Technical Design Document (TDD)

**Project 5 – Real Time Strategy Multi-Player**

Team Very Nice Job

Members: Victor Haskins, Nathan Boehning, Jake Skov



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Executive Summary

**Project**

Modifying from a single-player, real-time strategy game based off of the board game Settlers of Catan, we are creating a multi-player version of the same game. There are deviations from the game, such as fewer resource types and restricted actions, but we are expanding from that by adding the ability to work with multiple players. This project will focus on the following categories: Networking for multiple players, Modification of existing Features to handle multiplayer, Multi-player UI functionality, Trading Resources, and User Generated Content finalization.

**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

Multiplayer Non-Settlers is an in-house creation with no market release.

Time to Completion

The total estimated completion time for Multiplayer Non-Catan is two weeks. That includes time for coding and bug testing. It will be turned in October 26, 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 |
| 10/14/2015 | TDD Mockup Completed |
| 10/16/2015 | Prototyping Startup, TDD turned in, Trade UI done |
| 10/19/2015 | Find majority of modifications needed for networking/multi-player |
| 10/21/2015 | PlayerScript Modded for Networking, FileExport Complete, ~~Trade Implementation partially working.~~ |
| 10/23/2015 | Multiplayer modifications implemented, Trade Implementation partially working (now on Jake). |
| 10/25/2015 | ~~Software~~ Created and Entirely Bug Free |
| 10/26/2015 | Complete and Submitted to Professor Fisher |

**Project Goals**

Features

Checklist provided

* Create Game Scene – updated for Multi-player
* Lobby Scene – Shows Connected players and colour assigning
* Main Game Scene including
  + Map – updates for multi-player
  + Settlements and Road Support – updated for multiplayer.
  + 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 modified for multi-player
* Turn Phases for player
  + Phase 0 – Game Start - Done
  + Phase 1 – Rolling for Resources – Add code to handle all players
  + Phase 2 – Trading – Add Entire Phase w/networking implementation
  + Phase 3 – Building Structures – add multiple player functionality.
  + Phase 4 – End Turn – holding phase to wait on players that have not taken their turns. Possibly use functionality as is described in next phase.
  + Phase 5 – Processing Actions – Update game state including player switch and end game.
  + 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\_Project5\_Final | The final version of the Technical Design Document | .pdf |
| Project05\_MultiPlayer | Unity game package for board game | .unity |

Asset List

Accountability

Jake

* Heavy TDD Support
* UGC
* Level Select
* Trade UI
* Scenes - Lobby
* Trade Implementation

Nathan

* Heavy TDD Support
* Networking Implementation

Victor

* TDD Creation
* ~~Trade Implementation~~
* Assist with Networking

Stretch

* Chat Log
* Game Log

Update/work log