

# Requirements JBubble Bobble

By

## Group 2

Remi Flinterman

4362950, remiflint@live.nl

Arthur Guijt

4377338, a.guijt@student.tudelft.nl

Laurens Kroesen

4350286, l.kroesen@student.tudelft.nl

Thomas Overklift

4080890, t.a.r.overkliftvaupelklein@student.tudelft.nl

Lars Stegman

4365801, l.s.stegman@student.tudelft.nl

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Supervisor: Dr. A. Bacchelli  
Teaching Assistant: Aaron Ang

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# 1. Functional Requirements

For the game JBubble Bobble the functional requirements are grouped under Functional Requirements. Within these functional requirements, four categories can be identified using the MoSCoW<sup>1</sup> model for prioritizing requirements.

## 1.1 Must Haves

- The game's board shall consist of a grid of be 18 wide and 18 cells high.
- The player's character shall have a size of 1 cell wide and 1 cell high.
- The player's character shall be able to move left and right.
- The enemies shall have a size of 1 cell wide and 1 cell high.
- Platforms shall be 1 cell wide and 1 cell wide.
- Characters shall not be able to move outside of the grid.
- Characters shall not be able to move through platforms when coming from above.
- Characters shall not be able to move through platforms when coming from the side.
- Characters shall be able to move through platforms when coming from underneath.
- The player's character shall be able to blow bubbles.
- The game's grid shall appear when the game starts.
- The blocks shall appear within the grid when the game starts.
- The enemies shall appear within the grid when the game starts.
- The player's character shall spawn when a level is started.
- At least one level shall be playable.
- The player's character shall have one life.

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<sup>1</sup> DSDM Consortium, <http://www.dsdm.org/content/10-moscow-prioritisation>, July 2008

## 1.2 Should Haves

- The player's character shall be able to jump.
- Enemies shall be able to move left and right.
- A high score shall be visible within the window.
- The enemies shall be able to be encased in bubbles.
- The player's character shall die when it collides with an enemy that is not encased.
- A level shall be completed when all enemies have been defeated.
- An enemy shall die (be defeated) when it is encased and the player's character collides with it.
- Pickups shall be bonus items that can appear.
- Pickups shall have a size of 1 cell wide and 1 cell high.
- Pickups shall appear when an enemy dies.
- The player's character shall be able to pick the pickups up when it collides with them.
- The high score shall increase whenever the player gets a pickup.
- The high score shall increase whenever the player's character kills an enemy
- The high score shall increase whenever the player completes a level.
- A bonus level shall be added to the game.
- Enemies shall have animated sprites.
- The player's character shall have animated sprites
- Bubbles shall have animated graphics.
- Pickups shall have animated graphics.
- The game shall have multiple levels.
- A bubble shall automatically pop, 10 seconds after it's been created.
- A bubble shall be filled when it collides with water.
- A filled bubble shall cause a stream of water to appear when popped.
- A stream of water shall move down the level when it appears.
- A stream of water shall kill enemies when it collides with them.
- A stream of water shall move the player's character when it collides with it.
- The player's character shall have more than one life.

## 1.3 Could Haves

- The player's character shall be able to jump on a bubble.
- The player shall be able to adjust the audio level of the game.
- Levels shall be generated by a randomizer.
- A new level shall be loaded when a level has been completed.
- Enemies shall be able to fire weapons at the player's character.
- One level shall be added as a tutorial.
- Controllers shall be fully supported.
- The player shall be able to pause the game while it is in progress.
- The player shall be able to resume the game while it is in paused.
- Background music shall be added.
- A sound shall be played when the player's character jumps.

- A sound shall be played when the player's character shoots a bubble.
- A sound shall be played when the player's character kills an enemy.
- An all-time high score list shall be added to the game.
- The player's character shall be able to earn extra lives.

## 1.4 Won't Haves

- 3D graphics shall be implemented.

## 2. Non functional requirements

- The game shall be created in Java.
- The project shall be stored on GitHub
- The project shall be built with Maven and Travis CI
- The project shall have at least 80% Line Coverage
- The first working version of the game shall be delivered before 11 September 2015 23:55
- The game shall run on Windows (7 or higher), Mac OS X (10.8 or higher) and Linux

### 3. User Stories

#### **As a player:**

- When I press the start button, the main menu starts.
- While the game is running, I want, when I press the left and right arrow keys, to be able to move around.
- While the game is running, when pressing a button, I want to be able to blow bubbles.
- While the game is not running, When I press buttons other than the start button, I want nothing to happen.
- While the game is running, when a bubble I shoot directly touches an enemy, I want the enemy to become trapped inside a bubble.
- While the game is running, when I jump up, I can go through platforms.
- When I jump up, and I'm at the top of the screen, and there is not a wall above me, I will appear on the bottom of the screen.
- While the game is running, when I jump on a bubble, I bounce up.
- When I fall through the bottom of the map, I want to reappear at the top of the map.

#### **As a bubble:**

- I want to float upwards.
- I want to be able to trap an enemy when I collide with one.

#### **As an enemy:**

- I want to 'kill' the player when I'm not trapped and I touch him.
- When I'm the only enemy left on the screen, I want to get a slightly different, angry looking sprite, and move faster.