

# TI2206 Software Engineering: Bubble Shooter

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# Functional

## Must-have features

- When the user starts the application, a main menu with three buttons will be presented. Inside the user is able to do the following actions:
  - When the user clicks on the *play* button, then a new single player game is started.
  - When the user clicks the *settings* button, then the user will change screens to the options menu.
  - When the user clicks the *quit* button, then the application will terminate. This results in closing the application.
- Given the user has started a new single player game, by clicking on the *play* button in the main menu, the user can do the following actions inside the single player game:
  - When the user presses the *left arrow key* the cannon will rotate to the left, the opposite will be done when the *right arrow key* is pressed.
  - When the user presses the *spacebar* button on the keyboard, the user will shoot a projectile in the direction the cannon is facing.

## Should-have features

- Given the user has started a new single player game, the following game mechanics and events should apply:
  - When the user enters the playfield, the user will be presented a field filled with bubbles.
  - Given that a projectile has been fired and it hits another bubble, the projectile will disappear along with the bubble if the color of both bubbles are the same and **at least** another bubble adjacent to the bubble that was hit, is also of that same color.
  - When the user has fired a projectile and it hits another bubble it will stick to that bubble, if the condition above does not hold.
  - Given that the user shoots a projectile all the way to the ceiling, it will stick to the ceiling when the above two rules do not hold.
  - Given that the user has fired, when the user is able to fire again a bubble of random color (out of a selection of five) will spawn as the new projectile.

- Given that a bubble was hit and removed, if the adjacent bubbles do not connect to either the ceiling or other bubbles (that ultimately connect to the ceiling), then the bubble is removed.

### **Could-have features**

- Given the user has started the application, clicking on a button will play a sound effect.
- Given the user has started the application, background music will be played right away.
- Given the user clicks on the settings button, the user will be presented the options menu, where the user can do the following actions:
  - When the user clicks the *Volume Up!* button, the background music volume will rise.
  - When the user clicks the *Volume Down!* button, the background music volume will go down.
  - When the user clicks the *SFX Up!* button, the sound effects volume will rise.
  - When the user clicks the *SFX Down!* button, sound effects volume will go down.
  - When the user clicks the *Back* button, the user will return to the main menu screen.
- Given the player has started a single player game, when a bubble reaches the floor (bottom of the screen) the player loses and the game ends.
- Given the player has started a single player game, when all bubbles are removed the player wins!

### **Won't-have features**

- Given the user has started a single player game, when the user presses the *Escape* button, the game will pause.
- Given the user has started a single player game, the user can exit the game (go back to main menu) by pressing the *M* key on the keyboard.

## Non-functional

- A simple version should be finished within one week (13/09/14).
- The development team consists of five group members.
- The game must be written in Java using the following supporting tools:
  - maven
  - jUnit
  - git
- The development process (including the sprints) will be using SCRUM, with the help of the following web based tool:
  - ScrumDo
- Meetings
  - Friday 20:00 - 05/09/2014 (Daily sprint)
  - Monday 20:00 - 08/09/2014 (Daily sprint)
  - Tuesday 9:45 - 09/09/2014 (Sprint planning)
  - Wednesday 20:00 - 10/09/2014 (Daily sprint)
  - Friday 20:00 - 12/09/2014 (Sprint review)
  - Tuesday 9:45 - 16/09/2014 (Sprint retrospective)
- The game must support the following OS:
  - Microsoft Windows
  - Linux
  - OS X