Finding game assets for free

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Introduction

Finding or creating assets for a XR experience can be as time consuming as developing the experience itself. Using temporary assets can allow other aspects of development to continue while the perfect asset is created or found. Assets can sometimes be acquired for free, often under a Creative Commons license. Or they can be created, time permitted.

Creative Commons licensing

Creative Commons is a copyright licensing system artists can apply to their works, whether its audio, images or 3D models. Creative Commons describes their licences as "*Creative Commons licenses give everyone from individual creators to large institutions a standardized way to grant the public permission to use their creative work under copyright law. From the reuser's perspective, the presence of a Creative Commons license on a copyrighted work answers the question, "What can I do with this work?"* "

This is digital rights management for free, open-source assets.

See this link to find out more about creative commons licenses, their application, and what the symbols mean: https://creativecommons.org/about/cclicenses/

Unity Asset Store & Unreal Engine MarketPlace

Unity has freely available assets in the Unity Asset Store. Unreal Engine's free assets are in their MarketPlace. Content available in these venues is often only free to use in projects being created on their respective platforms.

A thorough search through your game engine's free asset resources is a very worthwhile exercise as the assets are already converted and compatible with the game engine. Assets downloaded from the Internet may require cleanup and conversion before they can be utilized in your game/experience.

Listed later in this document are sites and resources that are usually Creative Commons licensed and free to use in your project but may require cleanup and conversion.

Audio - music and sound effects

File formats: .wav, .mp3. .aiff, .ogg ….
Conversion and editing tool:
Audacity; https://www.audacityteam.org/

Asset sources:

- https://freesound.org/
- http://soundbible.com/free-sound-effects-1.html
- https://www.zapsplat.com/
- https://itch.io/game-assets/free
- https://www.bensound.com/royalty-free-music/cinematic
- https://www.audioblocks.com/royalty-free-audio?srch-type=music&moods=1_5&genres=36&instruments=40&search-origin=browse%3Acarousel
- http://www.purple-planet.com/drama/4583971283
- https://www.hooksounds.com/royalty-free-music/category/cinematic

Pictures, textures, & HDRI

File formats: .jpg, .png, .tiff, .hdri
Conversion and editing tool:
GIMP; https://www.gimp.org/

Asset sources:

- https://unsplash.com
- https://opengameart.org/
- https://www.poliigon.com/
- https://www.clipsafari.com/
- https://pixabay.com/en/abstract-sea-beach-cyclists-blue-2845763/
- https://www.pexels.com/royalty-free-images/
- https://itch.io/game-assets/free

HDRI Images materials

- https://polyhaven.com/
- http://www.hdrlabs.com/news/index.php
- https://www.poliigon.com/

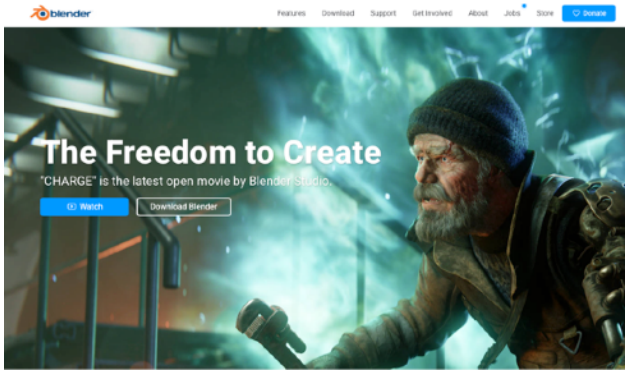
PBR materials

- https://cc0textures.com/
- https://freepbr.com

A list of other sites for royalty free images:
https://mashable.com/2017/05/23/where-to-find-royalty-free-images/#V_H52LBi_OqJ

3D models, objects in the game

File formats: .fbx, .obj, .dae, .gltf, .usdz
Conversion and editing tool:
Blender; https://www.blender.org/



Asset sources:

- https://free3d.com
- https://sketchfab.com
- https://archive3d.net
- http://cubebrush.co/
- https://kenney.nl/
- https://3dexport.com/
- https://itch.io/game-assets/free
- https://www.turbosquid.com/Search/3D-Models/free
- https://mars.nasa.gov/resources/25043/mars-ingenuity-helicopter-3d-model/
- https://www.steelcase.com/resources/3d-models-cad/

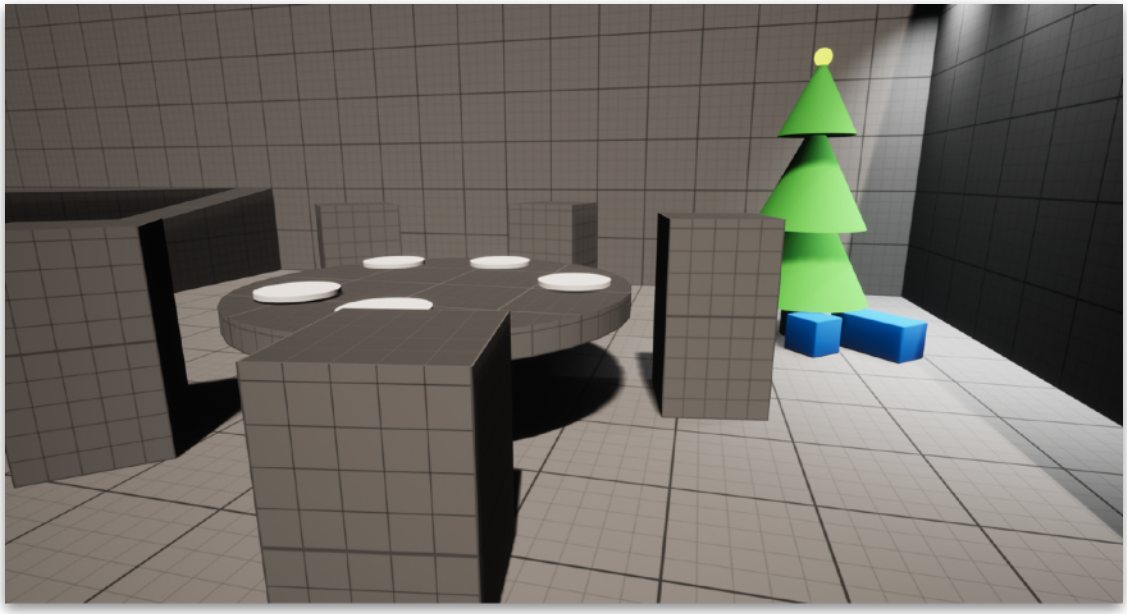
Example google search

Google searching with "free cc0 sports car model interior" returns many results, one of which is https://www.turbosquid.com/3d-models/dodge-challenger-srt-hellcat-3d-1807961

Block out: Custom asset alternative

Making your own custom assets; audio, image, or 3D model; is possible but can be time consuming in the context of a hackathon. A proxy or stand-in object is often a good design consideration when working within the time constraints of a hackathon. That is, find a similar, existing asset to use instead of the custom specific asset. This allows work on the rest of the game/experience to continue while the custom asset is developed.

This idea is often useful when considering the environment. World or environment assets can be represented with basic blocks such as cubes, spheres and cones.



Blocked out: a festive dining room created with simple block shapes.

Making a room: SweetHome3D

SweeHome3D is a tool to design rooms and houses for the real world, and can export these designs as 3D models in .OBJ format. Blender can convert these obj models to fbx if required.

https://www.sweethome3d.com/

Making a character: MakeHuman

MakeHuman is an open-source, cross platform program for creating custom human characters.

Physical attributes of a character can be adjusted, and many costume options are available for the characters.Characters can be exported in game ready 3d model formats.
http://www.makehumancommunity.org/

Making a character: ReadyPlayer.Me

ReadyPlayer.Me is a web service for creating avatars for immersive experiences. These avatars are in .glb format and can be manipulated with Blender for use in other VR experiences.

Website: https://readyplayer.me

Mixamo

Mixamo is a web service that can automatically rig and animate a biped mesh model. Upload a character in OBJ or FBX format and the site will attempt to automatically rig the model. Rigging refers to adding a skeleton to the model so that it can later be animated. Once rigged, Mixamo can provide animation clips of the uploaded model. A free Adobe account is required to use the service.

Photogrammetry

Photogrammetry is the creation of 3D models from a large series of pictures. This process can be useful when a 3D model of a specific item is required. The processing of the images can be time consuming in the reaction to a weekend hackathon.

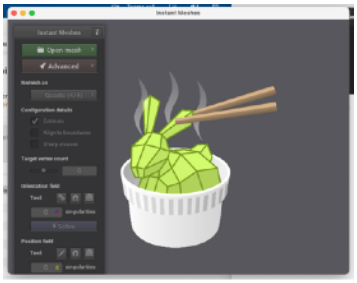
Assets in VR

3D models with a lower poly count and lower resolution textures are preferred in many virtual reality situations. Think of it as the smallest file size with good enough quality for the intended use.

Poly count refers to the number of faces or polygons in an object's wire mesh (the grey triangles in the image). The higher the count the finer the detail on the object's surface, and the larger the file. The higher poly count meshes take up more of the devices CPU/ GPU to render in game. This rendering load can slow down the device's display frame rate ruining the VR experience. It's a balance between visual quality and the performance of the VR experience.

Textures are the 2D images (the pink in the image) that are often applied to the meshes to provide the colour or outer layer. These images are often 2k, 4k or even 8k resolution. Again, the higher resolution images provide more details but present a larger load on the device's CPU/GPU.

Tools such as Blender, MeshMixer, GIMP, MeshLab, and InstantMeshes can be used to simplify 3D models.



MeshLab: http://www.meshlab.net
MeshMixer: https://meshmixer.com/
InstantMeshes: https://igl.ethz.ch/projects/instant-meshes/

Contact Info

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