Project plan

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Contents

1 Description

1.1 The basics

The project idea is a player-vs-cpu, turn-based, pokemon fighting game. Player chooses three of the six given Pokemon, with details of each pokemon provided (name, attribute, attack and defence). Cpu will have 3 randomised Pokemon, which will be shown when the battle begins. The idea of the game is to battle until one side loses all their Pokemon. At each turn, players have the option to use their attack or special attack.

There are three attributes of Pokemon, each with two Pokemon:

- Water attribute
  - POKEMON 1
  - POKEMON 2
- Fire attribute
  - POKEMON 3
  - POKEMON 4
- Grass attribute
  - POKEMON 5
  - POKEMON 6

Pokemon switched out when hp reaches 0, and the winner is determined when the opponent has no more Pokemon.

1.2 Types of moves

- Attack
  - Opponent's defense $<$ dealer's attack
    - Base + difference damage is dealt
    - Adds x number of skill points for successful damage
  - Opponent's defense $>$ dealer's attack
    - Base damage is dealt
    - Adds 1 skill point for unsuccessful damage
- Defense
  - Higher defense $\implies$ x skill points
  - Lower defense $\implies$ 1 skill point

- Special attack
  - Attribute attacks that can be used any time
    - If attribute is stronger, then $2\times$ damage dealt
    - If attribute is the same, then $1\times$ damage dealt
    - If attribute is weaker, then $\frac{1}{2}\times$ damage dealt
  - Damage is dependent on opponent's defense HP
    - Equal / higher defense $\implies$ base damage
    - Lower defense $\implies$ base + difference damage

1.3 Attributes

Certain Pokemon are weaker/stronger against other Pokemon of different attributes.

Types of attributes:

- Water (strong against fire, weak against grass)
- Fire (strong against grass, weak against water)
- Grass (strong against water, weak against fire)

1.4 Levelling up

Once having gained a certain number of skill points, user can choose to use their turn to level up their pokemon.

- Increase HP for attack and defense
- Any damage dealt will be erased, so Pokemon level up with full HP
- At each level-up, more skill points are required for next level-up
  - Level $1 \to 2$: requires x skill points
  - Level $2 \to 3$: requires $x + 10$ skill points, etc.
- At certain level ups (e.g. 3, 6, 10), major increase in attack and defense

2 Potential classes

2.1 Player

Data:

- Pokemon owned
- Level

Functions:

- Add/remove Pokemon owned
- Increment/decrement level

2.1.1 Person

Data:

- Name
- Skill points (for leveling up)

Functions:

- Set name
- Increment/decrement skill points
- Get action from user

2.1.2 Computer

Functions:

- Get action randomly

2.2 Pokemon

Data:

- Name
- Type
- Level
- Health
- Attack
- Defense
- Speed
- Moves learnt

Functions:

- Increment/decrement level
- Increment/decrement health
- Increment/decrement attack
- Increment/decrement defense
- Increment/decrement speed
- Add/remove moves learnt

2.3 Menu

Data:

- Title
- Options (vector)

Functions:

- Print menu
- Set title
- Set options

3 Timeline

Mid-term break

- Finalize plan
- Prototypical testing

Week 9

- Submit plan
- Begin coding

Week 10

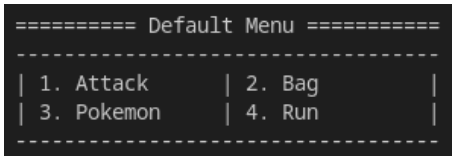
- Finish version 1

Week 11

- Finish coding

4 User interface

The game will use a command-line interface. This will be done using the Menu class to display the options to the user, and the user will be able to select an option by typing the corresponding number.



5 Unit testing and debugging