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| Module | SEPR |
| Year | 2019/20 |
| Assessment | 4 |
| Team | FarmJabStudio |
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| Deliverable | Implementation Report |

Part B)

The following table is a list of changes and their associated descriptions detailing and justifying how our team modified the existing software to meet the updated requirements

| Change | Description |
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| Save and loading functionality | A “save” button was added to the pause screen that uses method <code>saveGame</code> to create a KROY file which contains data about the current playthrough such as position and health of entities, state of FireStation and ET forts A “load” button was added to the menu screen that uses method “ <code>loadGame</code> ” that uses a KROY file to reconstruct a playthrough using the data from the file. Implemented to meet requirements FR_GAME_SAVE, UR_GAME_SAVE, NFR_AUDIT, NFR_SAVED_CONTENT which states that the game should be able to save a game, and return to it at a later date”. |
| Five power ups added to the game | Five power ups that temporarily increase speed, temporarily increased damage, temporarily invincibility, repair health or refuel the firetruck can now be collected by passing over them have been added to the game world. Power up effects and removal are handled by methods “ <code>powerup</code> ” and “ <code>removePowerUps</code> ” respectively in class <code>FireTruck</code> . Implemented in order to meet requirements (UR_FIRE_TRUCK_POWERUP, FR_FIRE_TRUCK_POWERUP) which states that the game should spawn “5 unique power up types throughout the map for the player to collect”. Each powerup has a unique texture handled by variables in class “ <code>gameTexture</code> ” |
| Added easy, normal and hard difficulty buttons | When the player selects “new game” from the main menu, they will be taken to a screen where they can select the difficulty of the game, on that screen is a button labeled “easy”, “normal” and “hard, pressing the buttons sets the int variable <code>difficulty</code> in class <code>FireTruckSelectionScreen</code> to 1, 2 and 3 respectively which is used as a modifier by the class “ <code>Bullet</code> ” for determining the velocity of all projectiles, as well as the damage a fire truck takes upon being hit by a bullet in the method “ <code>applyDamage</code> ” in class “ <code>FireTruck</code> ”, this has the effect of making the game “easy”, “normal” or “hard” to beat respectively it controls the relative speeds of the projectiles and their damage to the fire truck. This was implemented in order to meet requirements UR_GAME_DIFFICULTY, FR_GAME_DIFFICULTY which state the game should offer a choice of difficulty options that control the relative difficulty of winning a game playthrough. The button textures and placement were implemented via the “ <code>FireTruckSelectionScreen</code> ” class. When a difficulty button is pressed, it changes tint, it also automatically deselects the previously selected difficulty option so that player has visual feedback as to what difficulty has been selected. Normal difficulty is selected by default. The int variable <code>difficulty</code> is also used as a modifier when increasing a player's score due to destroying an ET fortress, with a greater difficulty leading to a greater score. This is implemented via the “ <code>die</code> ” method in class “ <code>Fortress</code> ”. |
| Minigame GUI updated | The minigame GUI has been updated to include instructions on how to successfully complete the minigame, this was implemented by changing the background image file used by the “ <code>Minigame</code> ” class. This changed was implemented in order to fulfill requirements (UR_EASE, NFR_USER_INSTRUCTIONS) which states that instructions for the game should be available to the user. |
| Main menu | Once the user completes a playthrough either by winning or losing they are taken |

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| is now accessible for game over screen | to the game over screen, the game over screen now contains a “main menu” button which takes them back to the main menu. This change was implemented as the game’s purpose is to be on display during a university open day, previously if a user wanted to play another game cycle they would have to close the game and reopen it, which would be unacceptable in an open day environment where the game would be played several times by several different users. Now if a user wants to play another cycle, they can select the main menu button from the game over screen and start a new game from the main menu. |
| Pre-game screen updated | When the player selects “new game” from the main menu, they are taken to a pre-game screen which provides information about the stats of the four firetrucks, the screen has also be updated to include flavour text as to the theme and story of the game, this change was implemented in order to fulfill requirement UR_INTEREST which states that the game should be interesting and fun for users. We feel that providing the users with a narrative may improve their enjoyment and understanding of the game. |