

# Requirements and Analysis Document for the game project Robots Stole My Girlfriend

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This version overrides all previous versions.

# 1 Introduction

This section gives a brief overview of the project.

## 1.1 Purpose of application

The project aims to create a two dimensional action oriented platforming video game. The game will be of original design and is designed in such a way that it is easy to use.

## 1.2 General characteristics of application

The game will be a desktop, standalone (non-networked) game with a graphical user interface for the Windows/Mac/Linux platforms.

It will be played in real-time and the actual player controls a single in-game character by using his keyboard. The character will be able to move to the left and to the right, and he will also be able to jump upon platforms. The game will have at least three levels which the player will be able to complete one after another. Only level one will be unlocked from start, and to unlock a map the player has to complete the previous one. These levels can be completed by managing to move the character to the finishing line. To make it harder for the player to do this, the levels will also contain computer controlled enemies. The player can then either try to avoid these enemies or attempt to slay them using his weapons. These weapons can be found on the ground during gameplay, and will then be stacked up and be at the player's disposal for the rest of the game.

To give the game an extra aspect and to increase the replay value of the levels, we will have an "upgrade tree" with upgrades that can be unlocked by spending upgrade points. These upgrades give the character stronger weapons and new abilities. Upgrade points will be found on hidden places in the levels. Spending upgrade points is done between levels on the upgrade screen (see APPENDIX).

## 1.3 Scope of application

- The game will only have a single player mode.
- The levels will be unlocked one after another in a linear fashion.
- The player will only be able to shoot straight forward.
- We won't use a physics engine.
- The levels won't be hardcoded. Instead we will store them as XML files in a directory in the game folder.
- The player will only be able to have one saved game at a time.

## 1.4 Objectives and success criteria of the project

1. It should be possible to complete levels (of which there should be at least three), receive an upgrade point for doing so and then select a new level on the level selection screen.
2. The player should be able to spend upgrade points in order to advance his character.

3. There should be at least two different weapons in the game that the player should be able to switch between and use to damage and kill the enemies.
4. The player should be able to lose the game by getting his character killed, either by getting hit by enemies or by environmental hazards (such as spike traps).

## 1.5 Definitions, acronyms and abbreviations

- Upgrade tree, a set of upgrades, divided into “branches”, that can be enabled by spending upgrade points. By spending points in one branch the player will be able to unlock further (more advanced) upgrades in said branch. These trees are usually called talent trees or skill trees in games that use them but in those cases they only concern just that - talents and skills, which is why we used a different term, since we also have weapon upgrades in our tree. See *pic 1* in the appendix for a better understanding of how they usually look like in games.

## 2 Requirements

In this section we specify all requirements

### 2.1 Functional requirements

The player should be able to;

1. Start a new game.
2. Continue an earlier game.
3. Game progress (completed levels, found weapons, unlocked upgrades and upgrade points) is saved automatically.
4. Select which level he wants to play from a level overview screen.
5. Start and play the selected level.
  - a. Move
  - b. Jump
  - c. Attack and kill enemies
  - d. Reload weapon
  - e. Interact with the environment
  - f. Pause
  - g. Pick up items (upgrade points, weapons and health boxes)
  - h. Take damage and die
  - i. Swap weapons
6. Unlock upgrades with his upgrade points.
7. Exit the game.

### 2.2 Non-functional requirements

NA (not applicable).

### 2.2.1 Usability

Usability is high priority. It should be easy for users to start the game and levels within a very short period.

The game will use a common control scheme to make it easy for people to play the game. The game will also give feedback to all of the player's actions, so he easily can interpret the state of the game.

### 2.2.2 Reliability

As long as the user are playing the game as intended with all the supported inputs it will not crash. This means we will not handle anything that happens outside the game, e.g. moving the game window.

### 2.2.3 Performance

The applications are intended to be able to run in a smooth way. Because of this we have set a limit to keep the fps above 50. This to give the user as good experience as possible while playing the game.

### 2.2.4 Supportability

The implementation will be done in a support friendly manner. It will be easy to add more items, weapons and enemies to the game. And the map editor will make it easy for everyone to create a map on their own, without having to read a single line of code or having to recompile the application.

The aim is to make tests for most of the public methods in the model.

### 2.2.5 Implementation

The application is implemented in Java environment.

### 2.2.6 Packaging and installation

A stable version of the game can be found here:

[URL] (.jar)

If you rather prefer to have the latest version of the game you can get it from *github.com*:

- Clone the project with:  
**[git clone git@github.com:MaTachi/Robots-Stole-My-Girlfriend.git](#)**
- Open Eclipse.
- Import the project into Eclipse.
- Compile the project and run it.

How to run the Map Editor:

- The map editor can be found on the following URL: <https://github.com/MaTachi/2D-Map-Editor>
- Create a map with the map editor.
- Put the map in Robots-Stole-My-Girlfriend/res/data/level/ and name it LevelX.xml.
- Start the game and the map should be available on the level selection screen.

## 2.2.7 Legal

There is some sound in the game that might be copyrighted. And some of the images used in the game are images we have found on the net and altered. This is not covered here.

## 2.3 Application models

### 2.3.1 Use case model

UML and a list of UC names (text for all in appendix)

### 2.3.2 Use cases priority

High priority use cases:

1. StartGame
2. Move
3. Jump
4. CompleteLevel
5. CollideWithEnvironment
6. Exit

See APPENDIX for complete map.

### 2.3.3 Domain model

See APPENDIX

### 2.3.4 User interface

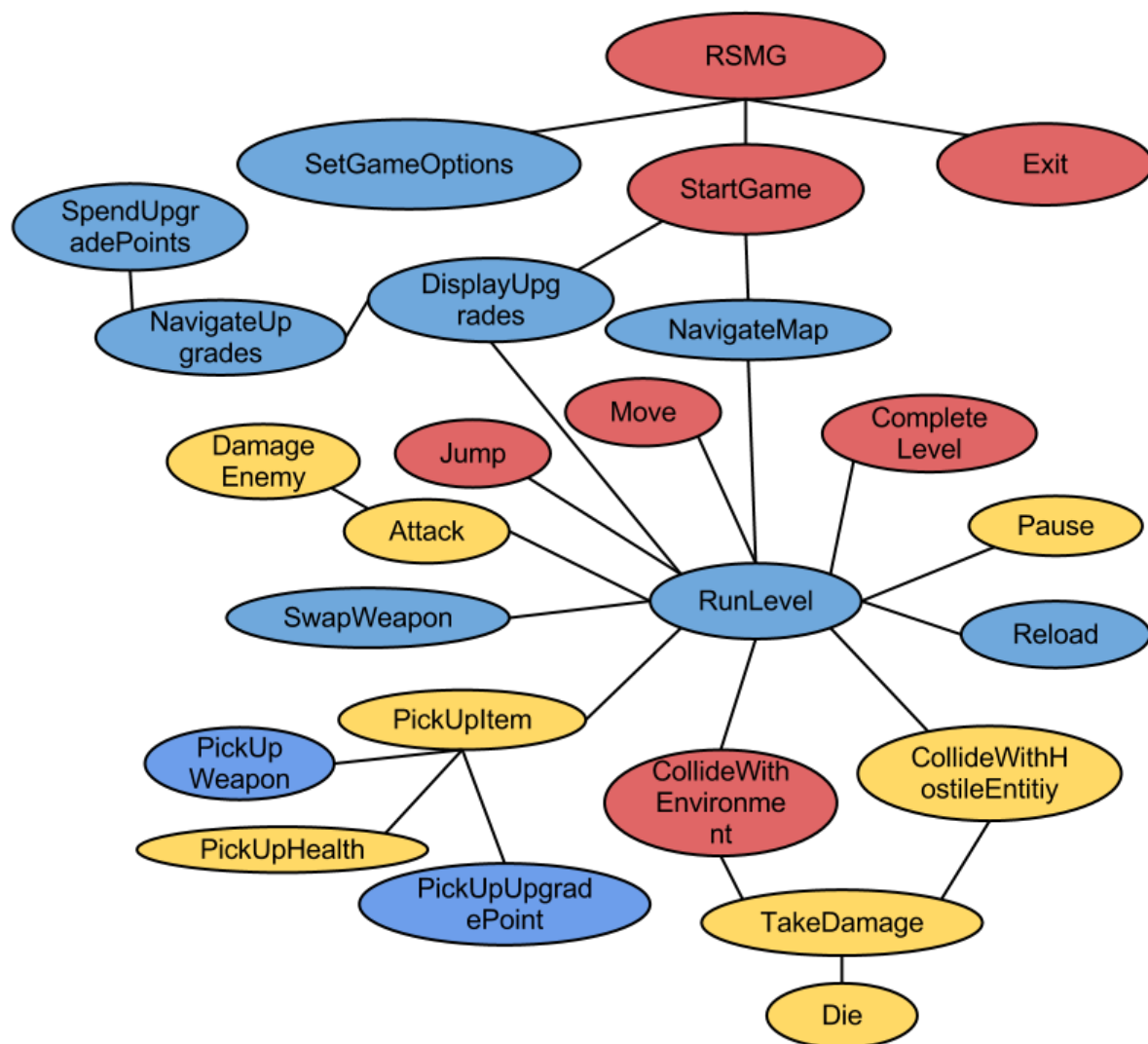
The application can be run in both window and fullscreen mode. When it's in fullscreen, it covers the whole screen, while in window mode, it runs in a 960\*540 large window. It's possible to switch between these modes in the options menu in-game or in the configuration file located at *res/data/config/config.xml*. Note that the game needs to be restarted before this change takes place.

## 2.4 References

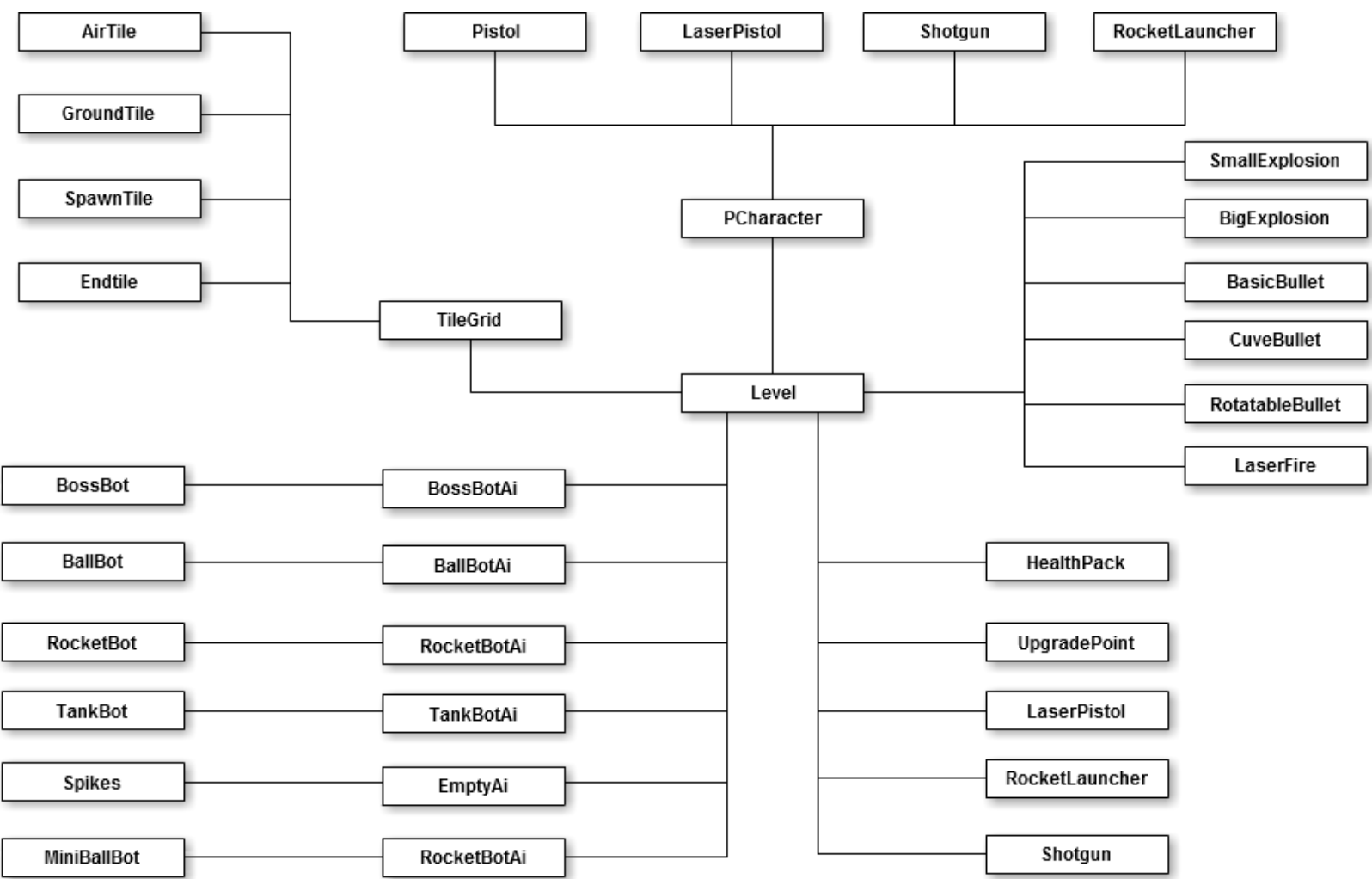
NA

## APPENDIX

### Use Cases Mindmap



### Domain model



Pic 2. Our domain model

**GUI**

