Feasibility Report - 2D Top Down RPG Pokemon

Video games have become a social phenomenon in the last decade,and with the rise of consoles and PCs simple games of the past have become rarer and harder to play. There was a certain charm to these older style games, one that I don't think has been replicated in the modern era. The type of game that is being designed is a Top Down RPG old Pokemon game that aims to extend the experience that this style of game did back on the older consoles.

Background

Pokemon games usually have the same formula when it comes to designing their games. Each game consists of towns and routes. The town consists of several buildings that you can go inside, with one of the buildings allowing you to heal your team and the other allowing you to buy in-game items. Routes consist of wild grass where Pokemon can be found and trainers that can be battled who each have their own unique team. There is also a challenge in each town that needs to be beaten and once you have beaten all the towns you can face the champion of the region. The story for the game is always very simple, stop the bad guys from taking over the world, it is usually generic and for this project the goal is to make an interesting and mysterious story that the player has to piece together themselves.

The player can explore the world and its secret and catch pokemon to build a team up to a maximum of 6 pokemon, with the rest being able to be stored in a box.

Outline of the Project

The main part of the project is going to involve creating the different sprites as setting these up is going to be important before any of the map starts being created. This is going to involve setting up the different Pokemon, their statistics and formulas used to create them. Each of these should have their own unique sprite and statistics to distinguish them apart. The next sprites that need to be created are the trainer / player sprites. A trainer and the player should be similar, as they will both be able to have a team of pokemon but the player will be moving around and the trainers will be static. There should be buildings sprites, which the player can enter, grass sprites which can allow the player to encounter pokemon, and route sprites which allow the player to travel around with no pokemon encounters. Once these individual sprites are created, they can be stringed together to create a successful game.

Alongside the graphical aspects, the sound design will also need to be taken into account, adding music and different sound effects to the game.

There should be 3 main parts to the game, exploring the world, capturing pokemon and battling trainers. Exploring the world can be as complicated as the design sees fit but should at least have interesting level design and different things to explore. Encountering pokemon should come from either running in the grass with a random chance to encounter different pokemon on each route. Catching pokemon or defeating pokemon should allow the player's Pokemon to

level up with experience. Battling trainers should also be a big part of the game, as this is where the challenge comes in.

Potential Risks

The biggest risk associated with making this game is producing a quality product within the time period, as trying to put all the pieces together as well as documentation and testing within 5 weeks is a stretch.

Another risk is choosing what GUI library to use. As this is being developed in C++, two of the options are SFML and Allegro, both having their own benefits and drawbacks.

However, producing a high quality game in the time period available is definitely possible, so the project will be going ahead.

Requirements

Functional:

1. Title Screen:

1.1 The game will have a title screen, where the user can select a new game or to load a previous game.
1.2 The title screen will have an image of the pokemon.
1.3 The title screen will have the name of the game.
1.4 The game's options will be able to be changed from here.
1.5 The title screen will have a soundtrack.
1.6 The player will be able to create a new game save.
1.7 The player will be able to load a game save

2. Overworld:

2.1 The player will be able to walk around the world from a top camera perspective.
2.2 The camera will follow the player when the player goes to the border of the screen.
2.3 The player will be able to walk into grass to encounter a wild pokemon.
2.4 The player will be able to enter different buildings.
2.5 There will be different coloured tiles to indicate a shift in environment.
2.6 There will be different biomes the player wil, go through e.g snow, plains and water.
2.7 The player will be able to pick up items scattered throughout the world.

3. Player:

3.1 The player will be able to use the WASD keys to explore the world.
3.2 The player will be able to use the E key to interact.
3.3 The player will be able to use F to bring up their bag, which will show them their current Pokemon, Items and Save options.
3.4 The player will be able to hold a maximum of 6 pokemon.
3.5 Once a player has 6 Pokemon, any captured Pokemon should go to their box which they can view from the PokeCentre.

4. Pokemon:
4.1 Each Pokemon will have their own statistics including:
   - Health
   - Physical Attack
   - Physical Defense
   - Special Attack
   - Special Defense
   - Speed

4.2 Each of these statistics will have a base statistic which will be plugged into a formula with the level of the Pokemon to generate the current statistic.
4.3 Pokemon will gain experience when they defeat another Pokemon.
4.4 Pokemon will give experience based on their level.
4.5 When a Pokemon reaches a threshold of experience, they will level up.
4.6 Pokemon will have either one or two types.
4.7 Each Pokemon will have their own moves from the moves implemented into the game.

5. Wild Pokemon Battle:
5.1 The player will encounter a Pokemon when they walk into grass.
5.2 The player will be able to catch / fight / run away from this pokemon.
5.3 The pokemon will be randomly generated between a range of levels.
5.4 The player will be able to heal their pokemon in the fight.
5.5 The player will be able to catch the wild pokemon.

6. Trainer Pokemon Battle:
6.1 The player will be able to fight a range of trainers with a range of Pokemon.
6.2 The player will be able to heal their pokemon in the fight.
6.3 The trainer will interact with the player once they are within 3 tiles of their line of sight.
6.4 The player will be able to switch Pokemon during the fight.
6.5 Once the player has 0 Pokemon left, teleport them to the nearest healing location.

7. Buildings:
7.1 There will be houses that the player will be able to enter.
7.2 There will be people inside these buildings that the player can talk to and learn more about the story.
7.3 There will be a Pokecenter where the player can heal their pokemon.
7.4 Within the Pokecenter, the player will also be able to swap around their party.
7.5 They will also be able to delete any Pokemon they do not want.
7.6 There will also be a Pokemart, where the user can buy and sell the different items in the game.
7.7 There will be Gyms, where the player can enter, fight a few trainers and then beat the gym leader.

8. Items:
8.1 The minimum items to be included in the game are:
   - Pokeball
   - Greatball
   - Ultraball
   - Potion
   - Super Potion
   - Hyper Potion.
8.2 The player will be able to pick up an item using E.

9. Sounds

9.1 There will be a song playing on the title screen.

9.2 Wild and trainer battles will have their own soundtrack.

9.3 Different routes will have their own soundtrack.

9.4 Picking up an item will make a noise.

9.5 Pokemon will each have their own cry when entering battle.

10. Non-Functional:

10.1 The game should run at 60 fps.

10.2 The game should take up less than 500 mbps.

10.3 The loading time of the game should take no longer than 3 seconds.

10.4 The input time between key press and relayed input should be less than 0.01 seconds.

10.5 The game must not crash.

10.6 The player should never be able to get stuck in a position they can not get out of.

10.7 The story should be enjoyable.