Implementation

Cohort 3 Group 6 - Carbon Goose

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Assessment 1:

- LibGDX (Library) Uses Apache License 2.0, a permissive open-source licence. This was useful to us as it meant we could use it freely and treat it as our own game without needing to source the code.

- Shade UI https://github.com/czyzby/gdx-skins/tree/master/shade (UI Assets) - is also released under the Apache License 2.0, which allows us to use the assets without significant restrictions, except for the use of trademarks or other protected properties. However, this was not an issue with our project, making it a good fit for our team.

- StableDiffusion - https://civitai.com/models/297501/wildcardx-xl-animation - distributed under the CreativeML Open RAIL++-M licence. This licence allows usage, modification and sharing of the model for both commercial and non-commercial purposes, as long as users follow specific guidelines, like providing credit. This is useful as we may need to share the model with another team, avoiding issues with licensing.

- Asset https://www.pngegg.com/en/png-btgbw - This image is available for non-commercial use only, which works well for our team as we are not commercially listing our product.

We had no issues at all with any unimplemented features as all of the core features required for Assessment 1 are fully implemented, including:

- One building in each location. Meets NFR_VARIETY fit criteria since the game does have one building type for food, one for accommodation, one for education, and one for recreational activities.

- A tracker of how long the game lasts, starting at 5 minutes. The UR_FIVE_MINUTES requirement is met here as it allows the user to play for 5 minutes, including displaying the timer to the user (FR_TIMER).

- A simple counter denoting how many of each type of building have been placed. FR_TEXTUAL_DESCRIPTIONS is largely met here, linked with FR_PLACE_BUILDING, as there is a clear relationship to the user between a building being placed and it being indicated by the text of the counter incrementing.
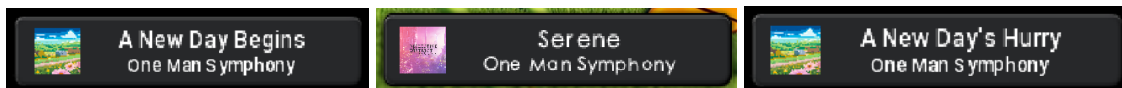
Assessment 2:

The assets used for assessment 1 have not been changed, so the licenses remain the same. Any new building graphics and particle images have been hand drawn by our group members, so they do not have any licensing issues.

All sound effects have been sourced from https://pixabay.com/, and most have been slightly edited locally to better fit the game. Their license allows you to use Content for free, use Content without having to attribute the author, and modify or adapt Content into new works. Their license can be found here: https://pixabay.com/service/license-summary/.
This license is suitable for the project, as it does not impact how we use the sounds, as long as they are not used for immoral or illegal purposes (which clearly does not affect the project).

The music used in the game was created by One Man Symphony, and he allows his creations to be used in projects, with necessary attribution:

> "Yes, you can use all of my content in any of your personal and commercial projects. You can use them in your games, movies, apps, streams, podcasts, and social media channels and posts—simply in any medium you can think of. The only condition you need to meet is providing appropriate credit back to me for my work." – Taken from the FAQ section.

This is perfect for the project, because similar to many major games now, we created a dynamically updating "Now Playing" widget to both the main menu and the game screen, which provides credit to the music's composer, as well as the album cover for the songs, as shown below:

We had no issue with implementing all of the updated project requirements for assessment 2. These included:

- **At least two placeable buildings or areas where students can perform recreational activities (within the map boundaries).**
  - NFR_VARIETY is met here because we have implemented multiple of each kind of building.
- **At least three events which happen during the course of the game.**
  - UR_EVENT_INTERACTION is met, as we have a very large number of potential unplanned events. Some of these events, for example a building catching fire, will definitely be followed by a specific event (in this case a "fire insurance" event), which the user will be able to plan for.
- **A leaderboard with the name and score of the top 5 scores.**
  - UR_LEADERBOARD, and part of NFR_INTUITIVE is met here, as the button to access the leaderboard is very clear in the main menu, which displays a clear list of the top five scores. (FR_LEADERBOARD)
- **Calculating satisfaction scores using building distances and events.**
  - FR_CALCULATE_SATISFACTION is met, as buildings and event occurrences clearly affect satisfaction scores, shown when hovering over individual accommodation buildings (FR_TEXTUAL_DESCRIPTIONS).
- **Achievements.**
  - The achievements menu is clear, displaying achievement names and the amount of score that each achievement gives the player on completion. This can be found on the main menu screen, as well as on pop-ups when the achievement is completed in-game. (NFR_INTUITIVE, FR_ACHIEVEMENTS)