

Developing an interactive 3D VR application in a nutshell

This is an extremely bare-bone and generalized overview of the underlying process when creating a VR application. The work required for each step depends on a number of factors, and can range from a trivial task to needing days or weeks of work (content creation and programming being the most time-consuming). All work needs to be done with VR in mind and requires knowledge about best practices and workflows regarding VR development.

1. Designing and planning

- What is the scope and goal?
- What platform and hardware is used for the application? Are motion controls used?
- What will the application look like? Does the scene need realistic materials and lighting?
- What are the required interactions?
- Who is the user?

2. Creating the 3D content

- Using pre-existing models (CAD files require extra work)
- Modeling from scratch with or without reference material
- Early optimization pass for models

3. Creating additional content:

- Textures, animations, UI graphics
- Sounds and video, if needed

4. Exporting the materials and bringing into the game engine

- Preparing models, collision and physics
- Creating surface materials and applying textures
- Applying materials
- Adding lighting and shadows
- Designing and creating the UI

5. Programming the interactions

- Essentials such as movement
- UI
- Other required interactions

6. Optimizing the performance

- Re-visit models and textures if needed
- In-engine optimization methods and tricks

7. Testing and debugging

- Testing needs to be done in VR
- Usability tests, especially for interactions and UI
- Fixing bugs

8. Feedback and comments from client / users

- Getting feedback early is crucial, screenshots or video are only good for early comments
- It is essential to have the client / end users to test the VR application itself
- Going back to previous steps as needed to make changes

9. Finishing touches and possible additional content

- Polishing the graphics
- Creating additional material if needed, such as promotional screenshots or videos, 360 videos etc.

10. Compiling the application and testing again

- Making sure that the compiled application works on client hardware