

Bridge Design

Date: 24 - 03 - 2025

Developed By : KABELAN G K - 212224110027

AIM

To create a 3D model of a bridge structure using Autodesk Fusion 360.

REQUIREMENTS

1. Autodesk Fusion 360
2. Windows 10
3. 16 GB of RAM (Integrated graphics recommend 1 GB or more)
4. 2.5 Mbps or faster download; 500 Kbps or faster upload

PROCEDURE

STEP-1: Start a New Design

1. Open Autodesk Fusion 360.
2. Create a New Design file.

STEP-2: Create the Base Sketch

1. Select **Sketch** > **Create Sketch**.
2. Choose the **Top Plane (XY Plane)**.

STEP-3: Draw the Base of the Bridge

1. Use the **Line** and **Rectangle** tools to draw the basic base frame for the bridge.
2. Create two **rectangular bases** to represent the bridge supports.

STEP-4: Extrude the Bases

1. Select **Create** > **Extrude**.
2. Extrude the rectangular bases upwards to give them thickness.

STEP-5: Create the Bridge Deck

1. Start a new **Sketch** on top of the supports.

2. Draw a **Rectangle** to represent the bridge deck between the supports.
3. Finish the sketch.
4. Use **Extrude** to give thickness to the deck.

STEP-6: Create Support Trusses

1. Start a new **Sketch** on the side faces of the deck.
2. Draw **triangular truss patterns** using the **Line** tool.
3. Finish the sketch.

STEP-7: Cut Out the Trusses

1. Select the truss sketch.
2. Use **Extrude** > **Cut** through the bridge side to create the truss holes.

STEP-8: Mirror the Trusses

1. Use **Create** > **Mirror** tool.
2. Mirror the truss pattern to the other side of the bridge for symmetry.

STEP-9: Add Final Details

1. Add additional beams, reinforcements, or rails if necessary using **Sketch** + **Extrude** combinations.

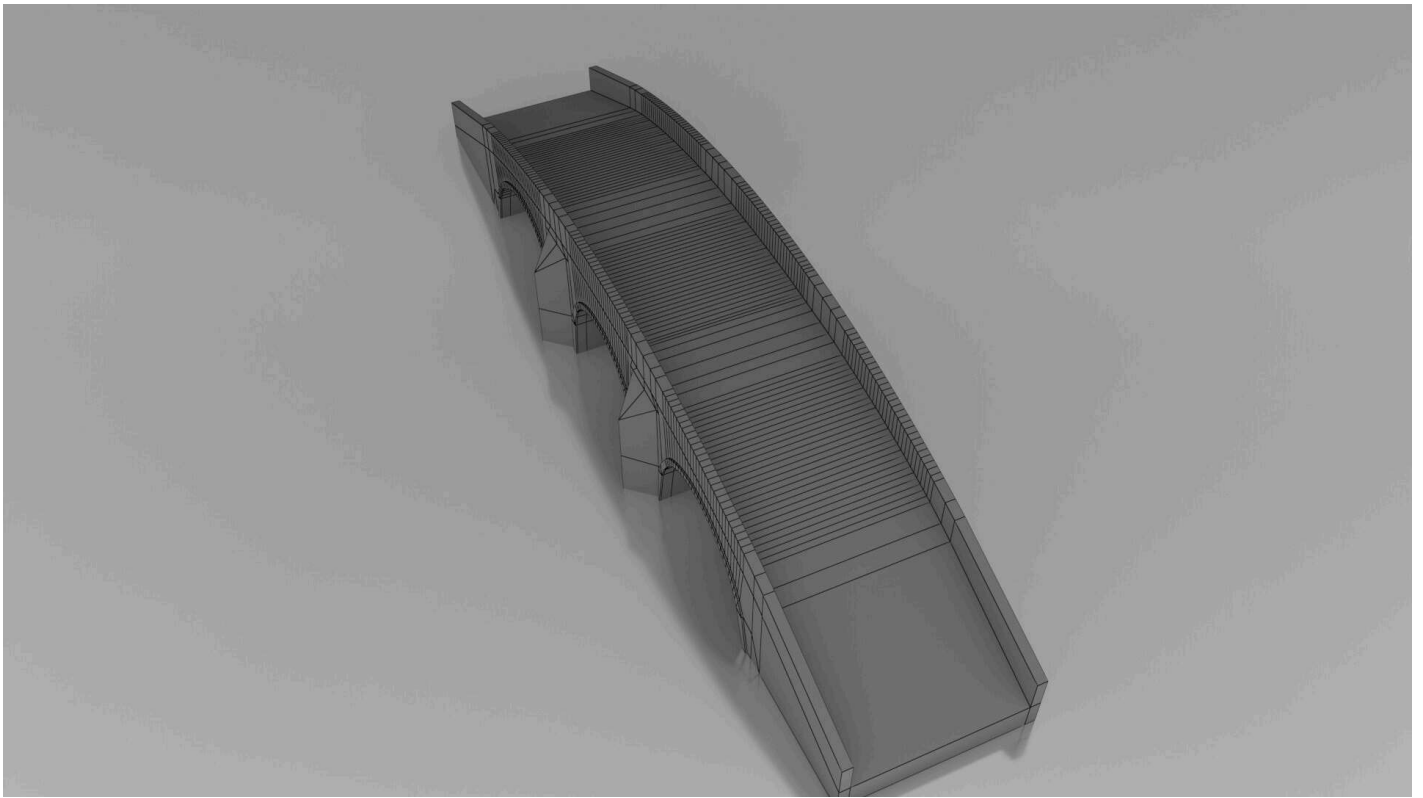
STEP-10: Apply Materials and Colors

1. Open **Modify** > **Appearance**.
2. Apply **metallic** material to the bridge structure.
3. Adjust colors for visual clarity.

STEP-11: Save the Design

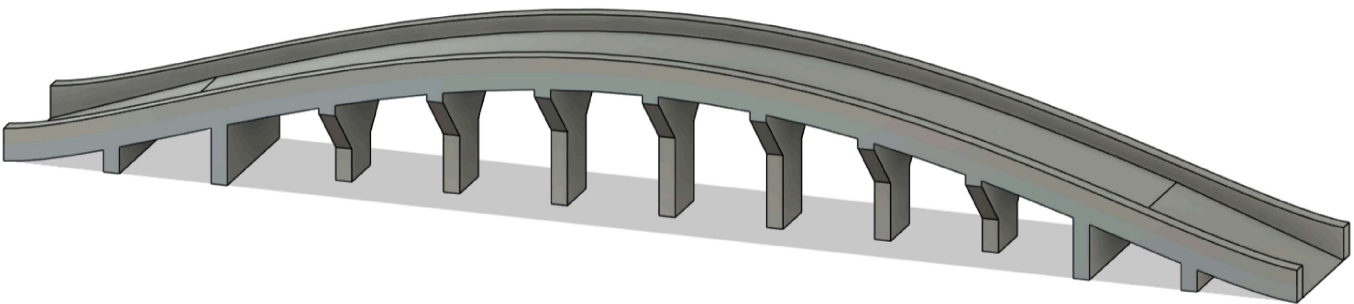
Save the completed bridge model.

INPUT

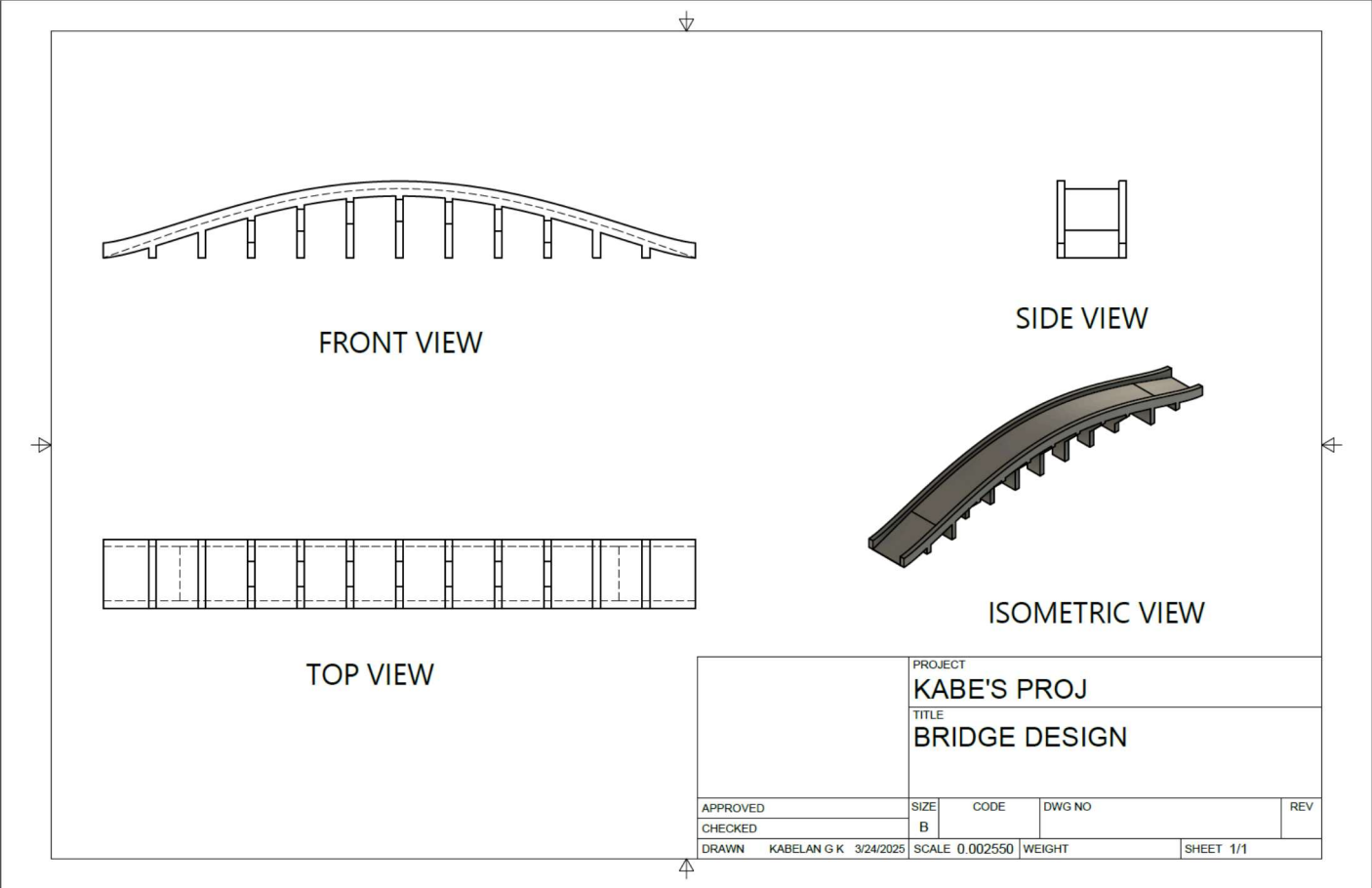


OUTPUT

Isometric View



Drawing



RESULT

Thus, the 3D model of the Bridge Design is successfully created using Fusion 360. (All files are uploaded)