Development Tools & Frameworks in Virtual Reality

Tools for VR:

- https://www.lullabot.com/articles/11-tools-for-vr-developers

1. Unity

It is famous for game development, however, it helps you to build VR solutions for many other sectors too. E.g., you can create VR solutions for automotive, transportation, manufacturing, media & entertainment, engineering, construction, etc. with Unity.

- A powerful editor to create Unity 3D VR assets;
- Artist and designer tools;
- CAD tools;
- Collaboration tools.

2. **Amazon Sumerian**

It is the VR engine from AWS, and you don't need 3D graphics or VR programming skills to use it. Sumerian works with all popular VR platforms like Oculus Go, Oculus Rift, HTC Vive, HTC Vive Pro, Google Daydream, and Lenovo Mirage, moreover, it works with Android and iOS mobile devices too.

Amazon Sumerian supports various VR use cases like employee education, training simulation, field services productivity, retail & sales, and virtual concierge.

It has powerful features, e.g.:

- Sumerian editor;
- Sumerian hosts;
- Asset management;
- An ability to script the logic in the scenes you create.

3. __Unreal Engine 4__ (UE4)

It offers a powerful set of VR development tools. With UE4, you can build VR apps that will work on a variety of VR platforms, e.g., Oculus, Sony, Samsung Gear VR, Android, iOS, Google VR, etc.

- The UE4 platform has many features, e.g.:

- It offers access to its C++ source code and Python scripts, therefore, any VR developer in your team can study the engine in detail and learn how to use it.

- UE4 has a multiplayer framework, real-time rendering of visuals, and a flexible editor.

- With the Blueprint visual scripting tool offered by UE4, you can create prototypes quickly.

- It's easy to add animation, sequence, audio, simulation, effects, etc.

4. CRYENGINE

CRYENGINE is a robust choice for a VR software development tool. You can build virtual reality apps with it that will work with popular VR platforms like Oculus Rift, PlayStation 4, Xbox One, etc.

- CRYENGINE offers various features, e.g.:

- You can incorporate excellent visuals in your app.

- Creating a VR app or VR game is easy with CRYENGINE since it offers sandbox and other relevant tools.

- You can easily create characters.

- There are built-in audio solutions.

- You can build real-time visualization and interaction with CRYENGINE, which provides an immersive experience to your stakeholders.

5. **Blender**

- <u>Blender</u> is an open-source 3D creation suite, and it's free.
- Blender offers the following features and capabilities:
- You can create your 3D pipeline with modeling, rigging, animation, simulation, rendering, composing, and motion tracking.
- Blender supports video editing and the creation of VR video games.
- If you have an experienced VR developer in your team, then he/she can use its API for Python scripting to customize the application. This allows you to create specialized tools.

6. 3ds Max

It is a popular 3D modeling and rendering software from Autodesk, and you can use it for design visualization, creation of video games, etc. This powerful software offers a wide range of features, for example:

- You can create professional-quality 3D animations with it.

- 3ds Max offers an efficient and flexible toolset to produce high-quality 3D models.

- There are various options to create textures and effectsYou get an impressive array of 3D rendering, UI, workflow, pipeline, 3D animation, and other capabilities with 3ds Max.

7. Maya

It is yet VR software development tool from Autodesk. With Maya, you can create 3D animations, motion graphics, and VFX software.

- Maya is a powerful software that offers tools for dynamics, effects, 3D animation, 3D rendering, 3D shading, 3D modeling, pipeline integration, motion graphics, etc.

8. Oculus Medium

- Oculus, the well-known provider of VR platforms like Oculus Rift S, Oculus Quest, and Oculus Go also offers powerful VR development software, named [Medium](). It's a comprehensive tool, which allows you to create 3D assets.

9. Google VR for everyone

- Google, the technology giant offers a wide range of VR development tools, and you can use them to create immersive VR experience for your stakeholders. You can access these tools on the [Google VR developer portal](#).

- You can use these tools to develop VR apps for multiple platforms, e.g., Unity, Unreal, Android, iOS, and web. To access the guides to develop VR apps for each of these platforms, first navigate to "[Choose your development environment](#)" on the Google VR developer portal.

- The Google VR developer platform has software development kits (SDKs) for all VR platforms it supports, e.g., Unity, Android, iOS, etc. You can navigate to the [download page on the Google VR developer portal](#) to access them. You can read "[Google VR API reference](#)" to understand the Google VR APIs and plugins that covers all SDKs that the Google VR development platform offers

Video

How to create architectural VR walkthroughs with online tools (Lumion)

https://www.youtube.com/watch?v=OkB-mtkVrHg

Unity basics

- https://www.youtube.com/watch?v=pwZpJzpE2lQ

- VR in unity

- https://www.youtube.com/watch?v=gGYtahQjmWQ

- C# Script

- https://docs.unity3d.com/ScriptReference/