

Puckemon

Requirements and Analysis Document

bEsTpRoGrAmMerSeU

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1 Introduction

1.1 Purpose

An internationally recognized classic game whose variants are many has a shortage in the Chalmers gaming market. The group bEsTpRoGrAmMerS_EU has taken on the task of creating a game similar to Nintendo's Pokémon from 1996. The great demand results in the need to develop the game for several platforms.

The goal of this project is to develop a turn-based combat game similar to Nintendo's Pokémon, which is supposed to be available for several platforms.

1.2 Application specifications

The goal of the game is to beat your opponent in turn-based combat, where you use combatants called "Puckemons" to fight. There are two types of opponents, trainers and wild Puckemons. Trainers, like the player, have a bag of Puckemon, called a "Puckebag". The wild Puckemon is merely a single Puckemon. During combat one Puckemon from the players Puckebag is supposed to beat the opposing Puckemon, either from the trainers Puckebag or simply the wild Puckemon. When fighting a wild Puckemon, the fight is won when defeating this single Puckemon, but if fighting a trainer, all Puckemons in the trainers Puckebag has to be beaten to win. The same concept applies to the player, where you lose if all Puckemons in your Puckebag are beaten. When a Puckemon from either a trainer or player is beaten, the affected is forced to switch the beaten Puckemon for one from the Puckebag if available, if there is none available the fight is lost.

During a fight, there are multiple options for the player each round:

- Using attacks, which has certain effects on the opponents Puckemon and/or the players own Puckemon. The attacks you can use depends on what Puckemon you have out.
- Using items from your inventory, which has certain effects on the opponents Puckemon and/or the players own Puckemon.
- Switching the currently fighting Puckemon with a Puckemon from the Puckebag.
- Fleeing the fight, which simply quits the fight and results in defeat. This is only available if fighting a wild Puckemon.

The trainer opponent has the same options, with the exception of not being able to flee the fight. A wild Puckemon can only deal attacks.

The chosen option from the player and the enemy is then executed according to this priority list, where 1 is highest:

1. Switch
2. Items
3. Attack, where the attack with highest attack priority is prioritised.

4. The Puckemons speed attribute, where a higher value is prioritised.

The items and the attacks have, as stated, different effects that affect the fighting Puckemons. These effects can vary from buffing stats, which is when the Puckemon gets stronger for a while, to simply dealing damage to the opposing Puckemon or healing itself. At the end of the day, the point is to defeat all the opposing Puckemon, which is done by depleting their HP by dealing damage to them.

If all the players Puckemon has been defeated, the whole game is lost and the player cannot continue through the game. If all opposing Puckemon are defeated the player has won the combat and can continue through the game by meeting another trainer or a wild Puckemon. After each win the players Puckemon will gain experience points and might level up which might make the evolve to another stronger Puckemon.

1.3 Scope of application

The game starts with the player battling an enemy trainer with two random Puckemons. If the player wins against this starting trainer the player has the option of battling a wild Puckemon, a "novice" (easier) trainer or a real challenge". After every victory these same options are available, but they are a bit random.

1.4 Definitions, acronyms and abbreviations

- **Puckemon:** A monster that is used to fight other monsters
- **(Player bag)/(Trainer bag):** A bag containing Puckemons
- **HP:** Health points, the amount of health.
- **Wild Puckemon:** A single Puckemon meant to function as a single opponent (not part of a Trainer bag).
- **Experience points:** Points which at a certain amount is supposed to level a Puckemon up, which in turn increases certain stats which makes the Puckemon stronger in combat.
- **PMD:** Short for Programming Mistake Detector, which analyzes the source code and reports any issues found
- **GUI:** Graphical User Interface, which refers to what the user sees when using the application.
- **Repo:** Short for repository, a location to store software packages.
- **JUnit:** Unit testing framework
- **Viscosity:** This refers to how easy it is to add code to the program while maintaining the design.
- **MVC:** Refers to a design pattern named Model View Controller. **application:** An application that runs locally on the device and does not require anything else to be functional.
- **PP:** Power points, the amount of times left to use an attack.
- **Fainted:** Describes a Puckemon which has been defeated.
- **Party:** A collection of Puckemon.

2 Requirements

2.1 User Stories

US01 Puckemons

I want to be able to have different Puckemons with characteristics and unique statistics.

Confirmed by following functional requirements:

- Does my Puckemon have personal variables such as name and strength?
- Can my Puckemon stats be altered by other sources?

This user story is fully satisfied.

US02 Attack

As a user I want to be able to select an attack that my Puckemon executes to be able to combat my opponent.

Confirmed by following functional requirements:

- Can I select an option for my Puckemon attacks?
- Can I select available attacks from my Puckemon?
- Does the attack execute with the correct effect?

And by nonfunctional below:

- Can I see a description of the attack? (The effects)

This user story is fully satisfied.

US03 Battle with Puckemon

As a user I want to be able to battle other Puckemon in a combat scenario using my own Puckemons.

Confirmed by following functional requirements:

- Can I enter combat with my own party against an oppsing party or Puckemon?
- Can I choose an option to affect my own or opposing Puckemon?
- Can I battle for multiple turns against opponent?
- Can my own Puckemon be affected by the opposing Puckemon?

This user story is fully satisfied.

US04 Switch Puckemon

As a user I want to be able to switch my fighting Puckemon with one from my Player bag to be able to effectively fight different opponents.

Confirmed by following functional requirements:

- Can I select an option for switching my Puckemon?
- Can I select available Puckemons from my Player bag?
- Can I, after switching, fight with my “new” Puckemon?

And by nonfunctional below:

- Can I differentiate switchable Puckemons from available ones?

This user story is fully satisfied.

US05 Inventory

As a user I want to be able to select an item from my inventory that executes to be able to combat my opponent. effectively fight different opponents.

Confirmed by following functional requirements:

- Can I select an option to open my inventory?
- Can I select available items from my inventory?
- Does the item execute with the correct effect?

And by nonfunctional below:

- Can I see a description of the item (The effects/amount left)?

This user story is fully satisfied.

US06 Visualise Puckemon

As a user I want to see statistics about my and my opponents Puckemon during combat, so that I can make the right decision.

Confirmed by following functional requirements:

- Can I see the HP of the fighting Puckemons?
- Can I see the name of the fighting Puckemons?
- Can I see the level of the fighting Puckemons?

And by nonfunctional below:

- Can I see my own and opposing Puckemon?
- Can HP also be seen as a bar to better visualise how much I have left?

This user story is fully satisfied.

US07 Visualise Options during Combat

As a User, I want to see the different options I can do during combat to better strategies so that can I win.

Confirmed by following functional requirements:

- Can I see the choices I have during combat with my Puckemon?
- Do I have/see different options depending on Puckemon/Items/Party?

And by nonfunctional below:

- Can I move around my options in a simple menu?
- Can the menus show what the different options do?
- Can the menus be responsive and give feedback when pressed?

This user story is fully satisfied.

US08 Ending Combat

As a user I want to be able to win or lose combat to progress in the game.

Confirmed by following functional requirements:

- Do I win after defeating all opposing Puckemon during combat?
- Do I lose when all my Puckemons are defeated?
- Can I continue to fight other opponents after winning?

And by nonfunctional below:

- Can I see what I have accomplished during my Combat?
- Can I see clearly that I have won the game

This user story is fully satisfied.

US09 Catching Puckemon

As a user I want to be able to catch the enemy wild Puckemon I am fighting against to grow my collection of Puckemons.

Confirmed by following functional requirements:

- Can I use a Puckeball during combat to try and catch my opponent?
- Does the enemy wild Puckemon become usable for me when I catch it?

This user story is not yet fully satisfied.

US10 Leveling Puckemon

As a user I want my Puckemons to be able to get stronger over the course of the game to progress in the game and get stronger.

Confirmed by following functional requirements:

- Do Puckemon have the ability to level up by having enough experience points?
- Do my Puckemon become stronger after levelling up?

This user story is fully satisfied.

US11 Creating Puckemon

As a developer I want to be able to create and modify new Puckemons easily. So that I can efficiently create content for the game.

Confirmed by following functional requirements:

- Is there a file where I can add/modify Puckemon?
- Can the rest of the program function well with the file?

And by nonfunctional below:

- Can the file be an easy to use XLSX file?

This user story is fully satisfied.

US12 Evolving Puckemon

As a user I want my Puckemon to evolve into other Puckemon after becoming strong enough. So that I can progress more easily and use new Puckemon.

Confirmed by following functional requirements:

- Can my Puckemon change into a new one?
- Will my Puckemon evolve when a certain level is reached?
- Can my Puckemon evolve after combat?

This user story is fully satisfied.

US13 Save Game

As a user I want to be able to save my game and return to it after quitting, so that I can continue playing over multiple sessions.

Confirmed by following functional requirements:

- Do I have the option to save the game?
- Does the game return to the same state after launching again?

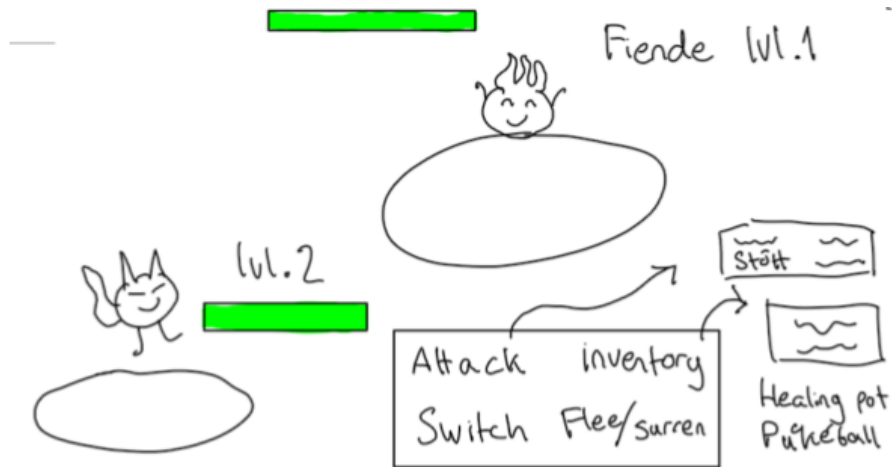
This user story is not yet fully satisfied.

3 Definition of done

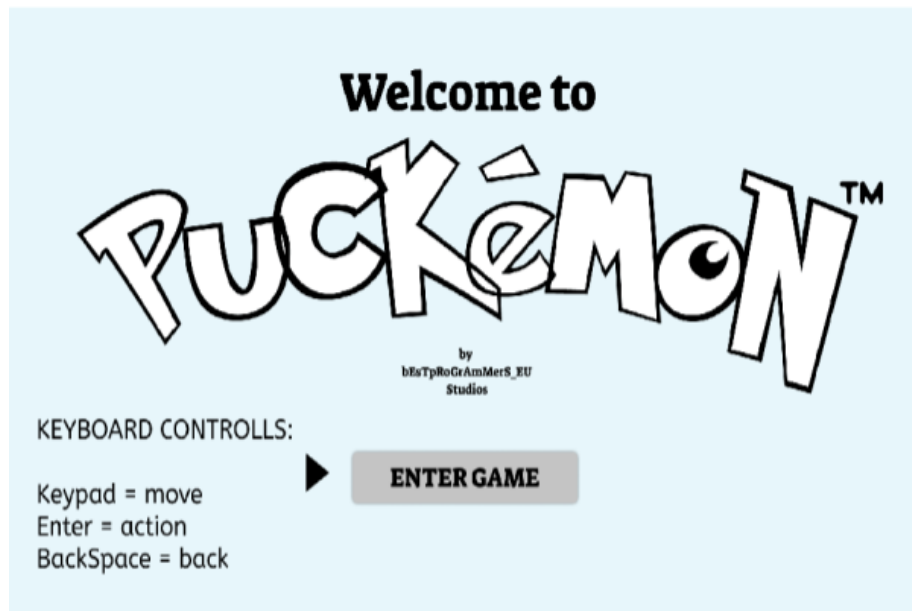
These criteria must be met for every user story for it to be considered complete:

- Every feature should be tested through junit testing.
- Every feature must be added to git.
- Every feature should meet the specified requirements, without major bugs.

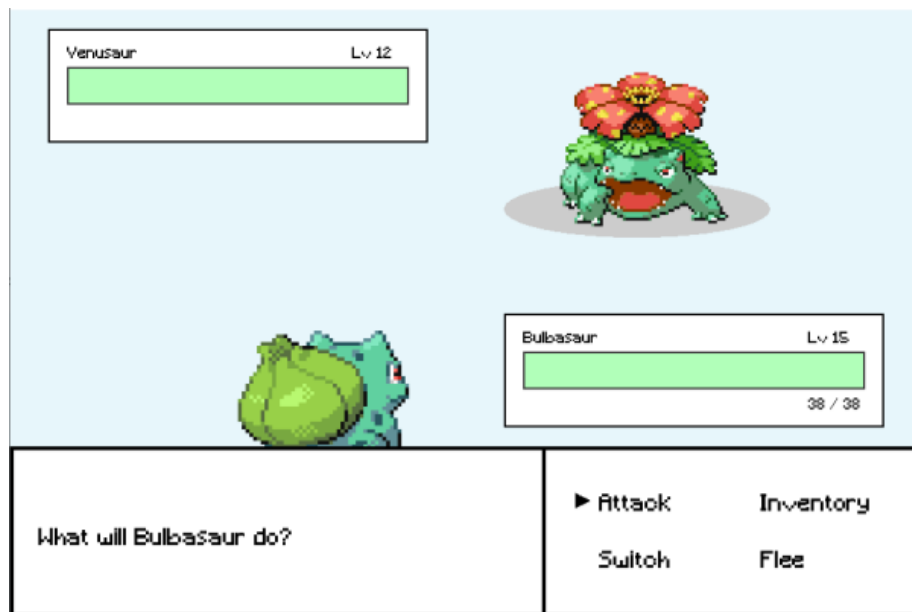
4 User interface



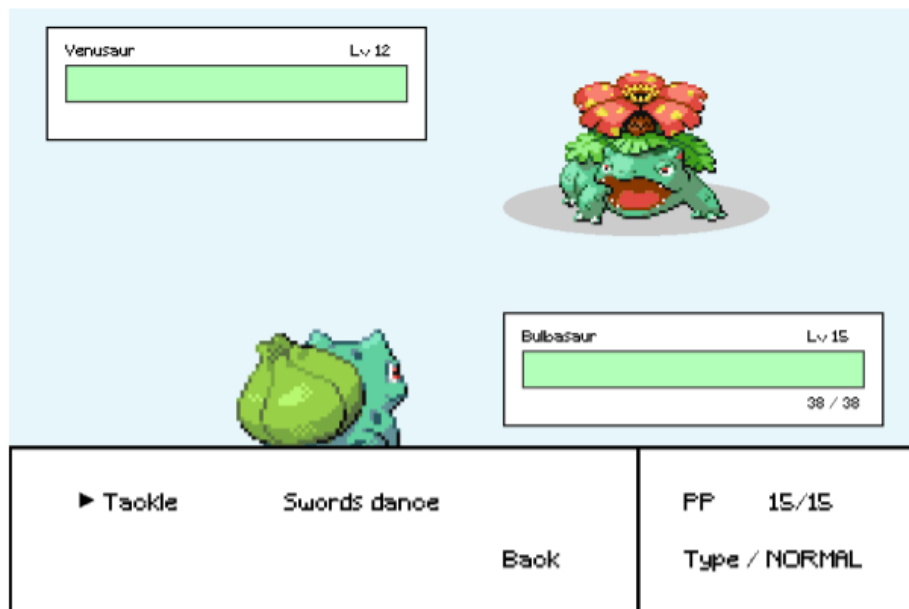
Figur 1: The first sketch of the application.



Figur 2: The main starting screen of the game.



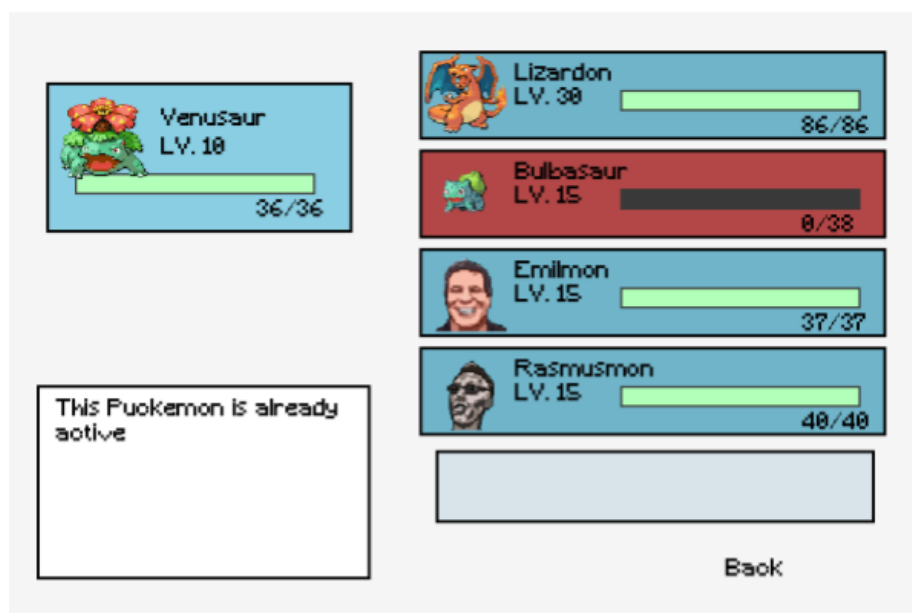
Figur 3: The combat screen. Where the user can select what to do in a round.



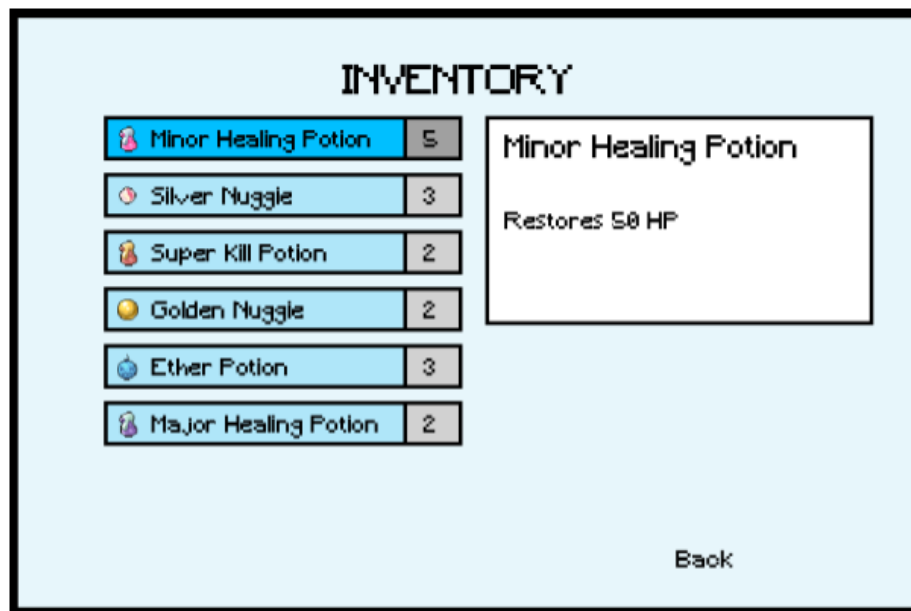
Figur 4: The combat screen, but where the “attack” option has been selected, which changes the menu at the bottom to display the available attacks and their PP and type.



Figure 5: The combat screen after an attack has been chosen. Displays what the opponent has chosen during the round and displays the damage and health each Puckemon has dealt/gained (See the red and green text next to the Puckemons).



Figur 6: The party screen, which is displayed after choosing “switch” as an option in the combat screen. Displays the available Puckemon in blue and fainted ones in red.



Figur 7: The inventory screen, which is displayed after choosing “Inventory” in the combat screen. Displays all items in inventory with their description, name and uses left (the number in the grey box).

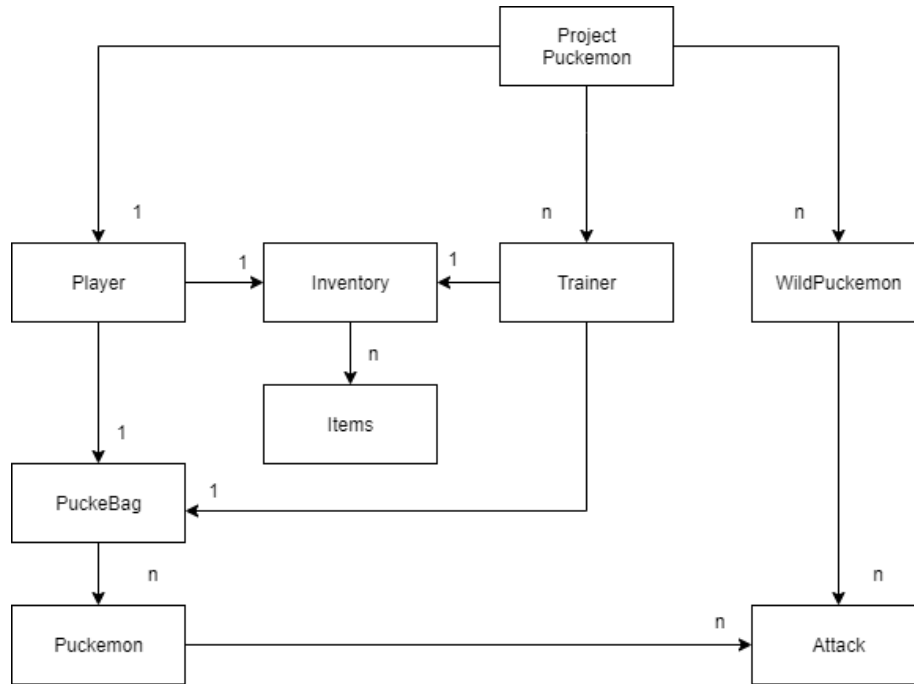


Figur 8: The victory screen, which is displayed after all opponent Puckemon is defeated. Displays gained experience points and options to continue the game.



Figur 9: The game over screen, which is displayed after all player Puckemon is defeated. No navigation is available here and the application has to be quit.

5 Domain model



Figur 10: Domain model.

5.1 Class responsibilities

Project Puckemon - Represents the application main.

World - Represents the traversable world the player can move around in.

Wild Puckemon - A single enemy Puckemon in a fight.

Trainer - The enemy trainer in a fight.

Player - The playable character in the game.

Puckebag - A bag containing puckemons.

Puckemon - The entity that fights in combat.

Attack - An effect that affects a fight in some way.

Inventory - A container for items.

Items - An effect that affects a fight in some way.