

3 | Implementation

3.1 | Documented Code

All code can be found on the GitHub Repository, <https://github.com/kirbyalasdair/EvilGeese>
An executable can be found at <https://ojp5o8.github.io/Mambo-Studios/GameExecutable4.zip>

3.2 | Software Changes

The game that we received from Coffeless was complete and fully working except for one small flaw where a game square remained unenterable even after the character was deleted. This meant we had no other physical fixes to do. The only other required changes were to implement the new objectives from part four. We then made a design change by changing the name of the game; this was simply to make both versions distinct and due to a personal preference for the new title. Some other fixes were brought up during Beta testing, please see the Testing report for a full list of these changes[1].

Fixes

A *blockGameGrid* variable was added to the character 'u7' in the Library that turned false after woken causing the passage to open.

A check was introduced to the ability-select in combat. This was introduced to fix the crash that occurred due to selecting an ability without sufficient mana. This fix was very simple, placing the existing script within an if statement. We decided not to complicate the system by removing abilities that couldn't be chosen and instead just made clicks unresponsive, the player can change ability selection or make a basic attack.

Gorilla (Requirement F17)

The Gorilla has been uploaded in the character factory, this follows the traditional character architecture meaning it has a 'name', health, sprites and energy.

We also created three attacks, a basic attack and two special abilities.

To implement the Gorilla we added a new realization of the CombatAbility interface, this causes the CombatManager to check if the attack is a GorillaAttack during target selection, if it is then a random number is checked against the rampage probability to determine whether the Gorilla can target friends or foes. This system minimises changes with the game's code and allows for easy extensions of the Gorilla in future, for example if future developers wanted to give other characters or enemies that chance to hit friendly characters.

We have also created an intro piece for the Gorilla within the first scene of the game using the dialog system inherited from previous teams.

Quests (Requirement F18 & F19)

After a meeting with the client within a SEPR practical it was decided that the quests would be chosen as choosable side along content, this fits within F18 which states that the quest must be chosen before the game starts as a separate sidealong feature. It was decided with the client that chosen quests that did not allow change in objective was sufficient to fit this requirement as long as there were three separate quest parts.

To do this we implemented a new Scene: The Objective Menu. We created this scene identically to the Main menu except for the exclusion of the central image on the background to allow more space for text. This kept the screen inline with the GUI requirements set out by Coffeless, the buttons were also reused with only their action on click changed.

This required two new buttons, one to reach this scene and one to return to main menu, For this we edited the Button Manager Script, we created two loadScene commands that would allow transitions in an identical way to scene transitions already in place but without the a gamestate manager control as this was not needed as a game was not being entered.

On click the buttons load two different Quests which are saved as save files within the game package, this is identical to the process used to load the Demo mode and does in fact use the same command to save on creating new content. Within these saves the relevant quests have been started and the option to start the others has been hidden to ensure one quest occurs at once.

The Quests themselves have been made entirely through inbuilt game building features already present with in the inbuilt Unity add script features. The One new change made necessary by this was the creation of several new enemies, these all needed a new sprite and health/attack profiles. We kept as identical to the original process as possible, new code lines are exactly identical to the original lines loading in the original characters. Each quest ends with an NPC gifting the player a cash reward for completion, this makes buying characters and so beating the main game far more achievable, so fulfilling F19.

The changes described here are all extensions rather than changes, this is an important justification as it shows the extensibility of the code, something that is crucial to the selling of the product to the client, this implementation of the code means that adding new characters/ scenes/battles as we have done here is both easy and returnable as deleting the new code will return the game to its previous state with no ill effect to the workings of the game.

GUI

The format for GUI as described by Coffeeless was deemed acceptable and sufficient for continued use in the game, there revisions to the original combat layout of buttons and slight change to layout was both useful and fit in the justification layed out in their report. This meant we had very little that we wanted or needed to change, as stated above the one change we had was to implement the new objective menu. This fits requirement F18 by completing this menu, by completing a new GUI we had to make sure we kept the requirements completed by the existing GUI true, UH2 requires the game to be accessible. By keeping the original menu from the previous game we believe the colour scheme should not just keep a theming between the two versions of the game but ensure that UH2 remains complete.

The newly included enemies and quests all interact with the player in the same way, the one new interaction type is part two of the quest 'The Robot Revolution' where the player must find information by interacting with a bookcase in the library. This is not a new interaction type as it is the same idea as interacting with the microscope in the Biology level, the difficulty may come from not having a distinct item to interact with as the player must search for it. This is a feature found in many similar games such as pokemon so we feel that it is a valid way of creating a new interaction in the game rather than repeated battles.

[1] <https://ojp508.github.io/Mambo-Studios/TestTable4.pdf>