Game Programming

Lecture V

Protoype to Production

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Asset Overview and Import

- The assets pack can be downloaded from:
  - https://e.pcloud.link/publink/show?code=XZhFVJZuzLw5aWEuizh3kDHE43iNVyak6l7
- Import to assets folder:
  - Materials
  - Audio
  - Sprites

Nebular Background Sprite

- 3D Objects
  - We can create primitives and then add materials on them
- 2D Objects
  - Called sprites
- Toggle 2D mode button
  - Travel into 2D mode
  - Set to perspective view
  - Player is still a 3D object
    - Mesh renderer instead of sprtie renderer
- Before converting our player to 2D sprite, we will change the background first

Nebular Background Sprite

- Go to 2D mode
- Drag SpaceBG_Overlay to Hierarchy
  - It will automatically attach the sprite into our game
  - Use the Rect Tool (T) to stretch the image to fit the screen
  - Rename as “Background”
- Check Sprite Renderer
  - Test Order in Layer by dragging “Player turn Left” to Hierarchy and change the order
  - Create new sorting layers: Background and Foreground
  - Select the sorting layer accordingly for player and background
  - Delete “Player turn Left”

Player 3D to Player 2D

- Convert Player from 3D to 2D
  - Create the Player from scratch using "Player turn left"
  - Drag and drop "Player turn left" to Hierarchy
  - Rename it as "Player"
  - Add player script
    - Change speed to 5
    - Set laser prefab
    - Set fire rate 0.15
    - Alternative solution: Go to old player and copy component and paste values here
  - Tag as Player
  - Delete old Player
- Test the game
  - Change sorting layer as Foreground
  - Change scale to 0.5 0.5 0.5
  - Test collision for laser and player

Enemy 3D to Enemy 2D

- Select Enemy and click open prefab
- Delete
  - Mesh renderer
  - Mesh filter
  - Box collider
  - Rigidbody
- Turn it into a sprite
  - Add component: Sprite Renderer
  - Drag "Enemy turn left" to Sprite
- Change sorting layer to Foreground
- Test the game
  - Test collisions
- Add RigidBody2D to Enemy prefab
  - Set gravity scale to 0
- Add BoxCollider2D to Enemy prefab (and also to Player)
  - Set isTrigger true
  - Edit collider for a better fit

Collision for 2D

- We have used OnTriggerEnter for 3D objects
  - Laser and Player collisions don't work now
- Change it as OnTriggerEnter2D
  - Also change Collider to Collider2D

Laser 3D to Laser 2D

- Delete Laser prefab and create the new 2D Laser from scratch
  - Drag the Laser sprite to Hierarchy
- Set the sorting layer
  - Foreground
- Change scale to 0.2 0.2 0.2
- Add BoxCollider2D
  - Edit collider to fit the sprite
  - Set isTrigger true
- Add RigidBody2D
  - Set gravity scale to 0
- Attach the Laser script
- Set tag
- Change the laser offset
  - Add laser to hierarchy and set position to 0, 0, 0 for both Player and Laser
  - Check the best y coordinate for a good laser offset
  - Change the offset value in the Player script, FireLaser function
- Make it a prefab
  - Remove the sprite from Hierarchy
  - Set Laser prefab of the Player script