PI3DW Mini-Project – Counter Ninja

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Game description

Counter Ninja is a first-person shooter where the player is put in a Japanese themed world filled with dangerous ninjas. The player must reach the end of the level by shooting, jumping and dodging his way through uncharted enemy territory. The player is equipped with his precious AK-47 and an M9 bayonet.
The main inspiration behind this mini-project is "Counter Strike 2" which is clearly shown through the models and skins of the weapons and the inspection feature of said weapons. Besides this is the game not based on any specific shooter directly.

Controls

Shoots and stab with "mouse 1"
Reload on "R"
Inspects the weapon with "F"
Switch weapon with "Q"

Project Parts

- Scripts
    - portalBehavior is responsible for triggering win condition on collision with player
    - CameraController controls mouse inputs and clamps to avoid turning upside down.
    - inventoryManager has the logic to switch between the knife and the AK-47
    - UIBehavior updates the ammo count text and health
    - PlayerMovement allows for movement through the character controller component and allows for jumping. Additionally, the player TakeDamage method is also in this script
    - EnemyBehavior controls the enemy states. These states are chase and patrol state. It also contains the enemy TakeDamage method and Die() method.

- knifeBehavior has the methods necessary required for the knife being able to stab with raycast, tags and layers and inspect. It uses the TakeDamage method from EnemyBehavior
- WeaponBehavior controls the gun logic, which allows for shooting, reloading and inspecting, if all required conditions are met. It contains reload and shoot methods and has the same inspect method as in knifeBehavior

- Player Object
    - The player object has all scripts necessary for the player to work except camera logic. The camera is a child of the player object, and the character mesh and weapons are children of the camera, which allows for the arms and weapons to follow the camera smoothly.

- Enemy Object
    - The enemy object has the logic on it, and with the mesh as children of the enemy object. Additionally, it has ragdoll physics when the Die() method is called. Also, the enemy needs to move on a NavMesh to navigate to the different patrol points, and to chase the player around objects.

- GUI
    - UI elements are very simple and are done on a canvas. Displays ammo in current magazine and reserve ammo.
- Assets
    - Rock, temple and torii assets along with the materials are from Fab.com and Quixel.com.
      https://www.fab.com/listings/2de98ac8-84ac-4970-8a78-cabd483c3c9a
      https://www.fab.com/listings/7e92f52a-ae1e-4ba8-aa58-28580a36e58e
      https://www.fab.com/listings/63297cd5-2d25-4bd1-a3a8-3d67340f9cd8
      https://www.fab.com/listings/df84925c-a276-4f6b-9852-bcb6dcb0e16f
    - Player model and enemy model are from Mixamo along with the enemy walk and stab animations.
      https://www.mixamo.com/#/?page=1&query=swat&type=Character
      https://www.mixamo.com/#/?page=1&query=ninja&type=Character
    - The background mountain is from https://en.ac-illust.com/clip-art/1592424/mount-fuji
- Materials
    - Custom Unity materials for weapons, objects and flooring. Walls also have normal maps
- Tree
    - The Cherry blossom trees used in the game are created through the Unity Tree creator tool.
- Particle system
    - The cherry blossom leaf particle system is a simple particle system that emits leaves that rotate over time and falls due to gravity by a very small amount
- Shader graph
    - A rather simple portal shader graph was created through the shader graph package. It rotates noise and from this we get a portal like material
- ProBuilder
    - ProBuilder was used to create the outline of the map and some walls and flooring.
- Models
    - The AK-47 and knife model are built with Blender by me but are directly inspired by Counter-strike 2.
- Sound

- Japanese inspired soundtrack and simple gun sounds and ninja death sounds

Time Management

Tasks	Time it took (in hours)
Setting up Unity project and creating a GitHub Repository	0.5
Research and conceptualization of game idea	1
Searching for 3D models, walls, temple, torii, character models.	1.5
Building 3D models with blender, AK-47 and knife	3
Making camera movement controls and Player movement	2
Creating and adding animations and sounds	1.5
Particles, shader graph, muzzle flash, objects materials and background content	2
Enemy behavior script and ragdolls	2
Scripting and making UI elements	1
Designing, creating and fixing level layout	2
Trees	0.5
Baking lighting	1
Shooting and reload logic	2
Code documentation	1
Fine tuning and bug fixing NavMesh and patrol points	1
Collisions and bug fixing the portal	0.5
ReadMe file	0.5
Total estimated hours	23

Links

GitHub Repository
https://github.com/OskarKaare/PI3DW_SOLO

YouTube link to project video
https://youtu.be/xxkZWcKSqvU

Used resources

- The AK-47 "case hardened" texture used for the material is from
https://csgobluegem.com/about/

- The AK-47 "wood handle" texture used for the material is from
https://www.beliani.dk/tv-bord-morkt-tra-prescot.html

- The "Black ice" texture used for the material for the knife blade is from
https://www.peakpx.com/en/search?q=black+ice

- The black leather texture used for the material for the knife handle is from
https://stock.adobe.com/dk/images/black-leather-texture-background-with-seamless-pattern-and-high-resolution/292850590

- Leaf texture used for the leaf material for the cherry trees is from
https://www.pngegg.com/en/png-bizsf

- Skybox material is from https://assetstore.unity.com/packages/2d/textures-materials/sky/skybox-series-free-103633?srsltid=AfmBOorrzN5yMSCCW0iu39I9HC6FFKUFSCtCLfIhux1_ij-2qyZmX9Wq

- UI Crosshair image is from https://www.redbubble.com/i/art-print/Crosshair-Green-LimitedDesigns-by-LimitedDesigns/48476117.DJUF3

- Music is from https://pixabay.com/music/adventure-japanese-battle-164989/

- Gun sounds are from https://pixabay.com/sound-effects/ak47-168856/

- Death sound is from https://www.myinstants.com/en/instant/minecraft-villager-death-46042/

- muzzle flash tutorial video https://www.youtube.com/watch?v=rf7gHVixmmc

- Unity Tree tutorial video https://www.youtube.com/watch?v=MgfxiLs7Ozk

- GitHub Copilot for scripting and bug fixing