



Full Stack JS Developer – Home Task

The rationale

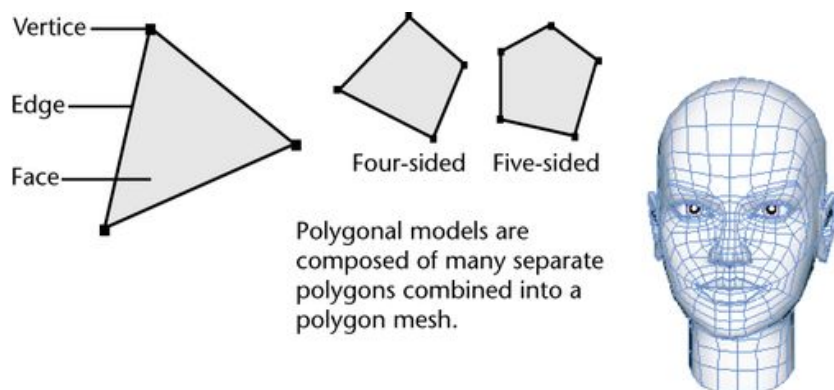
The core of what we do is the sophisticated manipulation of Maya native 3D objects within a JS framework. This is a non-trivial implementation, with many unknown unknowns. This task is set to examine resourcefulness, independent discovery and most importantly problem parsing and diagnostic skills. Pinpointing problems and suggesting courses of action might be more important than the actual realization of the solution.

The task

- **Time estimation:** the core task should take between 2-8 hours, depending on previous knowledge.
- **Expected outcome:**
 - A github repository with the solution and instructions on how to run it
- Set up an environment for the manipulation of 3d objects (you must use three.js framework)
- Using the two attached FBX files, achieve the composition shown in the results (images and video)
- Allow the manipulation of the arm in the scene with the gizmo, as shown in the example clip, read the glossary below for more information.
- Bonus objectives:
 - **Easy mode:** Apply colors as shown (do not finesse over the exact shade)
 - **Hard mode:** Improve performance

Glossary

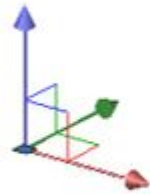
- **Polygon** – Polygons are straight-sided shapes (3 or more sides), defined by three-dimensional points (vertices) and the straight lines that connect them (edges). The interior region of the polygon is called the face.



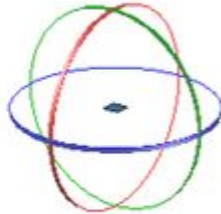
- **Mesh** – A 3D mesh is the structural build of a 3D model consisting of polygons. 3D meshes use reference points in X, Y and Z axes to define shapes with height,

width and depth.

- **Joint (bone)** – Joints are the building blocks of skeletons and their points of articulation. Each joint can have one or more bones attached to it. Bones do not have a physical or calculable presence in your scene, they are only visual cues that illustrate the relationships between joints
- **Skin** – Skinning is the process of binding a modeled surface to a skeleton. When a model is bound to a skeleton using skinning, it then follows or reacts to the transformations of the skeleton's joints and bones.
- **Gizmo** – The manipulator is tailored for the selected node or attribute.



3D Move gizmo



3D Rotate gizmo



3D Scale gizmo

