

| Bouble Trouble  | Sprint Assignment 3  |                  |                                   |                             |                        |               |       |
|---|--|------------------|-----------------------------------|-----------------------------|------------------------|---------------|-------|
| Group 14  |  |                  |                                   |                             |                        |               |       |
| User story  | Task   | Task assigned to | Estimated effort per task (hours) | Relative importance (A - E) | Actual effort per task | Done (yes/no) | Notes |
| As a user I want to be able to navigate to the options menu and enable/disable certain options. | Implement a button to navigate to the options menu from the main menu.   | Jasper           | 1                                 | A                           |                        | yes           |       |
|   | Implement an option to manually set the control keys.  | Shane            | 4                                 | A                           | 5                      | yes           |       |
|   | Implement an option to adjust the volume.  | Jasper           | 2                                 | C                           |                        |               |       |
|   | Implement that the settings can be saved to a properties file.   | Shane            | 1                                 | C                           | 3                      | yes           |       |
| As a user I want to be able to navigate back to the menu from the game.                         | Implement a back to menu button in the game.   | Jasper           | 1                                 | C                           |                        | yes           |       |
|   |  |                  |                                   |                             |                        |               |       |
| As a user I want to be able to see highscores.  | Implement a system that saves the ten highest scores into a file.  | Jasper           | 3                                 | A                           |                        |               |       |
|   | Implement that a score is saved in the file at the right place in the ranking when the score is one of the ten highest scores. | Jasper           | 2                                 | A                           |                        |               |       |
|   | Implement an option in the menu to see the highscores.   | Jasper           | 3                                 | A                           |                        |               |       |
| Improve Level class   | Move PowerUp functionality to PowerUpManager and implement the PowerUpManager in Level   | Joris/Hidde      | 4                                 | A                           | 4                      | yes           |       |
|   | Create CollisionManager for collision functionality  | Hidde            | 3                                 | B                           | 3                      | yes           |       |
|   | Create CollisionResolver to resolve collisions   | Joris            | 3                                 | B                           | 3                      | yes           |       |
|   | Implement Observer pattern for Level and GameController  | Joris            | 3                                 | B                           | 2                      | yes           |       |

|      |   |              |   |   |   |     |   |
|------|---|--------------|---|---|---|-----|---|
|      | Remove responsibility from level's objects to detect collisions   | Hide         | 2 | B | 3 | yes | Removing the responsibility from- and refactoring level took more time than expected      |
|      | Change Collidable interface to better match SOLID (and update the existing implementations of Collidable) | Hide         | 3 | A | 2 | yes |   |
|      | Add tests for new classes (PowerUpManager, CollisionManager, CollisionResolver)                           | Hide & Joris | 4 | B | 5 | yes | Moving functionality outside of level to other classes improved testability significantly |
|      | Test CollisionResolver  | Cas          | 2 | B | 3 | yes | This is a task that Cas took from Joris and Hide because he had already finished his part |
|      | Remove/change existing tests for classes/functionality that was changed                                   | Hide & Joris | 4 | B | 3 | yes |   |
| Misc | Read the software economics paper   | Cas          | 3 | C | 2 | yes | The paper was shorter than expected   |
|      |   |              |   |   |   |     |   |
|      | Answer the questions about the paper  | Cas          | 4 | B | 4 | yes |   |
|      |   |              |   |   |   |     |   |
|      |   |              |   |   |   |     |   |
|      |   |              |   |   |   |     |   |

# Main problems encountered

## Problem 1: `getKeyCode()` not working as expected

Description: In javafx there is the `getKeyCode()` function which takes as input the name of a key as a string and returns the corresponding `keyCode`. This function was needed for saving the controls. Everywhere in the documentation, keys are referred to in full caps, e.g. "SPACE", "LEFT", "RIGHT". Naturally that's also the format we thought `getKeyCode()` would need. This is not the case, the format is: "Space", "Left", "Right".

Reaction: Test to see if functions you are new to actually work as expected.

## Problem 2: Level class had lots of dependencies

Fix: move all collisions to dedicated classes and thus remove dependency on model classes. Now all collision functionality is removed from the Level class.

## Problem 3: Level and GameController class were very co-dependent

It took a lot of time to divide responsibilities and functions. After refactoring, the debugging of all the timers and behaviours took even more time. The fix was investing time.

## Adjustments for the next Sprint Plan

- 1) Fix Observer-Observable design pattern
- 2) Fix the highscore bug (highscore message is sometimes displayed at random times)
- 3) Fix the move-through-walls bug