**Unity Certification Preparation:**

**C# Programming**

**Orlando Unity3d Development Meetup**

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# **Introduction**

Hello, and WELCOME! My name is XXX. I am going to be your instructor for the next hour or so. I appreciate you all taking time out from your busy schedules to be here today.

***WHETHER you are 1) New to C#*** *- at the start of your game development journey* ***or 2)"Stuck-in-a-rut****" and want to get over that "coding" hump* ***…. or 3)"Struggling"*** *to apply the knowledge you learned from a previous course…then this* ***Unity Certification Programmer’s Course*** *is for you?*

You will be programming using C# “inside” of the unity game engine editor on your own laptop or pc either via visual studio 2015/2017 for Windows. Or xcode for the Mac. In this course I will teach you everything I know about C# programming in Unity (to date). It is split into three parts Basic, Intermediate and Advanced.

Before we begin. I do expect you to have downloaded & installed (on your laptops or PCs) **1) visual studio 2015 or 2017 or XCODE…, and 2) Unity version 5 or higher.**

We will be doing full code walkthroughs. In other words, ... “As-I-type-You-Type” …So you can follow in the exact same steps & processes as me. Feel free to interrupt, if you have any questions. Also, If I am going to fast let me know. And I will sloooowwww down! ….*Let's #DoDahUnityTing!*

# **WHAT is the Unity Programmer Certification?**

The Unity Programmer Certification is valid for two years. When you successfully take the exam and get certified, you will receive an **authorized digital badge** that you can use on your resume/cv, website, blog, email footer, and social networks etc.

# **Course FORMAT**

Each category covers the topic areas relevant for the exam certification requirements. The order is based on the best logical sequence to learn.

# **WHO is it for?**

This course is for **entry to mid-level programmers** across all industries to validate their abilities and demonstrate their commitment to professional standards.

# **WHAT does it cover?**

The Unity Programmer certification covers the core skills needed to contribute to the technical execution of a project from concept to launch. The reality is getting certified will show employers that you are proficient at coding solutions to tricky problems. It demonstrates that you can operate at a professional level to create the ***UI, script user-interactions, integrate visual and audio assets, implement application state logic, simulate physics, debug code, and optimize performance.***

# **Certification Topics**

|  |
| --- |
| The core competencies include: |
| **Programming core interactions :** |
| * Implement and configure game object behaviour and physics |
| * Implement and configure inputs and controls |
| * Implement and configure camera views and movement |
|  |
| **Working in the art pipeline :** |
| * Understand materials, textures, and shaders, and write scripts that interact 'with Unity’s rendering API |
| * Understand lighting, and write scripts that interact with Unity’s lighting API |
| * Understand 2D and 3D animation, and write scripts that interact with Unity’s 'animation API |
| * Understand particle systems and effects, and write scripts that interact 'with Unity’s particle system API |
|  |
| **Developing application systems :** |
| * Interpret scripts for application interface flow such as menu systems, UI 'navigation, and application settings |
| * Interpret scripts for user-controlled customization such as character-creators, 'inventories, storefronts, and in-app purchases |
| * Analyze scripts for user progression features such as scoring, leveling, and in-game economies utilizing technologies such as Unity Analytics and PlayerPrefs |
| * Analyze scripts for 2D overlays such as heads-up displays (HUDs), minimaps, and advertisements |
| * Identify scripts for saving and retrieving application and user data |
| * Recognize and evaluate the impact of networking and multiplayer functionality |
|  |
| **Programming for Scene and Environment Design :** |
| * Determine scripts for implementing audio assets |
| * Identify methods for implementing GameObject instantiation, destruction, and management |
| * Determine scripts for pathfinding with the Unity navigation system |
|  |
| **Optimizing for Performance and Platforms :** |
| * Evaluate errors and performance issues using tools such as the Unity 'Profiler |
| * Identify optimizations to address requirements for specific build platforms 'and/or hardware configurations |
| * Determine common UI affordances and optimizations for XR platforms |
|  |
| **Working in Professional Software Development teams :** |
| * Recognize concepts associated with the uses & impacts of version control with technologies such as Unity Collaborate |
| * Demonstrate knowledge of developer testing and its impact on the software development process, including Unity Profiler and traditional debugging and testing techniques |
| * Recognize techniques for structuring scripts for modularity, readability, and reusability |

# 

# **WHY UNITY?**

So, why use UNITY? Here are several reasons:

* **ITS FREE!!!**
* There is a lot of backwards compatibility and documentation support,
* The unity graphical features require very low-end hardware,
* Unity provides better integrated services for: Game Analytics, Source Control & Advertising,
* Reduced Platform Risk > Supports Android & iOS > W.O.R.A. (**W**rite **O**nce **R**un **A**nytime)

# **WHAT is Unity?**

Right, so what is unity exactly? Unity is a game development engine. A “glorified” code editor to build small & medium sized video games for **pcs/Laptops, mobile phones, tablets & Consoles (XBOX, PSP etc.)**

* **A game in unity is basically a collection of different C# files.**
* **Unity was created on 8 June 2005 by Unity Technologies Inc in Seattle. The Current CEO is John Riccitiello,**
* **Unity has on average 600,000 active developers per day. 34% of top 1,000 free mobile games are made with Unity.**
* **Unity is a CROSS PLATFORM game engine. Meaning that any files or assets created in unity on a windows machine. will work when imported into the unity platform on a MAC OS machine, and vice-versa.**