Technical Design Document (TDD)

**Settlers of Not-Catan**

Team Magnet-Less Non-Reciprocal Metamaterials

Version: 1.1

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Executive Summary

**Project**

In this project we are building a settlers game where players buy roads and settlements in order to gain and build up resources to ever expand their growing population. Players will first gain one settlement and one road for free. Once per round they will roll a dice to determine if they will be gaining resources from the areas around them. If they collect enough resources they will be able to purchase new roads and settlements. When the player gains enough roads and settlements then they will win the game.

**Technical**

Programs

The following programs will be required for the creation of Settlers of Not-Catan:

|  |  |  |
| --- | --- | --- |
| Program | Purpose | Cost |
| Unity3d | Game Development Environment | $1500 |
| Audacity | Sound Creation | Free |
| Microsoft Visual Studio | Debugging Environment | $299 |
| G.I.M.P | 2D Image Manipulation | Free |
| Blender | 3D Graphics and Animation | Free |

Time to Completion

The total estimated completion time is two weeks. That includes time for coding and bug testing.

estimated Cost of Completion

|  |  |
| --- | --- |
| Unity3d  Visual Studio  60 hours / 3 Programmers | $1500 x 3  $299 x3  $27.00 x 60 |
|  |  |
| **Total** | **$7017.00** |

Hardware and Software

**Programming Software**

|  |  |  |
| --- | --- | --- |
| Software Name | Description | Cost |
| Microsoft Visual Studio | Used to debug and create code | $299 |
| 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 |
| 9/30/2015 | TDD Complete |
| 10/2/2015 | IO planned |
| 10/5/2015 | Phase planning outlined. IO framed. Tool design complete |
| 10/7/2015 | Phase transitions completed. IO Save file creation complete. ¼ of tool completed(base window) part of gui (buttons for phase transition). |
| 10/9/2015 | Phase contents ½ completed. File loading completed. GUI complete, ½ of tool. |
| 10/12/2015 | Complete and Submitted (stretch mod support) |

**Project Goals**

Features

In this project the player will be able to play by themselves a game of Not-Settlers of Catan. The player will be able to place a settlement and a road at the beginning of their turn. They will then be able to roll the dice and try to gain resources. If they gain enough resources then they will be able to buy new roads and settlements. The player will win if they get 1.25 \* the number of players settlements placed properly. In this case, the player will win when they purchase their second settlement.

Players are only able to but roads that are adjacent to a settlement that they own. The player is only able to but settlements that are adjacent to a road that they own.

Resources are given to the player one each turn. The player rolls a dice (done randomly at the start of the first phase) which then gets passed along to the player and the player checks to see if any nodes have a hex near it with that number for resource gain. If they do have a hex near them with that number then they add one of those resources to their resource list.

File Formats

**Scripts**

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

**Scenes**

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

**Sprites**

|  |  |  |
| --- | --- | --- |
| Naming Convention | Description | Format |
| SpriteName | A game asset sprite | .gif |

**3D Assets**

|  |  |  |
| --- | --- | --- |
| Naming Convention | Description | Format |
| PrefabName | A 3D game asset | .prefab |

**Other**

|  |  |  |
| --- | --- | --- |
| Naming Convention | Description | Format |
| TDD\_Finished | The completed Technical Design Document | .pdf |

Asset List

**Common Type**

**Scripts**

* **ScriptHex (Editor)**
* **ScriptMapCreationWindow (Editor)**
* **ScriptBoardCorner**
* **ScriptBoardEdge**
* **ScriptBoardHex**
* **ScriptButtons**
* **ScriptEngine**
* **ScriptHex**
* **ScriptPhaseTransition**
* **ScriptPlayer**
* **ScriptSaveLoad**
* **ScriptSettlement**

**2D art**

* **clayHex**
* **desertHex**
* **oreHex**
* **sheepHex**
* **wheatHex**
* **woodHex**

**Prefabs**

* **Canvas**
* **Corner**
* **Edge**
* **GameBoard**
* **Hex**

Accountability

Mike

* Game Content
  + Phase transitions and content
  + Player data structure
* Maintain TDD

Marshall

* Game Content
  + Save/Load and other I/O
  + Board Setup
  + Node data structure and building error checking

Nathan

* Tool
* GUI