Technical Design

Top Down action RPG

Document version 0.3

Changelog

Date	
05-03-2019	Added technical choices since we ran into some issues (4 directional movement).

Date	
28-03-2019	Added Unity version.
28-03-2019	Updated folder structure to correspond with the using structure.
28-03-2019	Changed: Technical choice about manager objects

Overview

This game is a windows .exe packaged game to entertain players. This top down action RPG game is a game where you are a girl that needs to save her village. With randomly generated levels fun is guaranteed. You need to earn strength and items in the forest to kill the “boss”. The boss is currently occupying your school. Walk around fulfill quests play levels and get stronger and better.

Requirements

Software required for this project:

- Unity 2018.3.7f1 (Game engine: used to combine scripts with assets making the game and compile it to a .exe).
- Photoshop (Used to create art).
- FL Studio (Used to engineer sound).
- Visual Studio (Used to write code for the game).
- Sourcetree (Used for our GitHub repository).
- Chrome (Used to communicate with our team and to distribute the game).
- Windows (Used to run Unity, Visual Studio, Chrome, FL Studio, Photoshop The game).

Hardware required for this project:

- 3 computers or laptops that can handle Unity, FL Studio, Photoshop
    Minimum requirements
    - processor: i7 6700k
    - Graphics card: GTX 960m
    - Storage: 512GB SSD/HDD
    - Ram: 8GB

Target

Platform	Epic Games store (Windows)
Recommended device	A computer or laptop with the following specs: - Processor: 2 GHZ dual core - Dedicated graphics card with 2GB vRAM - 10GB of free space - 4GB of RAM
Minimal device	A computer or laptop with the following specs: - Processor: 2 GHZ dual core - Dedicated graphics card with 1GB vRAM - 10GB of free space - 2GB of RAM
Engine	We'll use Unity. Thanks to unity's 2D advantages and tile system we can create levels easily also the LWRP is perfect for the the platform we're targeting.

Project rules

Folder structure

- xxxxx_rpg (Root directory)
    - From client (Files we got from client)
    - Research (Moodboards or other research files)
    - Builds (Here we collect our builds)
        - Windows (Builds for windows .zip files)
    - Assets (Here we collect our assets: Art, Sounds)
        - Art (Here we collect our sprites/art)
        - Sounds (Here we collect our sounds and our music)
    - Documentation (Here we collect our documentation for this project)
    - Production (Here we keep our source files for Photoshop, Unity, FL Studio)
        - FL Studio (This is our FL Studio project)
        - Photoshop (Here are our .psd files)
            - Workspace (Here we store our .PSD that we are working on)
            - Master (Here we store our finished .PSD's)
        - Unity (This is our Unity project **Sub folders should only contain production ready assets**)
            - Scripts (Here we store our scripts)
            - Assets (Here we store our assets)
                - Audio (Audio files)
                    - Music (Audio music files)
                    - FX (Audio FX files)
                    - Other (Other Audio files)
                - Art (Here we store our art files)
                    - Environment (Environment art files)
                    - Items (Item art files)
                    - UI (UI art files)
                    - Characters (Character art files)
                    - Other (Other art files)
            - Materials (Here we store our Unity materials)
                - Environment (Environment materials)
                - Items (Item materials)
                - UI (UI materials)
                - Characters (Character materials)
                - Other (Other materials)
            - Shaders (Here we store our Unity shaders)
                - Environment (Environment shaders)
                - Items (Item shaders)
                - UI (UI shaders)
                - Characters (Character shaders)
                - Other (Other shaders)
    - Delivered to client (Here we paste all our files that have been sent to the client)

File types

- .jpg (textures we don’t need transparency)
- .png (textures that use transparency)
- .psd (Photoshop files for creating and changing textures)
- .mp3 (Sounds)
- .exe (Windows builds)
- .zip (Compressed builds)
- .cs (C# scripts)

Naming

- Don’t use spaces we use under squares ex: police car.fbx should be police_car.fbx
- Textures should be named after their models ex: police_car_door.jpg
- Name everything logical
- Make sure to use the correct file extension
- Don’t forget the name your nodes right in Maya/Unity

Version control

- We use a GitHub repository with sourcetree as software.

Technical choices

Subject	Explanation
Rendering and View	Lightweight render pipeline since it is a pixel art 2D game. This will make sure the game works on low end pc's
2D top down	This is a requirement from the client.
Scene management	We'll use a scene per level because we need to randomly generate the level ones the player starts one. This is a bit easier if we do this in seperate scenes.
A.I.	Maria will be standing still on a spot near the main house of the player. Enemy A.I.'s will be randomly walking around in the room inside the levels. The game needs to be completed in 5 weeks so we can't make really advanced A.I.'s
Manager objects	We'll use multiple manager object for the player to keep track of he's inventory, health and money. transition system, level, audio etc.
Data storage	We'll only store save games on the PC of our players and nothing online. Because it is a single player game there is no need to save files online.
Unity's new UI system	We'll be using Unity's new UI system since it doesn't require programming to create a fairly nice UI. This can be faster done with the new UI system.
Player	The player can be controlled with mouse and keyboard or controller. Since split screen isn't a requirement from the client we don't want to loose to much time trying to add it.
4 Directional movement	We'll use 4 directional movement since it requires less art so will be faster done. And it is a pixel art game so it fits in perfectly.