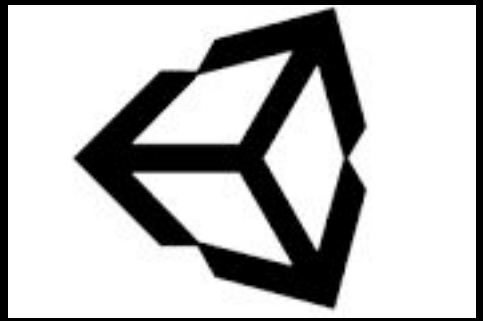
Video Game Development

Nicholas Farkash under the mentorship of Dr. Edward Currie

Key Phrases

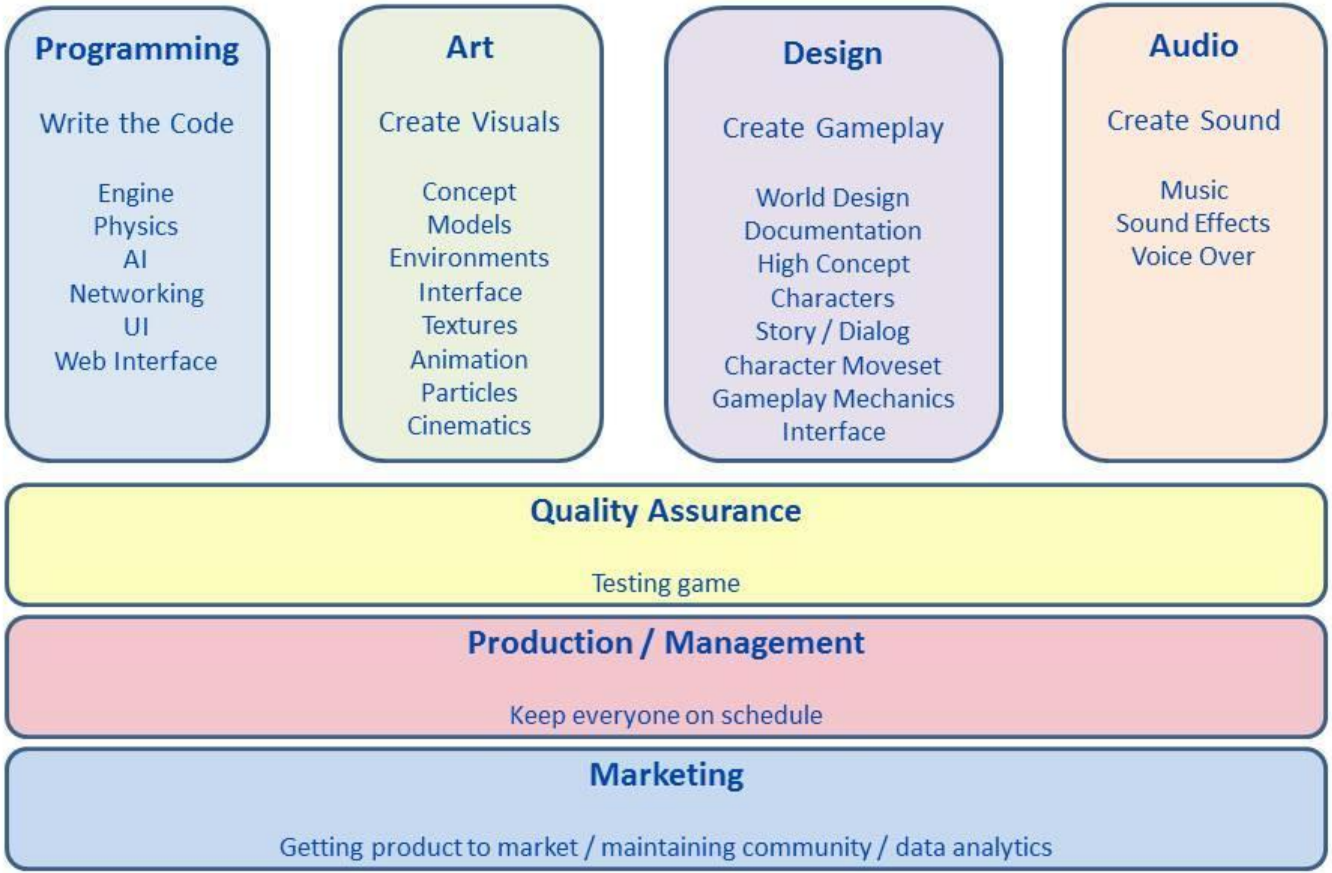
- Code/Script
- C#
- Game Engine (Unity)



Video Game Development Team

- Programmers
- Graphic Designers
- Sound Engineers
- Level Designers
- Testers

What Goes Into Making a Game?



Process

- Establishing Controls
- Writing the Code
- Animating
- Creating Graphics
- Creating Sound
- Level Construction

Controls

- Access to Controls

- Changing Controls

Code

- Scripts
- Character Controller
- Player Movement
- Miscellaneous Scripts

CharacterController2D.cs - Microsoft Visual Studio

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Attach...

CharacterController2D.cs

Miscellaneous Files | CharacterController2D | OnCrouchEvent

```
using UnityEngine;
using UnityEngine.Events;

public class CharacterController2D : MonoBehaviour
{
    [SerializeField] private float m_JumpForce = 400f;                          // Amount of force added when the player jumps.
    [Range(0, 1)] [SerializeField] private float m_CrouchSpeed = .36f;          // Amount of maxSpeed applied to crouching movement. 1 = 100%
    [Range(0, .3f)] [SerializeField] private float m_MovementSmoothing = .05f;  // How much to smooth out the movement
    [SerializeField] private bool m_AirControl = false;                         // Whether or not a player can steer while jumping;
    [SerializeField] private LayerMask m_WhatIsGround;                          // A mask determining what is ground to the character
    [SerializeField] private Transform m_GroundCheck;                           // A position marking where to check if the player is grounded.
    [SerializeField] private Transform m_CeilingCheck;                          // A position marking where to check for ceilings
    [SerializeField] private Collider2D m_CrouchDisableCollider;                // A collider that will be disabled when crouching

    const float k_GroundedRadius = .2f; // Radius of the overlap circle to determine if grounded
    private bool m_Grounded;            // Whether or not the player is grounded.
    const float k_CeilingRadius = .2f; // Radius of the overlap circle to determine if the player can stand up
    private Rigidbody2D m_Rigidbody2D;
    private bool m_FacingRight = true;  // For determining which way the player is currently facing.
    private Vector3 m_Velocity = Vector3.zero;

    [Header("Events")]
    [Space]

    public UnityEvent OnLandEvent;

    [System.Serializable]
    public class BoolEvent : UnityEvent<bool> { }

    public BoolEvent OnCrouchEvent;
    private bool m_wasCrouching = false;

    private void Awake()
    {
        m_Rigidbody2D = GetComponent<Rigidbody2D>();
```

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Ready Ln 26 Col 5 Ch 5 OVR Add to Source Control

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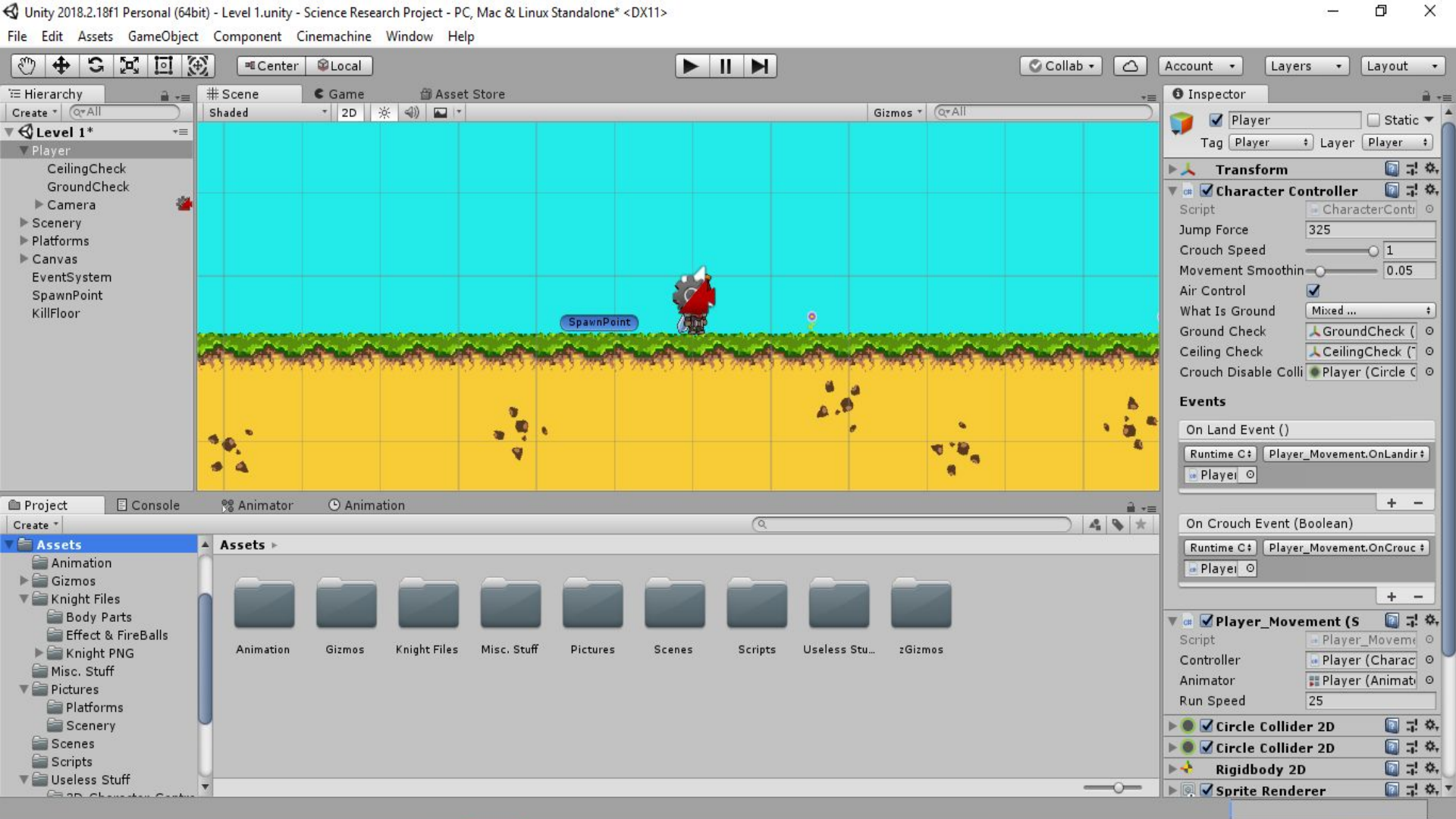
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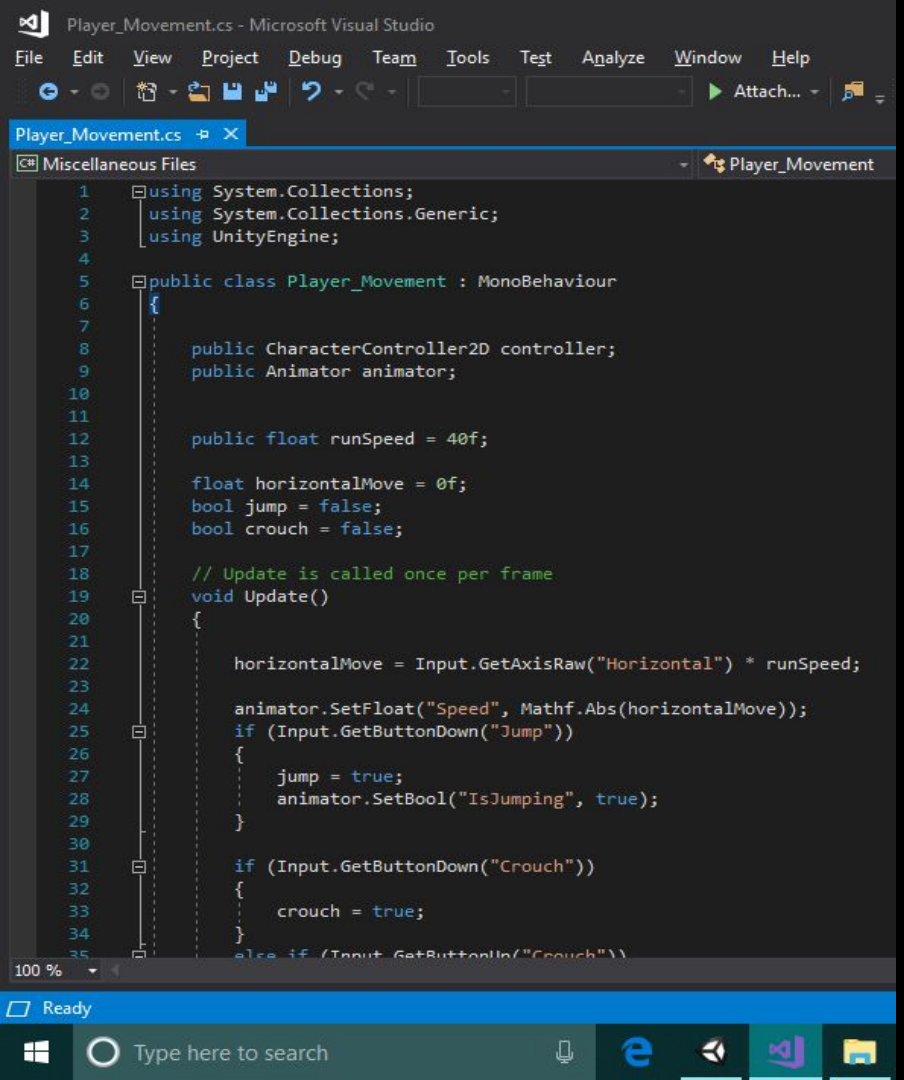

Player_Movement.cs - Microsoft Visual Studio

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Player_Movement.cs

Miscellaneous Files

Player_Movement

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;

public class Player_Movement : MonoBehaviour
{

    public CharacterController2D controller;
    public Animator animator;


    public float runSpeed = 40f;

    float horizontalMove = 0f;
    bool jump = false;
    bool crouch = false;

    // Update is called once per frame
    void Update()
    {

        horizontalMove = Input.GetAxisRaw("Horizontal") * runSpeed;

        animator.SetFloat("Speed", Mathf.Abs(horizontalMove));
        if (Input.GetButtonDown("Jump"))
        {
            jump = true;
            animator.SetBool("IsJumping", true);
        }

        if (Input.GetButtonDown("Crouch"))
        {
            crouch = true;
        }
        else if (Input.GetButtonUp("Crouch"))
```

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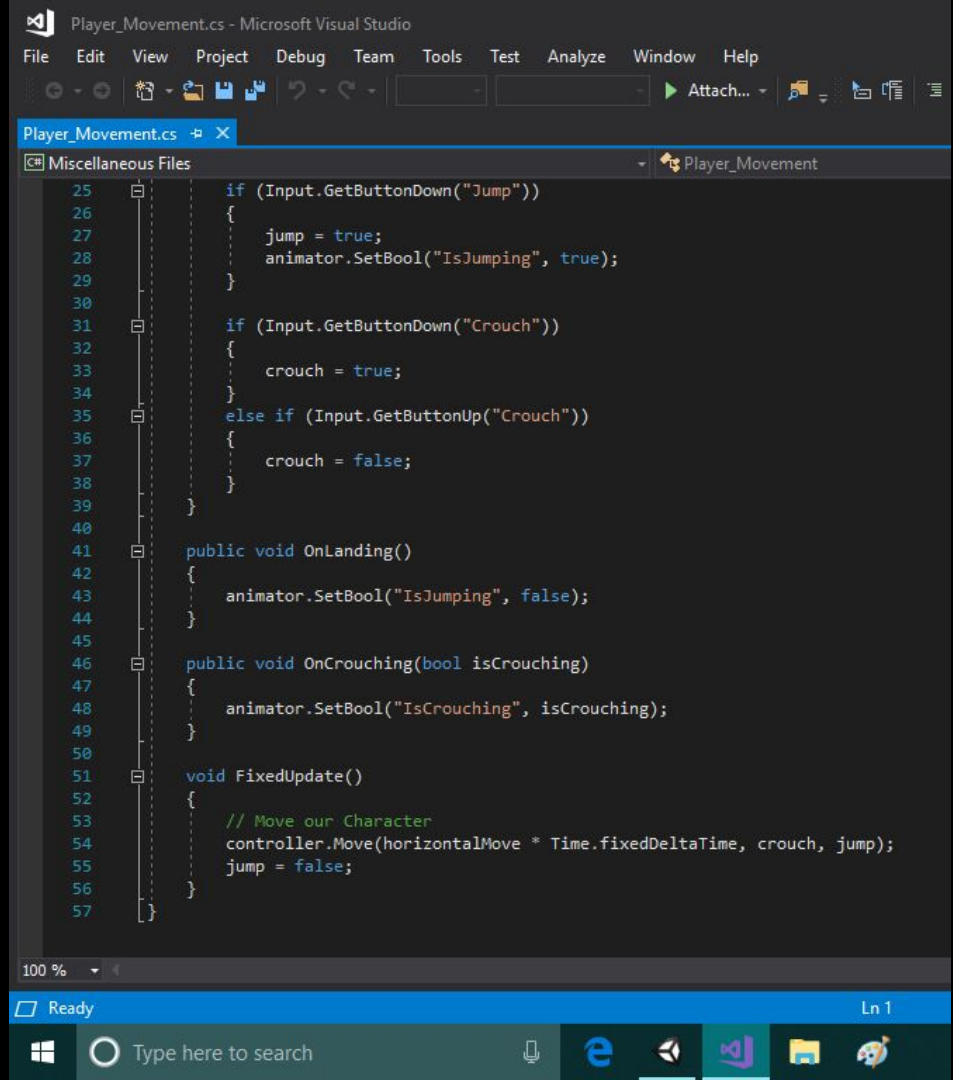

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Player_Movement

```
        if (Input.GetButtonDown("Jump"))
        {
            jump = true;
            animator.SetBool("IsJumping", true);
        }

        if (Input.GetButtonDown("Crouch"))
        {
            crouch = true;
        }
        else if (Input.GetButtonUp("Crouch"))
        {
            crouch = false;
        }
    }

    public void OnLanding()
    {
        animator.SetBool("IsJumping", false);
    }

    public void OnCrouching(bool isCrouching)
    {
        animator.SetBool("IsCrouching", isCrouching);
    }

    void FixedUpdate()
    {
        // Move our Character
        controller.Move(horizontalMove * Time.fixedDeltaTime, crouch, jump);
        jump = false;
    }
}
```

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Ready

Ln 1

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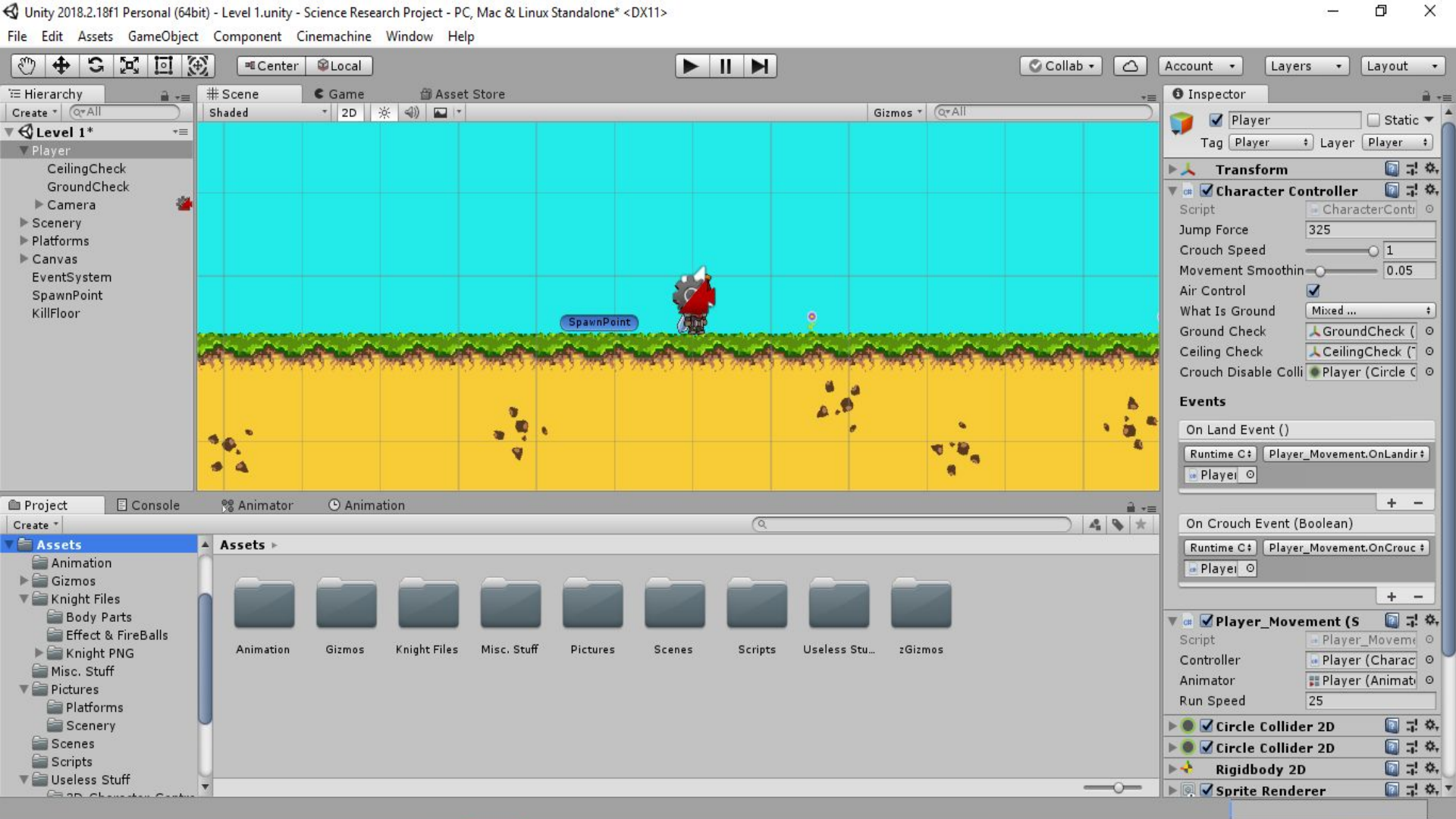
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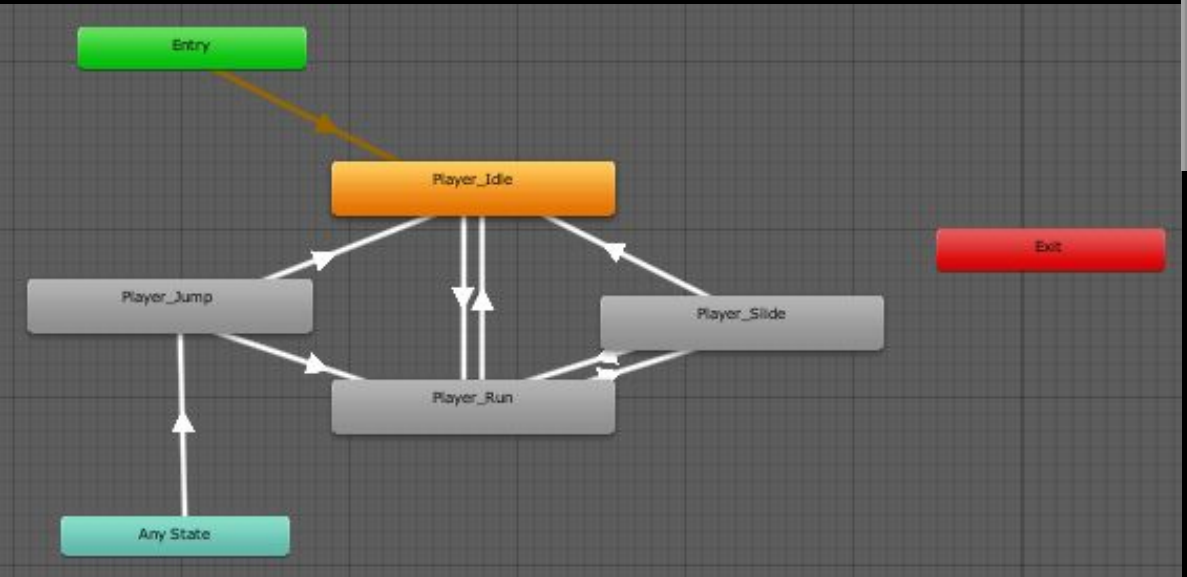
Animation

- What are Animations?
- Creating an Animation
- Using the Animator

Animator



Transition

Sound and Graphics

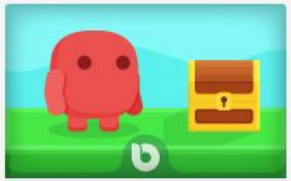
- Bosca Ceoil
- WavePad Audio Editor
- Microsoft Paint
- Unity Asset Store

Asset Store

2D | Type here to search assets | Plus/Pro | Impressive New Assets | Bundles: Save 33% | Shop On Old Store

Showing 6408 Results | Price | Rating | Released | Plus/Pro | Sort By | Relevance

- Characters
- Environments
- Fonts
- GUI
- Textures & Materials



2D > Environments

BAYAT GAMES
Free Platform Game Assets
★★★★★ (126)
FREE

2D > Characters

ANSIMUZ
Sunny Land
★★★★★ (57)
FREE

2D > Textures & Materials > Sky

RPGWHITELOCK
AllSky
★★★★★ (772)
~~$10~~ $8 Plus/Pro

2D > GUI > Icons

SHEFFEY
SCI-FI UI pack+psd
(not enough ratings)
$12.90

2D > GUI

LAYER LAB
GUI Kit The Stone
★★★★☆ (3)
~~$15~~ $12 Plus/Pro

2D > Textures & Materials > Roads

ANDASOFT
EasyRoads3D Pro Add On -..
★★★★☆ (29)
~~$15~~ $12 Plus/Pro

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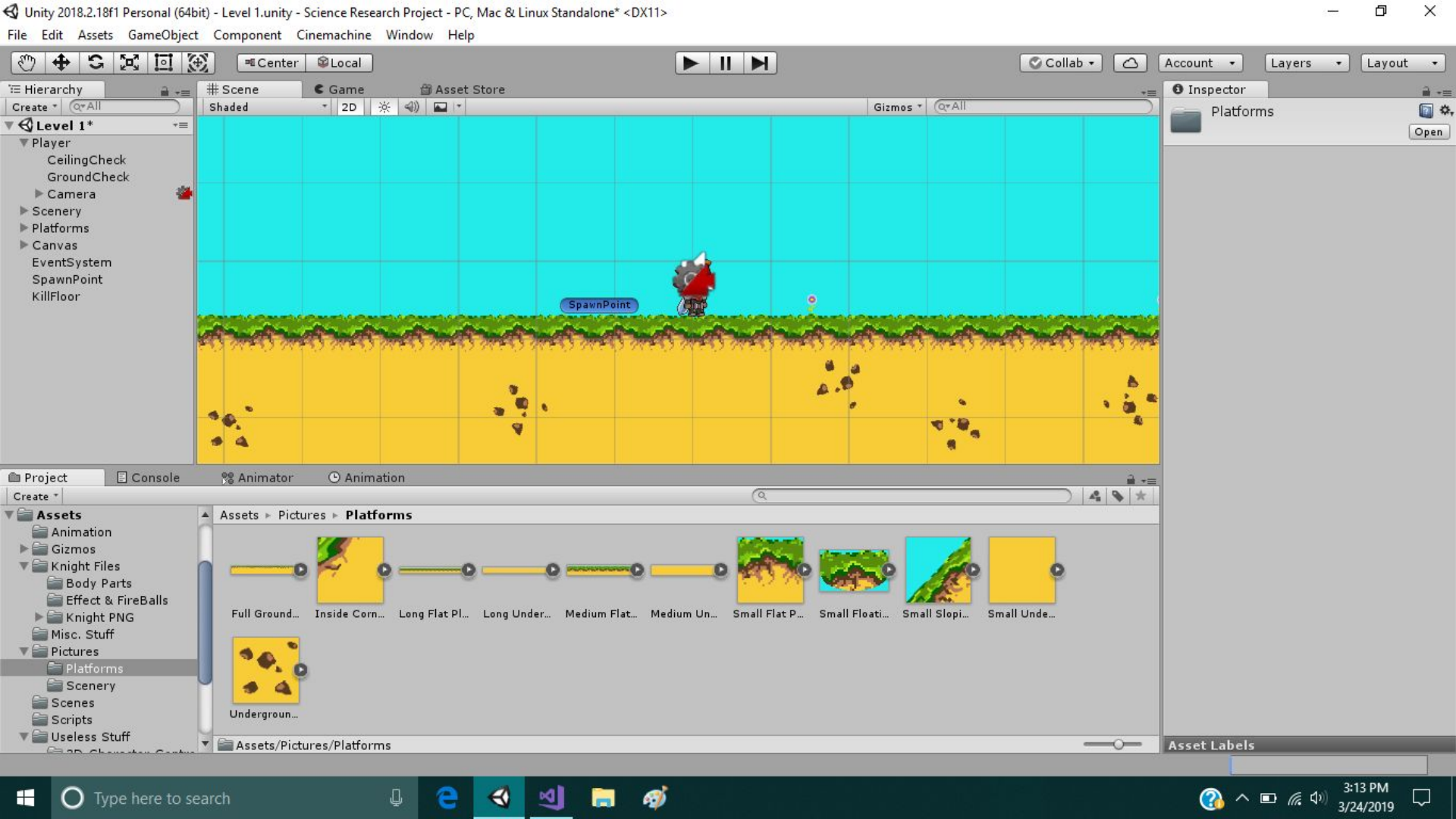
Level Construction

- Importing and Placing Assets
- Adding Components
- Testing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Full Ground...
Inside Corn...
Long Flat Pl...
Long Under...
Medium Flat...
Medium Un...
Small Flat P...
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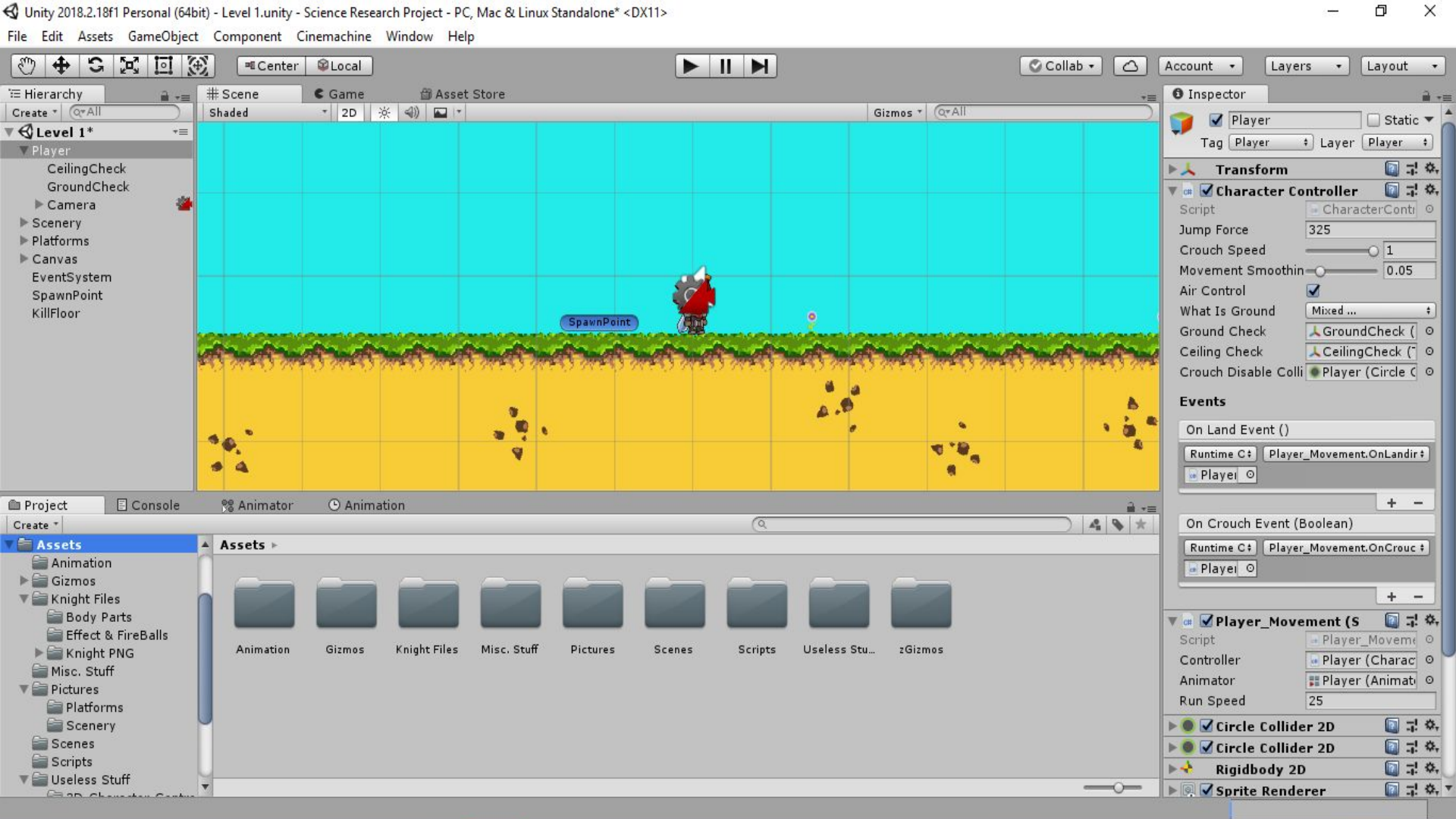
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Future

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