Program Journal

Entry 1 – Constructing a FPS Mouse Look Component in Unity3D

1. Construction of the component began at 2:00pm on the 17th of March 2020.
2. To start things off, I have created an empty 3D game object and added a script, this object is my FPS player.
3. I will name this script “MouseLook”
4. I have now implemented the following lines of code into my script:

public float mouseSensitivity = 100f;

public Transform playerBody;

float xRotation = 0f;

1. Implemented the mouse sensitivity code, had to adjust the value enough for it to be comfortable.
2. To enable full 90 – 180-degree FPS camera movement, I constructed this line of code:

void Start ()

{

“Cursor.lockState = CursorLockMode.Locked” removes the mouse cursor when running the game.

Cursor.lockState = CursorLockMode.Locked;

}

void Update ()

{

float mouseX = Input.GetAxis("Mouse X") \* mouseSensitivity \* Time.deltaTime;

float mouseY = Input.GetAxis("Mouse Y") \* mouseSensitivity \* Time.deltaTime;

xRotation -= mouseY;

xRotation = Mathf.Clamp(xRotation, -90f, 90f);

transform.localRotation = Quaternion.Euler(xRotation, 0f, 0f);

playerBody.Rotate(Vector3.up \* mouseX);

}

1. I encountered a problem that had a easy solution, my script didn't seem to be working, this was because I simply hadn't included the script in the component. Construction of the code finished on the 16th of April 2020 at 3:30pm.

Entry 2 – Constructing a FPS Movement Component in Unity3D

1. Construction of the component began on the 24th of March 2020 at 2:30pm.
2. I created a new script and called it “PlayerMovement”, I have now added the script to my FPS player
3. The following lines of code was implemented:

These lines of code allow me to move the FPS object using the default ‘WASD’ or the arrow keys.

public class PlayerMovement : MonoBehaviour

{

public CharacterController controller;

public float speed = 12f;

public float gravity = -9.81f;

public Transform GroundCheck;

public float groundDistance = 0.4f;

“GroundCheck” allows the FPS player to platform, The code adapts to any sort of platform such as slopes, hills and stairs.

public LayerMask groundMask;

Vector3 velocity;

bool isGrounded;

void Update ()

{

isGrounded = Physics.CheckSphere(GroundCheck.position, groundDistance, groundMask);

if(isGrounded && velocity.y < 0)

{

velocity.y = -2f;

}

float x = Input.GetAxis("Horizontal");

float z = Input.GetAxis("Vertical");

Vector3 move = transform.right \* x + transform.forward \* z;

controller.Move(move \* speed \* Time.deltaTime);

velocity.y += gravity \* Time.deltaTime;

controller.Move(velocity \* Time.deltaTime);

}

1. Through the inspector I had to change the value of the “step offset” for the “GroundCheck” code to function.
2. There was an issue with the code not working the first time I completed the script, the problem was I hadn’t put a semicolon in one of the lines, because I had typed a bunch it wasn’t easy to locate it because it was the only error in my code.
3. The PlayerMovement component was completed at 4:00pm on the 24th of April 2020

Entry 3 – Constructing a FPS Crouch Component

1. Construction of the component began at 2:30pm on the 31st March 2020
2. I created a new script named “Crouch”
3. The following lines of code was constructed:

public class Crouch : MonoBehaviour

{

CharacterController characterCollider;

void Start()

{

characterCollider = gameObject.GetComponent<CharacterController>();

}

void Update()

{

“Input.GetKey(KeyCode.C” sets to crouch button to C on the keyboard.

if (Input.GetKey(KeyCode.C))

{

characterCollider.height = 1.8f;

}

else

{

characterCollider.height = 3.8f;

1. By pressing and holding the C key the code simply reduces the FPS player’s height to the value “1.8f” from “3.8f”.
2. This component was completed at 2:45pm on the 13th of April 2020

Entry 3 – Terrain Tools

1. I included the “Terrain Tools” pack into my project to demonstrate how the “PlayerMovement” script allows the FPS Player to traverse along slopes, hills etc.
2. I began working on this precisely at 4:00pm on the 20th of March 2020 and completed it at 7:05pm on the 15th of April 2020
3. I encountered multiple interruptions when I worked on this, this was due to the fact me being new to working on terrain in Unity3D.