



3. Game Development

3.1 Unity 3D

Prerequisites:

1. C/C++/JavaScript
2. OOPs Concept
3. Basic Understanding of Graphics
4. Basic Understanding of 3D space

Duration: 60 Lectures

Course Content:

1. Introduction

- 1.1. What Unity3D is.
- 1.2. Supported platforms.
- 1.3. How it works.
- 1.4. Platform Dependencies.
- 1.5. Basics of Objects in Unity3D.
- 1.6. Assets

2. Unity3D Editor

- 2.1. Game
- 2.2. Hierarchy
- 2.3. Scene
- 2.4. Project
- 2.5. Inspector
- 2.6. Scene World Space
- 2.7. Modifying properties
- 2.8. Toolbar
- 2.9. Searching
- 2.10. Customizing Workspace



3. Basic Concepts

- 3.1. Understanding Game Objects
- 3.2. Understanding Components
- 3.3. Position
- 3.4. Rotation
- 3.5. Scale
- 3.6. Scene Environment
- 3.7. Lights
- 3.8. Camera
- 3.9. Prefabs
- 3.10. Preferences
- 3.11. Build Settings
- 3.12. Global and Local Spaces
- 3.13. Mesh
- 3.14. Renderers

4. Graphics

- 4.1. What are Textures
- 4.2. What are UVs
- 4.3. Co-reaction Textures and Vertices
- 4.4. Materials
- 4.5. Shaders
- 4.6. Lights
- 4.7. Skybox

5. Physics

- 5.1. Colliders
- 5.2. Rigidbody
- 5.3. Forces
- 5.4. Joints
- 5.5. Ragdoll



6. Animation

- 6.1. Animation Clips
- 6.2. Animator Controller
- 6.3. States
- 6.4. Transitions

7. Unity UI

- 7.1. Concepts
- 7.2. Canvas
- 7.3. RectTransform
- 7.4. Canvas Component
- 7.5. Components
- 7.6. Buttons
- 7.7. Scrollbars
- 7.8. Input Field
- 7.9. Slider
- 7.10. Layout Helpers

8. Audio

- 8.1. Overview
- 8.2. Files
- 8.3. Mixer

9. Scripting

- 9.1. Basics
- 9.2. C# fundamentals
- 9.3. OOPs
- 9.4. Extension Methods
- 9.5. Interactions
- 9.6. Lifecycle of Game Object
- 9.7. Code composition
- 9.8. Platform dependent compilation



- 9.9. Components
- 9.10. Namespaces
- 9.11. Co routines
- 9.12. Events
- 9.13. Ray casting
- 9.14. Collisions Handlers
- 9.15. Touch
- 9.16. Screen Viewport Position
- 9.17. World Position
- 9.18. Look At
- 9.19. Delegates
- 9.20. References
- 9.21. Tweening
- 9.22. Tags
- 9.23. Layers
- 9.24. Quaternion
- 9.25. Serialize Fields
- 9.26. Debugging

10. Best Practices

- 10.1. Physics
- 10.2. Graphics

11. Rendering Paths

- 11.1. Forward
- 11.2. Deferred
- 11.3. Legacy differed
- 11.4. Legacy Vertex lit

12. First Person Controller

13. Third Person Controller