**Assignment 3: Steps to Create a Halo BR55 Battle Rifle Model in Blender.**
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**1. Reference Gathering**: I Collected multiple reference images and blueprints of the BR55 battle rifle from various angles (front, side, top, etc.). These will serve as my guide during modelling, finally I decided which is included in the assignment.

**2. Initial Modelling**: I started with a basic primitive shape (e.g., a cylinder for the rifle body) and adjusted its proportions based on the reference images. Also I used basic mesh modelling tools (such as extrusion, scaling, and loop cuts) to sculpt the primary structure of the rifle.

**3. Subdivision Surface:** I applied subdivision surface modifiers to the model to smooth and refine its surface also I used edge loops strategically to control the sharpness of edges while maintaining smoothness.

**4. Detailing and Refinement:** I added finer details such as grooves, indentations, screws, and other features according to the reference images. I utilised additional modifiers (like bevel or boolean) to create more complex shapes or cutouts.

**5. Finishing Touches:** Fine-tune the model by adjusting proportions, refining details, and checking for any imperfections.

**Challenges I Encounter:**

- **Complex Geometry:** Rifles, especially sci-fi ones, might have intricate shapes and details. Balancing the geometry complexity while maintaining a clean mesh structure can be challenging.

- **Edge Flow:** Ensuring proper edge flow for subdivision surfaces is crucial for maintaining smoothness without distortions or unwanted creases.

- **Detailing Accuracy:** Achieving accurate detailing according to the references while keeping the polygon count manageable can be tricky.

- **Optimization:** Subdivision surfaces can significantly increase polygon count. Optimising the model for efficiency without losing detail is a balancing act.