

# Implementation

ENG1 Team 9

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### **Third-party Libraries**

Several of the libraries we have used in this project use the Apache 2.0 licence. This is a permissive licence that would be suitable for development of a game as it allows for commercial use if the game were to be marketed later in development.

#### **JUnit (Licence - <https://www.eclipse.org/legal/epl/epl-v20.html>)**

JUnit is a testing framework that helps the developers write and run tests to ensure that the code is working properly. JUnit uses the EPL licence which is a free and open source licence and is suitable for developing a game.

#### **JaCoCo (Licence - <http://www.eclipse.org/legal/epl-2.0>)**

#### **Checkstyle (Licence - <https://www.gnu.org/licenses/old-licenses/lgpl-2.1.en.html>)**

The LGPL 2.1 licence is a permissive licence that does not have the strong copyleft requirements of the GPL licence, allowing use in proprietary software under certain conditions.

#### **Lombok (Licence - <https://projectlombok.org/LICENSE>)**

Lombok is a Java library that automates logging variables and generating getters, setters and constructors during compile time which reduces development time by maintaining a clean and concise code base.

This is free and open source software with no restrictions on use.

#### **LibGDX (Licence - Apache v2.0: <https://www.apache.org/licenses/LICENSE-2.0.txt>)**

LibGDX is a Java library that used for building cross-platform 2D and 3D games

#### **Maven (Licence - Apache v2.0: <https://www.apache.org/licenses/LICENSE-2.0.txt>)**

Maven is a project management tool that simplifies managing dependencies, running tests and packaging application

#### **Icograms (Licence - <https://education.icograms.com/license-agreement-basic>)**

Icograms is a map builder and vector graphics library that provides the assets for both the map and buildings. This licence may not be suitable for further development as there are restrictions on how the assets can be used and there is a clause preventing use in commercial software. Our game supports swapping out building and map assets, as the placement and grid are implemented independently of the actual assets used.

#### **Carbon Icons (Licence - <https://choosealicense.com/licenses/apache-2.0/>)**

Carbon Icons is an icon set, designed by [IBM](#) and [Carbon Design System](#), that has been open sourced with the licence: Apache License 2.0. This set provides one of the icons for our interface.

**UR\_EVENTS** - While the project features one planned and three unplanned events that occur throughout gameplay, the user does not currently need to react to these events. The snow event boosts satisfaction, while the pandemic event applies a penalty for which there is currently no mitigation.

At the end of assessment 2, all other requirements have been met, which covers the full product brief.