Requirements

Bacchelli-Bubble

Functional Requirements

Must Haves

- The Game shall have a final level, consisting of a 'boss fight' with a special type of bubble, the Bacchelli-Bubble.
- The Bacchelli-Bubble shall be able to periodically spawn other bubbles, further referred to as Bacchelli-Bullets.
  - Bacchelli-Bullets shall not count towards the level completion, meaning that killing the Bacchelli-Bubble is the only requirement for finishing the level.
  - Bacchelli-Bullets shall have a downwards vertical motion.
  - Bacchelli-Bullets shall not split into smaller bubbles.
- The Bacchelli-Bubble shall not split into smaller bubbles.
- The Bacchelli-Bubble shall have Health.
- The Bacchelli-Bubble shall have a later defined initial amount of Health, based on balancing considerations of the developers.
- The Bacchelli-Bubble, like normal bubbles, shall be considered hit when a projectile collides with it.
- The Bacchelli-Bubble shall lose 1 Health when it is hit.
- The Bacchelli-Bubble shall be considered 'killed' (dead) when its Health reaches 0.

Should Haves

- The Bacchelli-Bubble shall have a texture resembling Professor Alberto Bacchelli.
- The player shall die on collision with the Bacchelli-Bubble.
- The Bacchelli-Bullets shall despawn on collision with any kind of wall.
- The Bacchelli-Bullets shall despawn when hit, which is defined as a collision with a projectile.
- The difficulty of the final level shall be in accordance with the requirements of the game[1], which state that each level shall be more difficult than the previous.

Could Haves

- The Bacchelli-Bubble shall regenerate 1 Health for every 10 seconds of not being hit.
  - The regeneration shall stop when the Baccelli-Bubble has its initial health (which is therefore also its max health).

Would Haves

- The Bacchelli-Bubble shall shrink according to his health, lower being smaller.
- The final level shall show a progress bar of the health of the Bacchelli-Bubble.

---

[1] See the initial requirements document, which is provided in the assignment05 folder of the git repository for convenient reference, named Initial_Requirements.pdf.

Non-Functional requirements

- All implemented code shall be tested extensively with meaningful line coverage of 100%, unless explicitly impossible due to limitations of external libraries. Meaningful line coverage is specified as coverage that asserts the correct behaviour of the touched code rather than simply executing methods.
- The texture used for the Bacchelli-Bubble shall resemble a portrait of Professor Alberto Bacchelli, mapped onto a sphere.
- The Bacchelli-Bubble implementation shall not break any requirements of previous implementations or the game as a whole, unless explicitly stated elsewhere in this document.