2015 | Tool Features Created and Editor Work Started |
| 10/11/2015 | Software Created and Entirely Bug Free |
| 10/12/2015 | Complete and Submitted to Professor Fisher |

**Project Goals**

Features

Checklist provided

* Main Menu Scene with 3 buttons
  + Create Game
  + Load Game
  + Quit Game
* Create Game Scene - with maps listed for the user to select, and a back option
* Information Scene – gather player name & name of game, record the info, and then allow the player to start the game. Also has a back or cancel option
* Load Game Scene – has game name & player names listed for the user to load, and a back/cancel option
* Main Game Scene including
  + Map
  + Settlements and Road Support
  + GUIs for the following
    - Resources
    - Navigating Turns
    - Showing which part of the turn the user is in
    - Allowing the player to save/quit
    - Trading (Extra Credit)
    - Winning/Losing
* Data heuristic for saving/loading data
* Turn Phases for player
  + Phase 0 – Game Start
  + Phase 1 – Rolling for Resources
  + Phase 2 – Trading (Extra Credit)
  + Phase 3 – Building Structures
  + Phase 4 – End Turn
  + Phase 5 – Processing Actions (dummy phase for this round)
  + Phase 6 – End Game

File Formats

**Scripts**

|  |  |  |
| --- | --- | --- |
| Naming Convention | Description | Format |
| FilenameEditor | Editor script for an object script | .cs |
| FilenameDrawer | Editor script for an individual element script drawer | .cs |
| Filename | A script for an object | .cs |

**Scenes**

|  |  |  |
| --- | --- | --- |
| Naming Convention | Description | Format |
| SceneName | A scene in Unity3D | .scene |

**Other**

|  |  |  |
| --- | --- | --- |
| Naming Convention | Description | Format |
| TDD\_Project4\_Final | The final version of the Technical Design Document | .pdf |
| P04 RTS SP | Unity game package for board game | .unity |
| P04-Map Maker | External Case to | .cs, Visual Studio 2015 solution |

Asset List

Accountability

Andrew

* IO – game state
* Game data scene
* Load game scene
* Play gui
* Phase 6 - victory

Gipson

* Tool
* IO - world
* Map loading
* World menu
* Phase 0 – game start
* Phase 1 - roll

Victor

* Main menu
* Settlements and road
* phase 3 - build
* Phase 4 – end turn
* Phase 5 - processing

Stretch

* Trade phase
* Random world on load
* World scrambler/random world change

Update/work log

9/28/15 - TDD created, tool work started.

9/29/15 – updated with responsibility list and stretch goals