

FOSS PROJECT DEMO TEMPLATE UNREAL ENGINE

INTRODUCTION OF TOOL

- Unreal Engine is a powerful and widely used game engine developed by Epic Games. It's renowned for its high-quality graphics, realistic physics, and robust tools for creating interactive 2D and 3D experiences. Unreal Engine is not only favored by game developers but also finds applications in fields like virtual reality, architectural visualization, and film production due to its versatility and impressive rendering capabilities.

LICENSES OF THE TOOL

- Unreal Engine EULA (End User License Agreement): Under this free license, you can use Unreal Engine for personal, educational, or non-commercial purposes. However, you must pay royalties on gross revenue for any commercial product or game you release, typically after exceeding a certain revenue threshold.
- Custom Licensing: Epic Games also offers custom licensing options for large-scale projects or companies that require specific terms and conditions. These arrangements are negotiated directly with Epic Games.
- Unreal Studio: Unreal Studio, which focused on architectural visualization and design, used to have its licensing terms. However, as of my last knowledge update in September 2021, Unreal Studio was being rolled into Unreal Engine with more accessible licensing options.

ALTERNATIVES FOR THE TOOL

- Godot Engine: A popular and user-friendly 2D and 3D game engine with a visual scripting system.
- Armory3D: An open-source 3D game engine that integrates with Blender for content creation and uses the Haxe programming language.
- OpenRA: An open-source project that recreates classic real-time strategy games like Command & Conquer.
- Panda3D: An open-source 3D engine and framework for Python and C++ developers.
- Flax Engine: Offers a Community Edition with access to the source code, designed for 3D game development with C#

ADVANTAGES OF USING THE TOOL

- **High-Quality Graphics:** Unreal Engine is renowned for its stunning visuals, advanced rendering capabilities, and support for high-fidelity 3D graphics.
- **Realistic Physics and Simulation:** It includes robust physics and simulation systems, allowing for realistic interactions, dynamic environments, and lifelike animations.
- **Blueprint Visual Scripting:** Unreal Engine's visual scripting system, called Blueprint, empowers designers and artists to create gameplay and logic without extensive programming knowledge.
- **Cross-Platform Development:** You can develop games for various platforms, including PC, consoles, mobile devices, and VR/AR headsets, using a single codebase.

- **Asset Management:** Unreal Engine's Asset Management system simplifies the organization, import, and use of 3D assets, textures, animations, and materials.
- **Marketplace:** The Unreal Marketplace offers a wide range of pre-made assets, tools, and plugins, saving developers time and effort.
- **Active Community:** Unreal Engine boasts a large and active community of developers and a wealth of tutorials, documentation, and forums for support.
- **Continuous Updates:** Epic Games regularly updates Unreal Engine with new features, enhancements, and optimizations, ensuring it stays cutting-edge.
- **Blueprint to C++ Transition:** Developers can seamlessly transition from Blueprint visual scripting to C++ for more control and performance when needed.

- Virtual Production: Unreal Engine's real-time rendering capabilities are used in film and television production for virtual sets and previsualization.
- Industry Adoption: It's widely adopted in the gaming industry, but its applications also extend to fields like architecture, automotive design, and training simulations.
- Flexible Licensing: Unreal Engine offers flexible licensing options, including a royalty-based model for commercial projects and custom licensing arrangements for larger enterprises.

PROBLEM STATEMENT FOR PROJECT

- Creating an Car Racing Game with an time limit

SCREENSHOTS OF WORK

