

# PacMan Requirements

SEM Group 25

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## 1 Must have

### 1.1 Functional

- Authentication using a username and password, via a database.
- The score of each play should be recorded in a database.
- At the end of each play, the user should be able to enter his/her name together with the recorded score.
- At the end of each play, the game should show the top 5 scores that have ever been recorded.
- There are four ghosts, each with their own unique AI (according to the original PacMan)
- There is a PacMan
  - PacMan can move
  - PacMan can collect pellets
  - PacMan dies when hit
- There is a level with walls and pellets
  - Eating pellets gives points
  - You can't go through walls
  - If you go off the board, you appear on the other side
  - Ghosts can't go through walls either

### 1.2 Non-Functional

- Use SQL and JDBC driver
- Use prepared statements in Java to avoid code-injection vulnerabilities
- JavaFX for UI and graphics
  - Have a canvas to draw the gameboard on
- Keyboard control over PacMan through JavaFX Key Listener
- Tests for at least 75% of meaningful (branch) coverage

## **2 Should have**

### **2.1 Functional**

- Multi-levels for PacMan
- Graphics for PacMan
  - Colored PacMan
  - Colored Ghosts
  - Clear definition of the map
- PacMan mouth animation
- Map parser
- Multiple lives
- Menu
- Being able to load different maps from a file

### **2.2 Non-Functional**

- Implementing a relevant code structure using various Design Patterns
- Using Mockito as a testing framework
- It runs 30+ fps on a normal laptop

## **3 Could have**

### **3.1 Functional**

- There are big pellets PacMan can eat
  - This will allow PacMan to eat ghosts and earn points
  - Ghosts turn blue for a certain amount of time until it ends
- Local multiplayer
- Sounds
- Background Music
- Sprite designs
- Fancy animations
- Easy/Hard modes
  - You have more/less lives

- More/Less points
  - More/Less ghosts
  - More/Less pellets
- Different types of pellets / bonuses
- Easter egg?
- 100
- Achievements
- Styles
  - Unlockable

#### **4 Won't have**

- Social media integration
- Setting up profile picture
- Chatting with other player
- Online multiplayer
- Microtransactions