

## **Implementation**

Group 4 - THADJAM

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### **Working Implementation**

A University-themed maze game, with tile-based collision implemented in LibGDX. The player must find the hidden bus ticket and reach the school bus before the allotted time of 5 minutes is up, with the timer displayed in the top right of the screen and pause functionality.

The game implements 11 tracked events: 3 positive (locker speed boost, dean freeze, extra time), 3 hidden (bus pass, teleport, questionnaire), and 5 negative (chasing dean, patrolling deans, drowning hazards, slow-down obstacles, time-decrease traps). The player is awarded achievements based on their gameplay interactions.

The player's score is saved to a persistent top 5 leaderboard, alongside their name in a JSON file. The executable JAR contains all the dependencies necessary to play without an internet connection.

### **Third-Party Assets, Licenses and Libraries:**

All licenses & libraries are suitable for this academic, non-commercial project. No assets require commercial licensing or violate terms of use.

Asset	License	Usage
Cute Fantasy Free Tileset	Non-commercial	Maze tile sets
Modern Interiors Free v2.2	Non-commercial	Building interior decoration assets
Mystic Woods Free v2.2	Non-commercial	Environmental assets
BUS TOPDOWN (Vecteezy)	Standard license	Bus sprite
Tiled Map Editor	GPL v2+	Map creation tool supported by LibGDX
Skin Composer	MIT License	UI skin generator
LibGDX Framework	Apache 2.0	Game development framework
JaCoCo	EPL 2.0	Code coverage tool used to generate test reports in GitHub Actions.
JUnit 5	EPL 2.0	Testing framework used for automated unit tests in CI

### **Unimplemented Features - Deferred Legacy Requirements**

The following items originate from earlier requirement specifications and are not mandated by the Assessment 2 Product Brief.

- **Audio:** Background music and sound effects were not implemented (FR\_UX\_MUSIC, NFR\_MUSIC\_CONTROL, NFR\_SOUND\_EFFECTS\_CONTROL) as audio was not mandated by the Product Brief and development effort was prioritised towards the core gameplay features.
- **Accessibility:** The Colourblind mode is not implemented (UR\_SETTINGS, FR\_SETTINGS\_OPTION) as these were not required by the Product Brief.
- **UI Polish:** A full settings menu UI was not developed (UR\_SETTINGS, FR\_SETTINGS\_OPTION) as pause, restart, and exit functionality are supported via the menu navigation, satisfying the product brief and avoiding feature creep
- **Exit flows:** Restart screen wasn't implemented (NFR\_RESTART\_GAME\_SCREEN) as the restarting is handled by returning the player to the main menu