Research Project - Tasks & Issues

As of Feb 27th 2019

Finish by April 9th

**GOAL**

Create a First Person Time Trial/Platformer that recreates the pilot movement of Titanfall 2 with the game engine Unity 3D. End release goal is a 5 level demo that a player can Walk, Run, Double Jump, Crouch, Slide, Wall Run, and Wall Jump through with obstacles that can get in the way or kill the player. There will be things that can’t be recreated, such as Clamber (Edge detection that player can latch onto and pick themselves up over and onto).

**TASKS**

**PLAYER**

* **Movement**

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| --- | --- | --- |
| **TASK** | **Status** | **Issues** |
| **Walk** | Implemented + Not Final | If player is on a slanted surface detected as ground, the player will need to stay attached to that surface while they move.  May need to change how fast a player moves. |
| **Sprint** | Implemented + Not Final | Same as Walk |
| **Jump** | **Implemented + Finished** |  |
| **Double Jump** | **Implemented + Finished** |  |
| **Crouch** | Implemented + Not Final | Can’t Lerp Camera smoothly to new position.  Unparent camera when crouching?  Also, can’t crouch while wallrunning |
| **Slide** | Implemented + Not Final | Jump, Crouch, Land and then Slide issue when Player isn’t moving  Character does not slide when xz magnitude is at proper value for sliding while crouched and player not moving at the moment of landing on the ground.  Needs to be able to slide when xz mag value is reached when crouching and on the ground whenever these happen.  Works when player is still moving, fails only when player is not moving. |
| **Wall Jump** | **Implemented + Finished** | Continue Testing, make adjustments as needed.  Jumping off a curved surface doesn’t properly work due to having to use ForceMode.VelocityChange |
| **Wall Run** | Implemented + Not Final | Able to wallrun on a curved surface.  Need to be sure that player stays on a convex surface as they turn.  Player flies off as they move on occasion  Decrease Movement speed while on the wall?  Helped mitigate issue, did not solve  Wall speed was 20, now 15 |

* **Collision**

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| **TASK** | **Status** | **Issues** |
| **Detect Ground** | Implemented + Not Final | Slanted/Sloped surfaces need to be able to be detected as ground (How much of a slope to cause that will need to be tested) |
| **Detect Wall** | Implemented + Not Final | Using raycasts when on a wall to further detect more walls for a curved surface to wall run on.  Using 6 ray casts currently (Immediate Left + right, 45 deg to the Left and Right, 135 degrees to the left and right)  May need to add more (30 deg, 60 deg, 120 deg, 150 deg) |
| **Detect Kill Object** | Not Started | Simple way to implement this is to have the object that can kill be tagged as such and using the tag of an object collided with to determine if this event has happened |

* **Death**

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| **TASK** | **Status** | **Issues** |
| **Die** | Not Started | Notify death  Automatically respawn the player |
| **Respawn** | Started | Should happen if the player dies or restarts a level. |

* **HUD**

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| --- | --- | --- |
| **TASK** | **Status** | **Issues** |
| **Player Status** | Implemented + Not Final | Have it represent Movement (Walk, Crouch, Run, Jump, Wall Run, Slide)  Needs Images |
| **Timer** | **Implemented + Finished** | Hours:Mins:Secs |
| **Pause Screen** | Started | Pause has to stop everything where it is and unpausing has to resume their pre-pause actions  Need to be able to interact using a mouse or a controller |
| **Level Results** | Not Started | Has to display Level Name, # of Deaths, # of Restarts, and Time Taken.  Appears when goal reached.  Stops player movement  Gives option to Replay the Level, go to Next Level, or return to Main Menu.  Need to be able to interact using a mouse or a controller |
| **Speed** | **Implemented + Finished** | Displays the current XZ magnitude/velocity of the player as an integer |

**OBJECTS/NON-PLAYER MODELS AND ASSETS IN A SCENE**

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| **TASK** | **Status** | **Issues** |
| **Block** | Implemented + Not Final | Texture  Yellow |
| **Wall** | Implemented + Not Final | Texture  Blue |
| **Path** | Implemented + Not Final | Texture |
| **Cylinder** | Implemented + Not Final | Wall run works but player flies off  Texture |
| **Platform** | Implemented + Not Final | Texture  White |
| **Pyramid** | Not Started | Be sure Player can Wall Run/Jump on and off of if Slant/Slope of it can allow (Determine what slope or slant would be best to cause wall detection) |
| **Pit** | Not Started | Texture |
| **Goal/Start** | **Implemented + Finished** | Goal needs to be easily understood, same for start  Goal stops the timer of the run, and causes results screen to be displayed. Also, stops player movement.  Start starts/resets the timer |
| **Kill Box** | Not Started | Texture  Red and Transparent |
| **Kill Pit** | Not Started | Texture  Red and Transparent |
| **Kill Floor** | Not Started | Texture  Red and Transparent |
| **Kill Sphere** | Not Started | Texture  Red and Transparent |
| **Respawn Points** | **Implemented + Final** | Have Respawn as Start?  Yes |
| **Start Points** | **Implemented + Final** | Have Start act as a Respawn Point?  Yes |

**SCENES**

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| **TASK** | **Status** | **Issues** |
| **Title** | Started | Main Menu for Navigation  Can start game, choose a level, go to credits  Need to be able to interact using a mouse or a controller |
| **Level Select** | Started | Display All Levels Created  Need to be able to interact using a mouse or a controller |
| **Credits** | Started | Profesor, Yourself, and All Software and External Assets Used |
| **Levels(1-5)** | See Levels Table | See Levels Table  Need to be able to interact using a mouse or a controller |
| **Test Level** | Implemented |  |
|  |  |  |

**LEVELS**

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| --- | --- | --- | --- |
| **TASK** | **Description** | **Status** | **Issues** |
| **Level 1** | Basic Level, Can’t Die, Single Path, Double Jump, Wall Run, Wall Jump, Slide | Started | For some reason, Ground Detection Failed. Issue already addressed  Have Respawn Points/Restart Points |
| **Level 2** | Same as before, Add Obstacles, Pit Fall | Started | Have Respawn Points/Restart Points |
| **Level 3** | Same as before but Pit Fall kills and causes player respawn, Add Multiple Paths | Started | Have Respawn Points/Restart Points |
| **Level 4** | Same as Before, Add Kill Platforms and Boxes | Started | Have Respawn Points/Restart Points |
| **Level 5** | Same as Before, but only 1 Platform to start from and 1 to end on, Kill Floor | Started | Have Respawn Points/Restart Points |

**SOUND (Look into BFXR and Creative Commons Sources, like Youtube)**

* **Sound Effects**

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| **TASK** | **Status** | **Issues** |
| **Walk** | Not Started |  |
| **Run** | Not Started |  |
| **Slide** | Not Started |  |
| **Jump** | Not Started |  |
| **Wall Run** | Not Started |  |
| **Land** | Not Started |  |

* **Music**

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| **TASK** | **Status** | **Description** |
| **Title** | Started  Want a new song  Using Skyline, Sequential Movement, New Sun? | Welcoming |
| **Level Select** | Started  Want a new song  Will use Watching Unfold | Making a Decision |
| **Credits** | **Finished + Implemented** | Title – Take a Look |
| **During Level** | **Finished + Implemented**  Want new music (2 or 3)  Can use previously made music (Devastate, Skyline, The Hydra) | Energetic  Gained three tracks from CC Sources  Made it so music is played as a playlist, somewhat |
| **Level Completion** | Implemented  Need to make it so music plays when Goal reached  Will use Settle Down | Celebratory |