

# Implementation

**Cohort 1 group 11**

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## **Implementation References**

The game engine we decided to use was libGDX [1], including the main library com.badlogic.gdx. libGDX and its main library is under the open source license Apache 2.0 . Apache 2.0[2] is suitable for our needs because it is a no-charge, royalty-free license which allows us to publicly display the game. This means that if the game was made available to the public, it would still comply with the terms of the license, and will allow any future developers to freely and legally work on our game.

To design the graphics of our game we used Tiled[3], Tiled is licensed under a General Public License. This is suitable for our needs because it is free and open-source, allowing us to use Tiled for whatever purpose we need in our game without having to pay any money.

When creating our game we sourced assets from a range of sources. A majority of the assets came from 2 assetpacks called "assetpack"[4] and "office tileset assetpack"[5] we found these on itch.io the licence for these assetpacks allows us to edit and use this tileset for commercial and non-commercial projects. These 2 assetpacks cost £7.57 total but we felt this was a reasonable price to pay.we Did also pay £4.00 for the assets needed for an animated character the asset pack was called "hana-carka-base-character" [6] this was also found on itch.io and had the same licensing as the other asset packs. We did use two other non self-made assets that were not in these packs and individually sourced which was clip art of a raspberry pi [7] according to the licensing it is available for free for Non-Commercial Use. and clip art of a goose [8] which has a cc0 licence meaning the work is in the public domain and can be used for this project

The audio and sound effects of the game were all sourced from pixbay[9], pixbays licensing allows for free as long as you do not redistribute on a standalone basis since we use the audio as part of a larger project; our game, it is allowed to be used.

When making the game menus we used canvas fonts[10] for the text. Canvas licensing for the fonts we used allows you to use them as long as you do not attempt to redistribute the font itself which we are not.

All licence .txt documents included with assets have been included in the files in their relevant place alongside the assets the licence is for

## **Unimplemented features**

All of our features that were listed as a “shall” priority in the requirements document were implemented; this includes all features required for assessments 1 & 2. These features behave as described in our architecture and meet the traceability expectations of Assessment 1 & 2. Some of the features in the requirements document we made were listed as a “may” or “should” priority - something that was not a required future but something we may want to implement. We did not implement 2 of these features; these were UR\_TUTORIAL and UR\_DIFFICULTY adding a tutorial and difficulty modes. We decided that both of these were quite time intensive to implement and the time would better be spent focusing on and improving the required features.

## **Sources**

[1] libGDX:

<https://libgdx.com>

[2] apache 2.0:

<https://www.apache.org/licenses/LICENSE-2.0>

[3] tiled:

<https://www.mapeditor.org>

[4] Part of map/background assets:

<https://donarg.itch.io/assetpack>

[5] Part of map/background:

<https://donarg.itch.io/officetileset>

[6] Animated character sprite:

<https://otterisk.itch.io/hana-caraka-base-character>

[7] Raspberry pi image asset:

<https://www.hiclipart.com/free-transparent-background-png-clipart-aqzbq>

[8] goose image asset

<https://duckhive.itch.io/goose>

[9] All sfx and audio under:

<https://pixabay.com/>

[10] fonts for menus:

<https://www.canva.com/policies/content-license-agreement>

<https://www.canva.com/policies/fontsmith-EULA/>