

Project Plan

Items is Items

v2.1

10/17/2018

Team Name - 'A Group of People'

Location of electronic version of file:

<https://docs.google.com/document/d/1Nk9yqBvRXyha35LuTxHXklpz55goBX6ngNH5y7jbc7c/edit?usp=sharing>

Bellevue College Computer Science

Sara Farag

Revisions Page

Version	Author	Description	Date
0.0	Job Betcher	Creation	9/30/2018
0.1	Jordan Betcher	Add Continuous Integration Tool, Features, Roles	10/1/2018
0.2	Jordan Betcher	Literature Review	10/3/2018
1	Annick Stefanin	Zelda, Plan Management	10/3/2018
2	Job Betcher	“Rescoping”	10/16/2018
2.1	Annick Stepanin	More Literature review	10/17/2018

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Introduction

Project Overview

- Purpose
 - To create a game based on item interactions. Such as something as silly as placing cheese on a door to attract a mouse to eat the door. To mixing your own poisonous cake to get rid of a monster nest.
 - “Back in the day. When Jordan was younger, there was a student playing runescape. And Jordan was like “Hey, all those items must do amazing things.” So he played RuneScape and those items didn’t do amazing things. So he is here now, making a game that has items which do amazing things. =D” - Jordan Betcher 2018
- Scope
 - Creating a 2D game with a character, inventory, and items. There will be puzzles created from the terrain, NPCs, and monsters in the environment. There will be cooperational multiplayer and the game will be playable in Android.
- Assumptions and constraints
 - Three people in our group.
 - Only have one school year.
 - There must be Multiplayer.
 - We have to create our own game ideas (and prototype and test them)

Literature Review

Items Systems:

RuneScape [1][2][3]

RuneScape is one of the main games that our project is envisioned from. In the game progression is measure by levels... and you get levels via grinding for levels. There are quests, but the items usage in them is stale. This is why we’re creating our game, because in Runescape items are limited to a single application, making it a boring game of finding the key (as a side note, the story surrounding the quests are generally pretty good).

The Legend of Zelda [7]

Item use is somewhat inspired by Legend of Zelda games, where specific, unique items are obtainable through long quests. This will give a higher value to the items in the player’s eyes.

Open Worlds:

The Legend of Zelda [8]

The overworld in the Legend of Zelda is a large open world that connects the various dungeons together. Other than travel, the overworld can also contain various puzzles and NPC’s which the character can interact with.

Puzzles:

The Legend of Zelda[9]

Zelda is known for its puzzle aspect, in both its open world and dungeon spaces. Each puzzle is handcrafted and can be approached several different ways. The game will contain handcrafted puzzles with at least two different methods of solving it, to challenge the player and guarantee that it is solvable.

Quests:

Skyrim [10]

Skyrim has randomly generated quests using via parameterized templates based upon the player and their actions. NPCs can give quests based upon the player's experience, or friendliness level, or another statistic a story manager keeps track of.

Multiplayer:

Unity gives its users the option of using their built-in Multiplayer system or constructing a system on their own.[11][12] We'll use the system and determine later if it suits our purpose. If it does not, our most likely choice of sending information will be using RUDP. [13][14]

Game Engine:

Unity3D Engine

Unity although is a new game engine. It is easier to use, find tutorials for, and uses a more user friendly programming language. Our combined experience with this game engine far exceeds all our other game engines, and using this allows us more time to focus on gameplay and content.

GameMaker

RPG Maker

Unreal Engine

Unreal is a longstanding game engine that's been around for 20 years. It's proven its effectiveness, and has one of the best graphics 3D game engines out there. Although its sophisticated interface might be need a little bit of time to get used to, the free until you sell let's new users experiment with it.

Conclusion

Unity is the game engine that we have chosen from the slew of game engines out there. Unity doesn't even compare to Unreal in displaying 3D graphics, but we aren't focusing on graphics.

Ease of use is the most important and therefore in the end we choose to use Unity.

Platform:

Android:

IOS:

PC:

Website (via WebGL):

Conclusion:

PC is the easiest and most accessible platform to start with since we're literally building it on that platform; but ultimately our game is simple enough that it will be enjoyed more on mobile. Android is the easiest mobile platform for us to access and test on.

Project Organization

Roles and Responsibilities

- ❖ Jordan Betcher
 - Lead
 - Documentation Assistant
 - Programmer
 - Designer
- ❖ Job Betcher
 - Programmer
 - Program Architect
 - Documentation
 - Designer
- ❖ Annick Stefanin
 - Voice of Reason
 - Document Editor
 - Programmer
 - Designer

Tools and Techniques

- ❖ Game Creation Tools
 - Unity
 - Unity is a flexible game engine that includes collision detection, camera, and exporting executables to different platforms such as Windows, Mac, or Linux. We will be using it to create the game, levels and executables.
 - Visual Studio
 - Visual Studio is a powerful IDE that is integrated with Unity. Providing the ability to program scripts in C# as well as debugging features. We will be using it to create C# scripts for Unity.
- ❖ Testing and Debugging Tools
 - Unity Test Runner
 - Unity Test Runner is a script tester built specifically as a plugin for unity. We will be using it to create tests for our code.
 - TravisCI
 - A Continuous Integration Test tool made to integrate with both GitHub and Unity.
- ❖ Art Creation Tools
 - Paint
 - Paint is a commonly used art to create quick and dirty art. We will mainly use it for pixel art and programmer art.
 - Krita

- Krita is a powerful art tool that allows layering, transparency, and transformations. We will be using this tool for our high quality 2D art.
- Blender
 - Blender is a large 3D modeling tool that's free.
- ❖ Team Collaboration Tools
 - ZenHub
 - ZenHub is a GitHub integrated scheduling plugin. We will be using it to create milestones and assign tasks.
 - GitHub
 - GitHub is a team collaboration tool that allows different users to merge their version of the code together. This makes it possible for multiple people to work on the same project at once. GitHub also keeps a log of changes allows you to roll back to a previous version of the code. We will be using it so our team can work on the code together.
 - GitHub Desktop
 - GitHub Desktop is a GitHub application that provides an easier interface than the console.
 - Google Drive
 - Google Drive is a cloud file collaboration platform. We will be using it to collaborate on the documentation as well as review assignments.
 - Discord
 - Discord is a popular communication application allowing both text and voice chat. We will be using it for meetings to discuss new ideas, things we've learned, and bugs.

Project Management Plan

Tasks

- Player
 - Movement
 - Inventory
 - What Kind of inventory
 - Adding items
 - Removing Items
 - Player UI
- Items
 - Creating Interface Framework
 - Find a way to make item via file for automated adding
 - Item uses
 - Images
- NPCs
 - Dialog Manager
 - Basic AI
- Multiplayer
 -
- Port to Android
 -

Additional Tasks/Content:

- World Environment
- Story
 - Environmental
 - Written
- Quests
 - Quest givers
 - Completion events
- NPCs group AI
 - NPC knowing what around them
- Achievements
 - Adding event listeners to everything
- Screens
 - For things like, mini-games, or out-of-game screens and the like.
- Items
 - “MOAR”

- NPCs
 - More?
- “Pretty Pictures”
- Animations

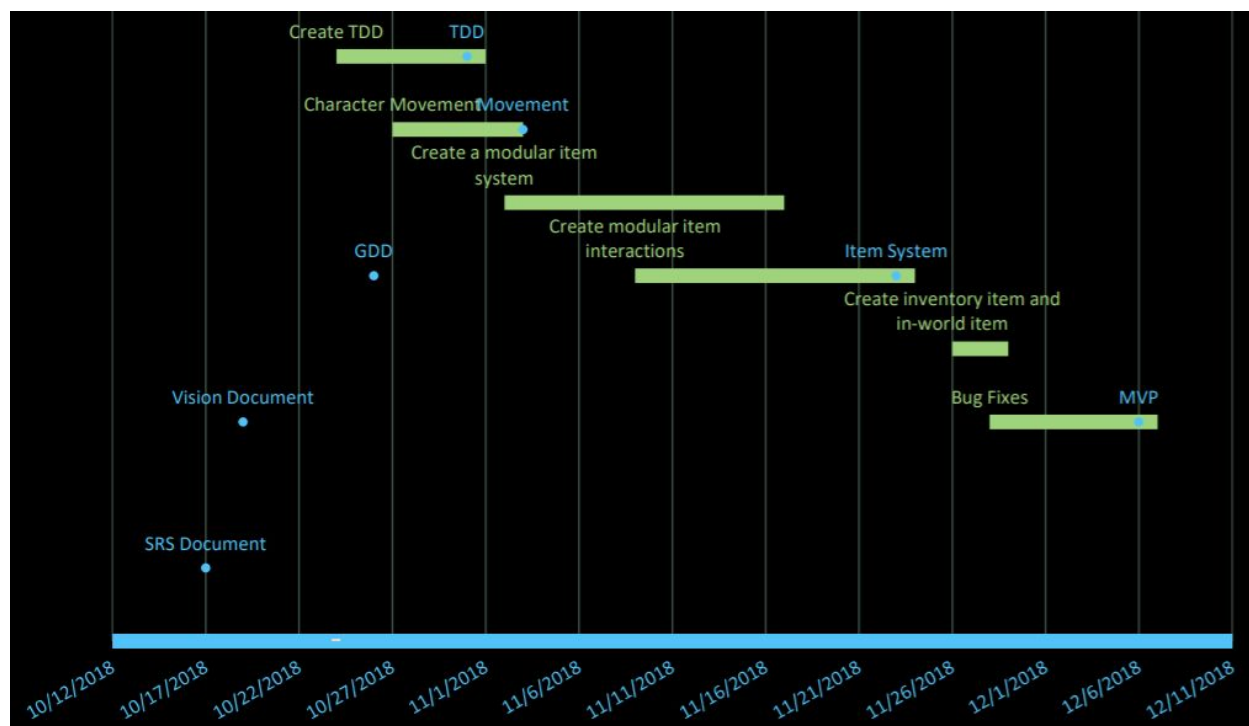
Milestones

Tasks to be Completed	Description	Due Date
Documentation		
Items, Npc’s, and inventory	For the first quarter we will make a player, an inventory, and an item that can change the color of the player.	10/14/2018
Multiplayer, android port, Content	For the second quarter we will add the ability for players to interact in a host world.	3/29/2019
More Content, Polish	Add more interactions and things to do ad polish everything to perfection.	6/28/2019
	Finish and publish game.	6/28/2019

Timeline

The focus of this game is item uses. The completed project will have a start screen that has access to single player and multiplayer. The player will then enter the game world where they control a character and can store and use items with an inventory.

By the end of fall quarter we intend to finish the minimum viable product. This includes a character, an inventory, and items that you can put into the inventory and use. Winter Quarter we will implement LAN Multiplayer, where two different computers are able to interact in the same game world. Then in Spring quarter, we will cleanup the interface, add menus, add more items, and if we have time make the game support multiple platforms.



Additional Material

Definitions, Acronyms and Abbreviations

- MVP - Minimum Viable Product is made up of the minimum main system that make the core experience without any additional content
- NPC - Non Player Character
- MOAR - Slang for “alot more” with added emphasis
- Grinding - The monotonous acting of doing the same thing over and over again.

References

- [1] <https://www.runescape.com/>
- [2] <https://www.youtube.com/watch?v=7RNK0YBdwko>
- [3] <https://en.wikipedia.org/wiki/RuneScape>
- [4] <https://blog.liveedu.tv/unity-vs-unreal/>
- [5] <https://www.pluralsight.com/blog/film-games/unreal-engine-4-vs-unity-game-engine-best>
- [6] https://en.wikipedia.org/wiki/Unreal_Engine
- [7] https://zelda.gamepedia.com/Gameplay_Elements_of_The_Legend_of_Zelda_Series#Items
- [8] <https://zelda.gamepedia.com/Overworld>
- [9] <https://zelda.gamepedia.com/Puzzle>
- [10] https://www.gameinformer.com/games/the_elder Scrolls_v_skyrim/b/xbox360/archive/2011/01/17/the-technology-behind-elder-scrolls-v-skyrim.aspx?PostPageIndex=2
- [11] <https://docs.unity3d.com/Manual/UnityMultiplayerIntegratingOverview.html>
- [12] <https://docs.unity3d.com/Manual/UNetUsingTransport.html>
- [13] <https://softwareengineering.stackexchange.com/questions/342254/tcp-or-udp-for-a-multiplayer-game>
- [14] <https://forum.unity.com/threads/should-we-use-udp-or-tcp.257217/>

Appendices