UNITY Vs MONOGAME

Introduction

In today's rapidly growing world with loads of expeditiously progressing technologies; one prominent side includes gamers and game developments. This field involves numerous developmental tools and engines that could be used to develop games at full tilt. Here our concern is regarding programming language-based tools used in game development. To narrow it down; Unity and MonoGame are two different platforms that are being used extensively for game development purposes. The main distinguishing factor between these two is basically that Unity is a game engine and MonoGame is a framework to develop games in C# programming language. Apart from developmental conventions, the MonoGame framework enables its users to write contemporary, reliable, and quick code; while on the contrary, the Unity engine provides API Object-oriented scripting in C# programming language in the form of plugins for its users to create games in a better and user-friendly environment.

Game development

Have you ever thought of codeless programming being used to create a whole game?

Unity engine is providing that ease among game developers who are not very fond of programming, it has features that enable text-based programming and user-friendly UI to provide not only support but also an effective developmental environment that is necessary for smooth flawless work with remarkably great speed. The most exceptional feature that makes it stand out is a drag-and-drop function that comes from API scripting, and via using it you can easily develop a game without actually worrying about the code writing mechanisms. It is the easiest gaming engine through which a developer can learn as well as develop a game of their choice.

Unity is also known for its advanced visual effects and high-quality features which permit its users to use customizable drag and drop tools to develop their games in the way they want them to be.

What do you think if creating our very own engine is possible with just a few codes?

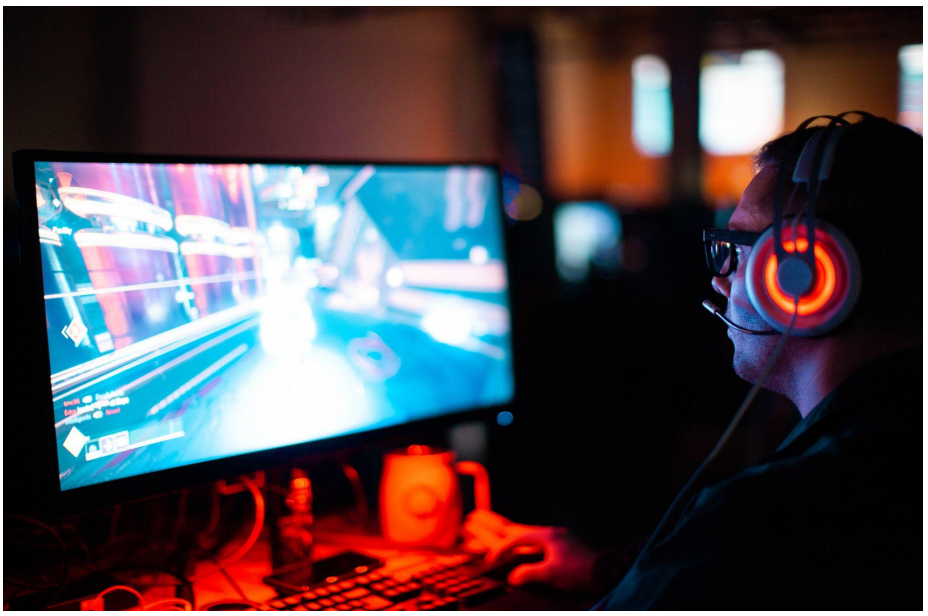
It is more than possible; MonoGame has been introduced with flexibility that is primarily intended to allow its developers to create their own game developing engines by using such libraries and tools, flexibility in terms of development and its aspects is complementary to providing C# and .NET programmers with a cross-platform gaming framework based on Microsoft's XNA framework that's easy to learn and practice on. Not only an engine, it is allowing us to explore and create our own libraries and tools as well.

MonoGame is simply a framework of .NET and creates games in C# programming language with content optimization and other input control supports, some of the most famous examples of its games are Streets of Rage 4 and Stardew valley.

Differentiating factors between Unity and MonoGame

Unity	MonoGame
Approach	
It is a real-time game developing engine platform	It is an open-source C# programming framework for game development.
Methods of development	
It has been built using object-oriented scripting language in game development to automate and enhance the features via its own variables, functions and classes.	It is a library which contains all necessary methods and features to develop games as well as to build our very own gaming engine.
Platforms based Processing	
Firstly, it was designed to process on OS X (Apple's worldwide developer's conference) but now it has been extended to serve and operate on 27 more platforms	This framework is serving game developers with multiple platform choices for development which supports windows, IOS, android, linux, playstation vita and many more.
Functionality	
It is a platform to design 2D and 3D games and apps	It is not an editor, it provides programming-based learning for development with flexibility
It is a text-based programming	It is a real programming based framework
It is also being used to develop simulations originally for computers, mobiles and consoles.	It provides features, custom-built tools and methods for designing games and engines.
Unity is lot more easier to use as it provides drag and drop functionalities as well which is	It requires sound programming and work in order to build 3D games apart from 2D games which are

great for 3D games development	comparatively quite easy to develop here.
NonFunctional requirements	
It provides ease of use as it is a user-friendly platform.	It provides flexibility and availability in game development.
Documentation and Support	
Unity provides efficient documentations and support to its users for ease.	MonoGame is support deficient and it does not provide documentation which can be an issue.
Developmental usage	
It is mainly being used to develop 2D and 3D games	While MonoGame is preferably used to develop 2D games but it is rapidly being used to create personal engines as well
Quality Aspects	
Unity engine is easy to use and is highly available which is a choice if you are interested in instant development with less programming involved.	MonoGame is highly customizable that's why it is expandable and portable if you are concerned about the look and feel of your game



Gaming Engine and programming

10 interesting facts to consider while choosing between Unity and MonoGame for development

If you are facing any uncertainty and ambiguity in choosing between these two platforms as a game developer then the following are the summarized pinpoints to consider in order to design efficient and reliable games with the best user-friendly approach.

- Precisely, if you are a developer with core programming interests and want to learn the mechanism to design your own engine along with developing a game with flexibility simultaneously then MonoGame is the best choice.
- Comparably, if you are not a programming person and just want to develop a 2D or 3D game instantly with an easy multi-platform tools usage along with a text-based easy programming strategy then the Unity engine is one of the best platforms that can ever be designed for millions of game developers.
- One important point to bring to the notice is that MonoGame is a free framework powered by C# programming language.
- Similarly, the Unity engine is also free but if you are interested in exploring more of its tools and services that it has to offer then it has some affordable packages as well.

- As far as the user interface is concerned the Unity engine provides user-friendly interfaces which are often quite helpful for beginners especially; in terms of availability and flawless developmental mechanisms on an interface.
- While on the other hand, Monogame itself comes up with some libraries to provide effective interfaces.
- The similar factor between these two is that they both are cross-platform approaches.
- The only drawback of Monogame that limits us from using it is that it does not have its own graphical user interface, it has to be imported from libraries further, and it does not support Mac 2019 as well. It is difficult to use in terms of programming for example if you are a beginner and wants to develop your first game project then it is often recommended to avoid using MonoGame as it requires C# programming construct's sound knowledge.
- The main pitfall of the Unity engine is that it is not an open source platform plus the necessary updates regarding tools and services are not consistent with the system.
- Customizable methods and flexibility with the libraries are the factors that make MonoGame highly versatile and stand out while deployment ease on cross platforms along with great documentation and user-friendly UI is the leading pinpoints for the Unity engine.

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Conclusion

- To sum it up, our evaluations lead us to the mindset that both have their own benefits and limitations and can be used according to the requirements.
- The gist of our research and above mentioned distinguishing factors indicate that although both are developed using C# programming language but they both have their own behaviors and independent functionalities that make them stand out.
- Overall, Unity is the second game engine in the world and possesses a large showcase with vast choices of methods and possible functionalities while monogamy offers the flexibility to create your own engine.
- For faster iteration procedure and if you want to get the developed game in execution at full tilt without any delay then MonoGame is a go-to choice.
- After having certain enlightening facts about both actively being used game developing platforms and their drastic impact on the gaming industry it can be concluded that every programming language, tool, platform, engine, or framework has its own pros and cons on which they can be distinguishable; whereas, in programming world there can never be a single approach, it always depends on the nature of the solution that developer is looking for.
- Therefore, the Unity engine is best for its pinpoints (user-friendly, updated documentation, and 3D game developments) while MonoGame is useful for its (flexibility and open source) benefits, and they both are the best choices as of now according to the functional and non-functional requirements.