

Requirements Upgradables

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Functional Requirements

For the implementation of upgradable powerups in the game, a few things have to be done beforehand. Firstly, there should be a way of getting coins so that better powerups can be bought. This is done by completing missions. Secondly, because getting upgrades costs a lot of time, Within these function requirements, four categories can be identifier using the MoSCoW model for prioritizing requirements:

Must Haves

- The player has a certain amount of coins
- The player has 3 missions each time
- If the player manages to complete one mission, a new mission will be created for the player for the next run
- Each missions has a certain reward in coins. The higher the difficulty, the higher the reward

Should Haves

- Items can be unlocked or upgraded by the player
- The missions the player has accomplished and the 3 missions he still has to do will be saved to the disk
- Each time the game is loaded, the 3 missions that must be done, the amount of coins and the quantity/quality of the items will be loaded from the disk if the file exists
- If the file containing the missions and coins does not exist, then the file and the 3 missions will be created and the amount of coins is set to 0 and the quantity/quality of the items is set to the minimum
- In the menu of the game a scene displaying a shop can be opened
- In the shop items can be bought with coins
- If an item is bought the amount of coins of the player is decreased with the price of the product
- Trampolines have 3 stages: Trampoline, Circus Cannon and Rocket Launcher
- Jetpacks have 3 stages: Jetpack, Chrome Plated Afterburner and Space Rocket

Could Haves

- Each day the game is started, the player is rewarded with a certain amount of coins
- If the player starts the game multiple days in a row, the rewards get higher
- The player has a rank, that is a level with a name
- The player has a certain amount of experience, initially 0 and loaded/saved from/to a file
- Each time the experience reaches a threshold associated with a rank, the rank goes up one level and the experience is set to 0
- Each unit the player jumps, results in an increase in experience
- Each time the player reaches a certain height, the experience increases with a certain amount
- The first time the player reaches certain heights, the experience increases with a certain amount
- Each rank is associated with a game mode that is unlocked when the player reaches the associated rank

Wont Haves

- An Iron Man suit that can be unlocked
- Support for mods
- Buying coins with real money
- A website with a ranking of players with the highest amount of money

Non-functional Requirements

Besides the provided functionality and services, design constraints need to be included in the requirements specification as well.

- All new features will be implemented in Java 8
- All features will be implemented in the week of 10 October, 2016
- The implementation of the features shall have at least 75% of meaningful line test coverage (where meaningful means that the tests actually test the functionalities of the game and for example do not just execute the methods involved)
- No CheckStyle, PMD and FindBugs error will be present in the final version
- Every class, interface, enum, method and field shall be documented using JavaDoc