**3D Viewer Application**

This Graphics viewer is developed in WPF using following libraries

1. SharpGL
2. SharpGL.SceneGraph
3. SharpGL.WPF

This project is developed in Visual Studio 2012 verision.

**Code repository**

The code is available in the github. Please use git url - <https://github.com/alagezanmk/3dViewer.git> to clone the code in a new folder.

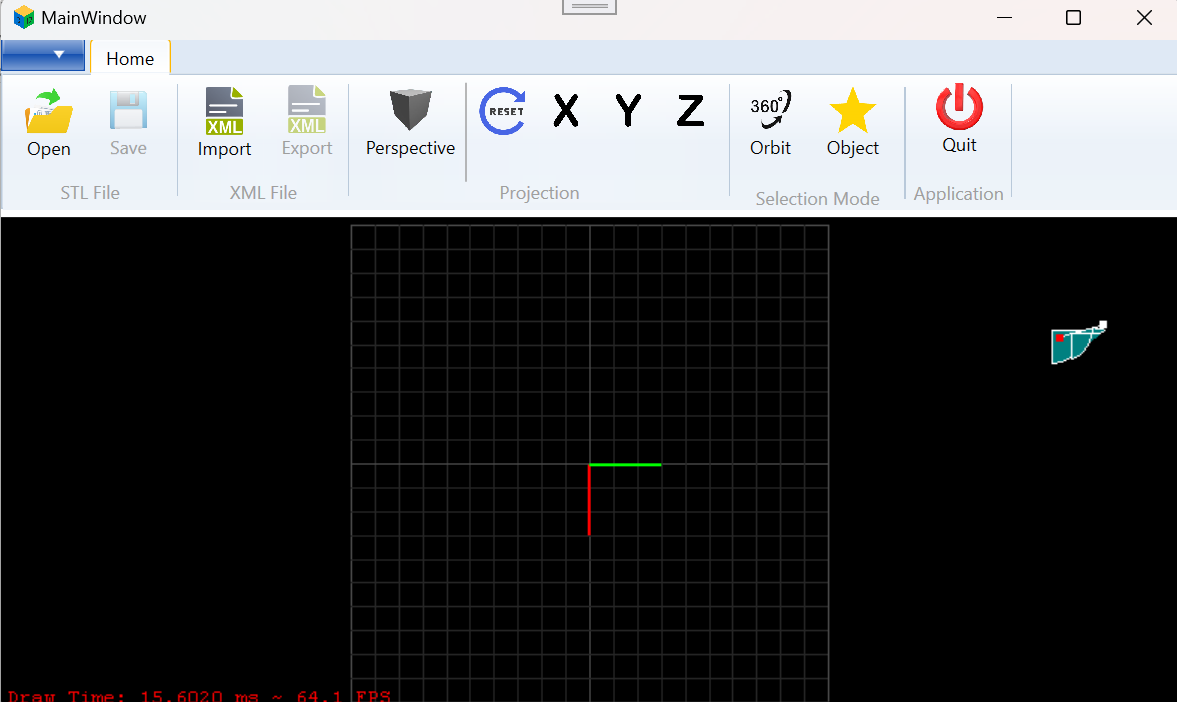
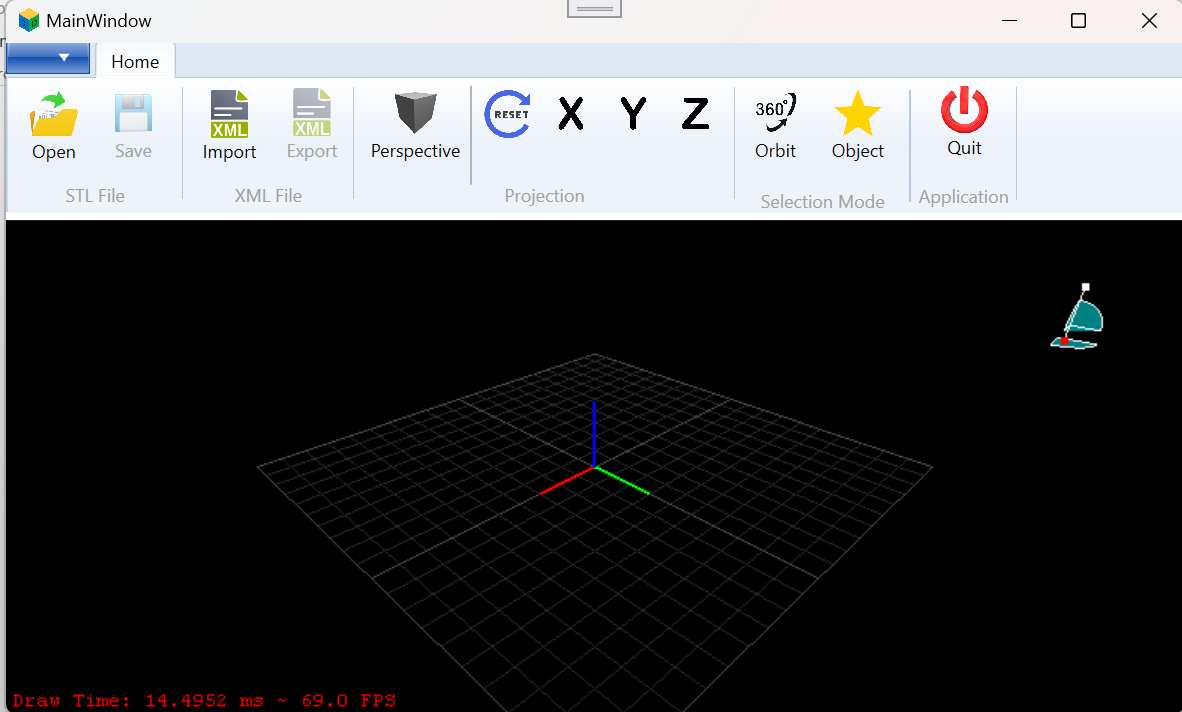
Git Command: **git clone** [**https://github.com/alagezanmk/3dViewer.git**](https://github.com/alagezanmk/3dViewer.git)

**How to run**

1. Open git folder 3DViewer/3DViewer
2. Double click the 3DViewer.sln to open Visual Studio
3. Select the Build -> Build solution
4. Check the build is successful
5. To run - select the **Debug -> Start without or Start without Debugging**

**Application**

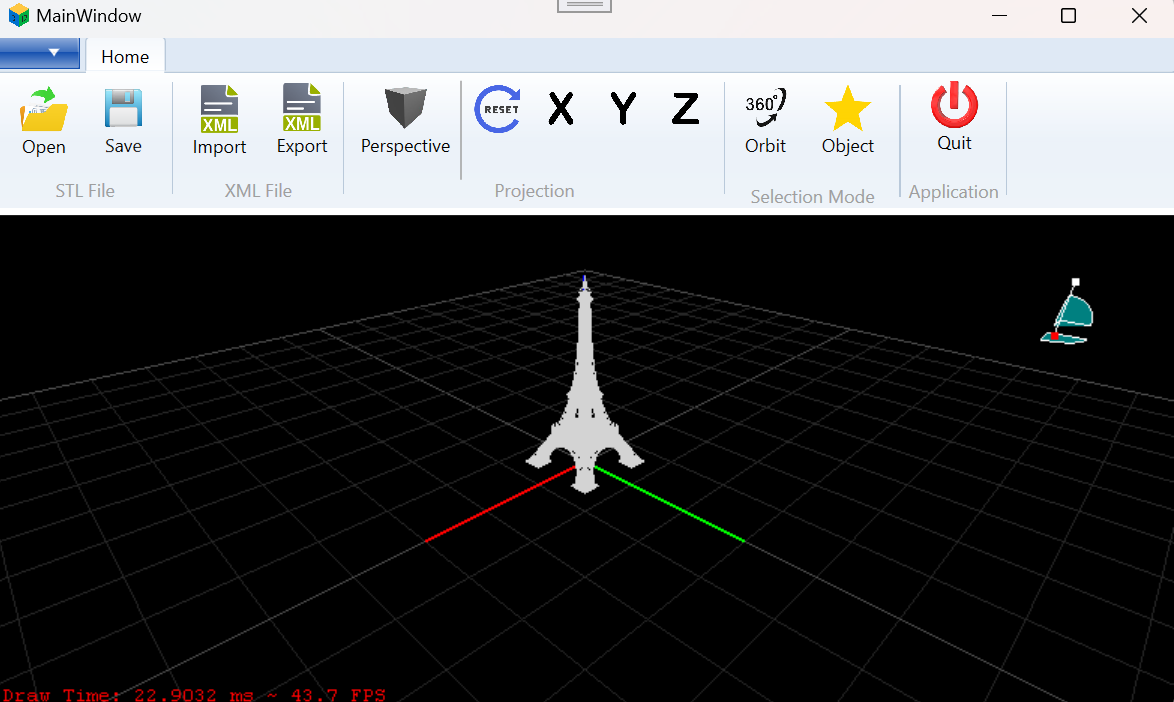
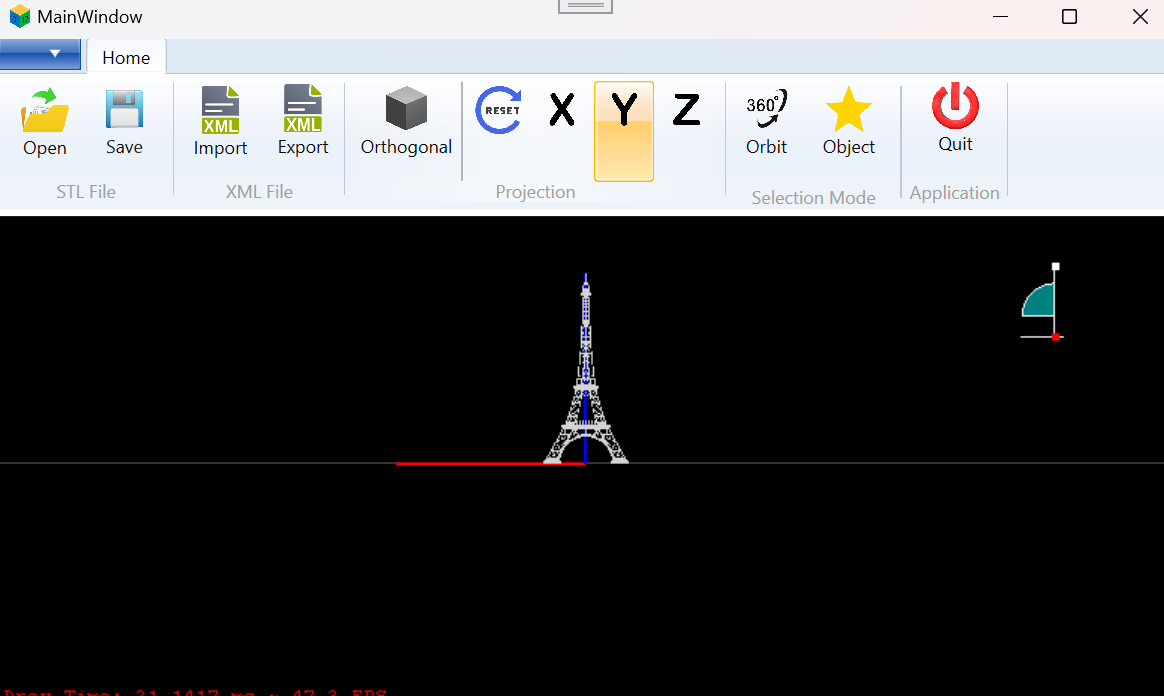
1. Application GUI

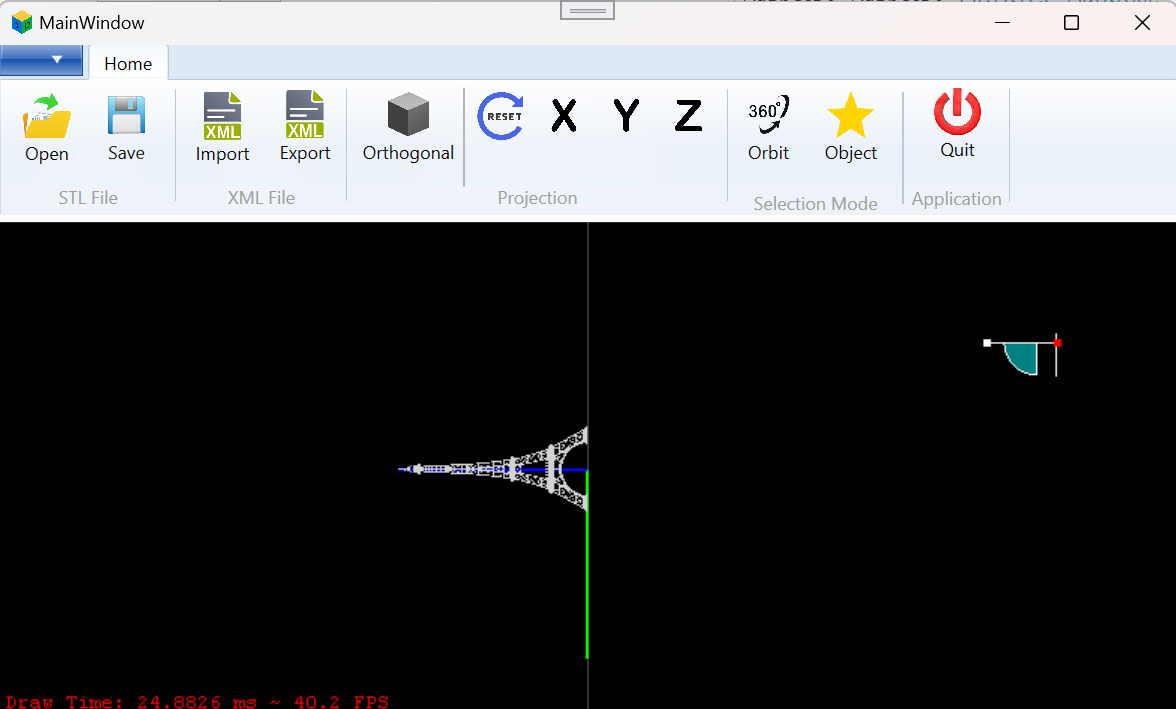
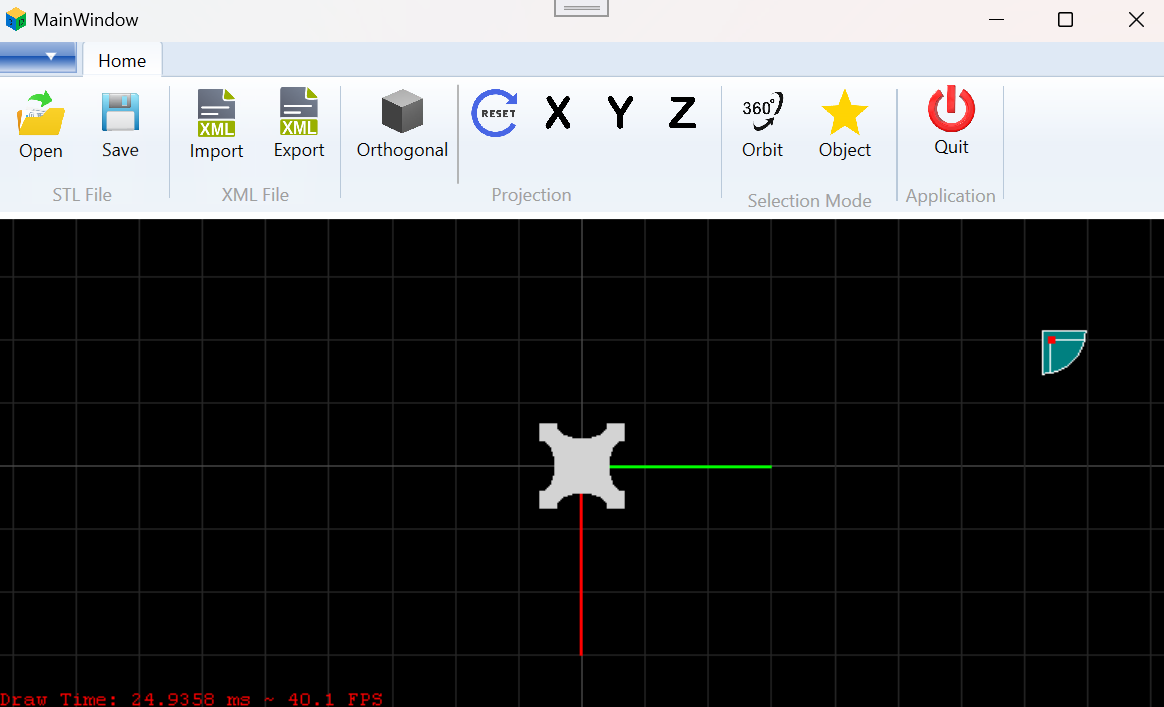


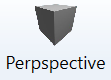
1. Open the **stl file** by click Open icon



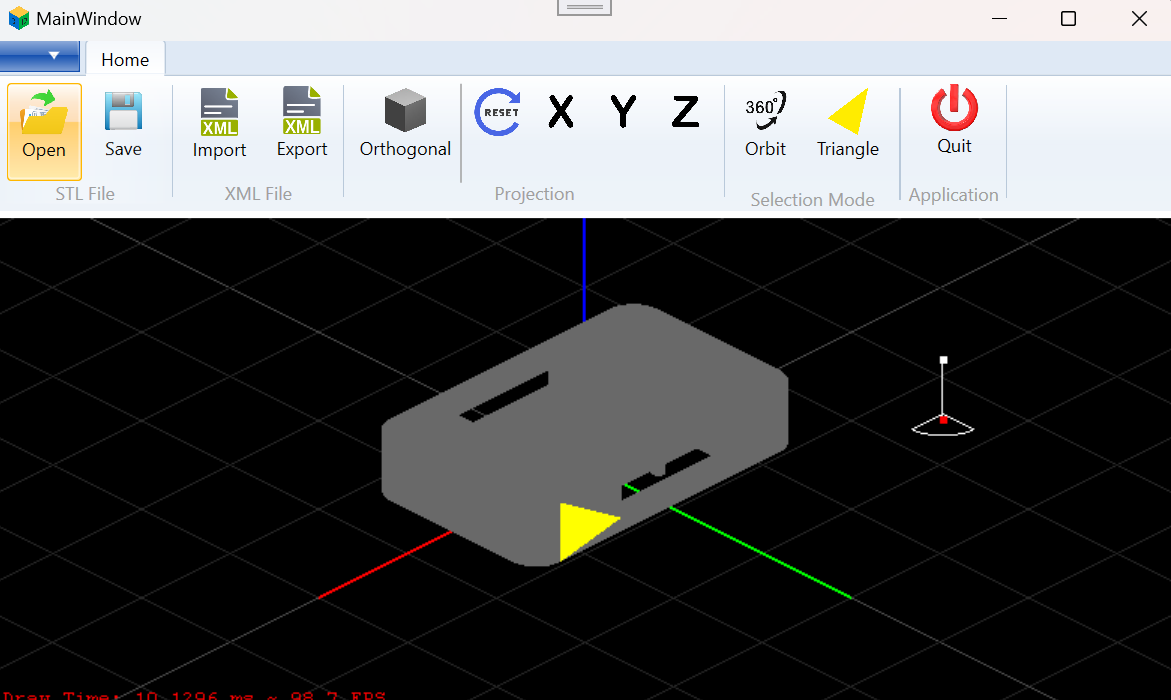
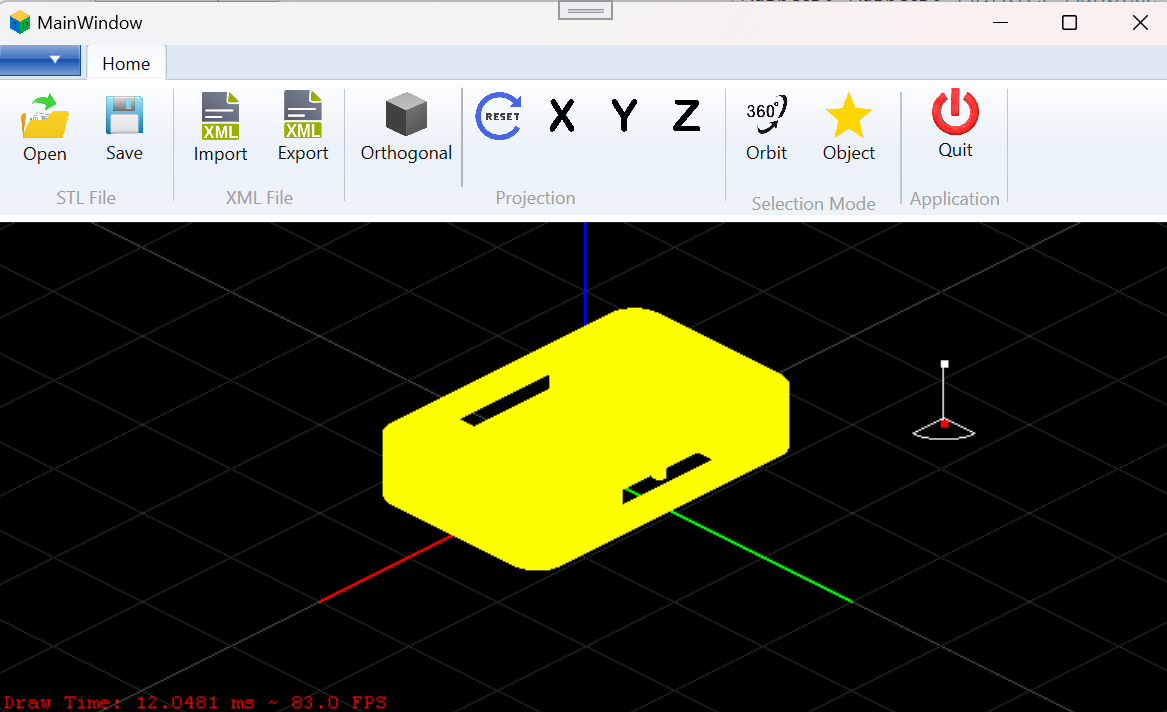
1. Application will show the load model as

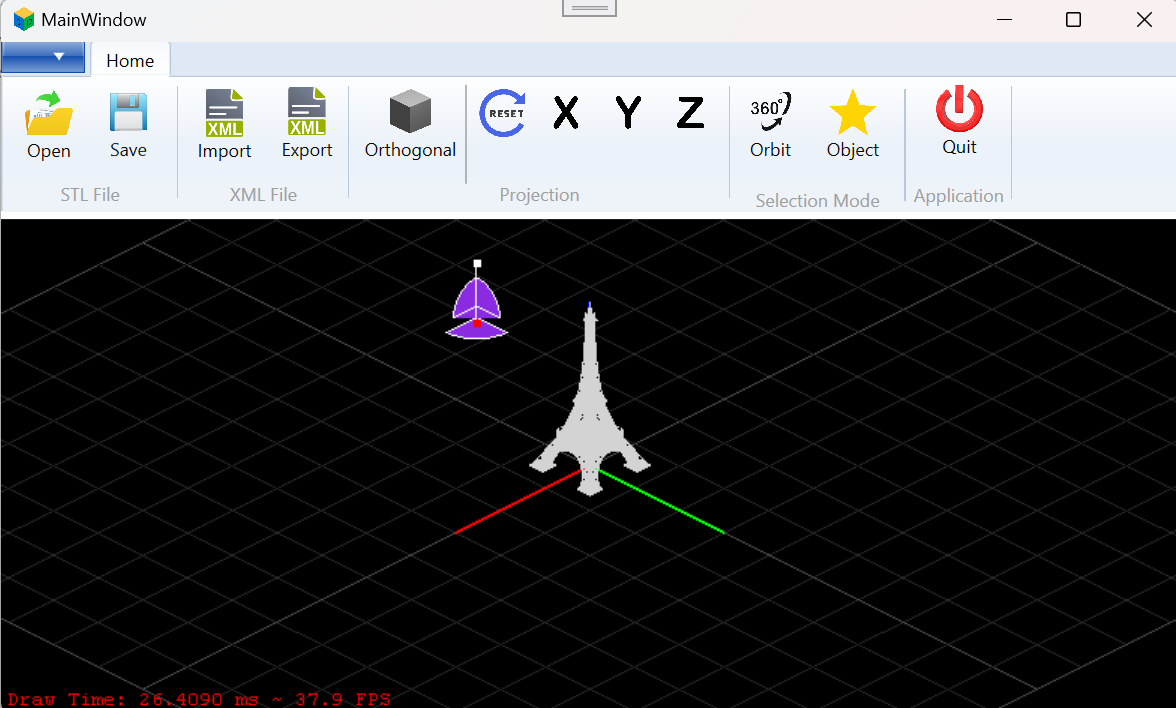
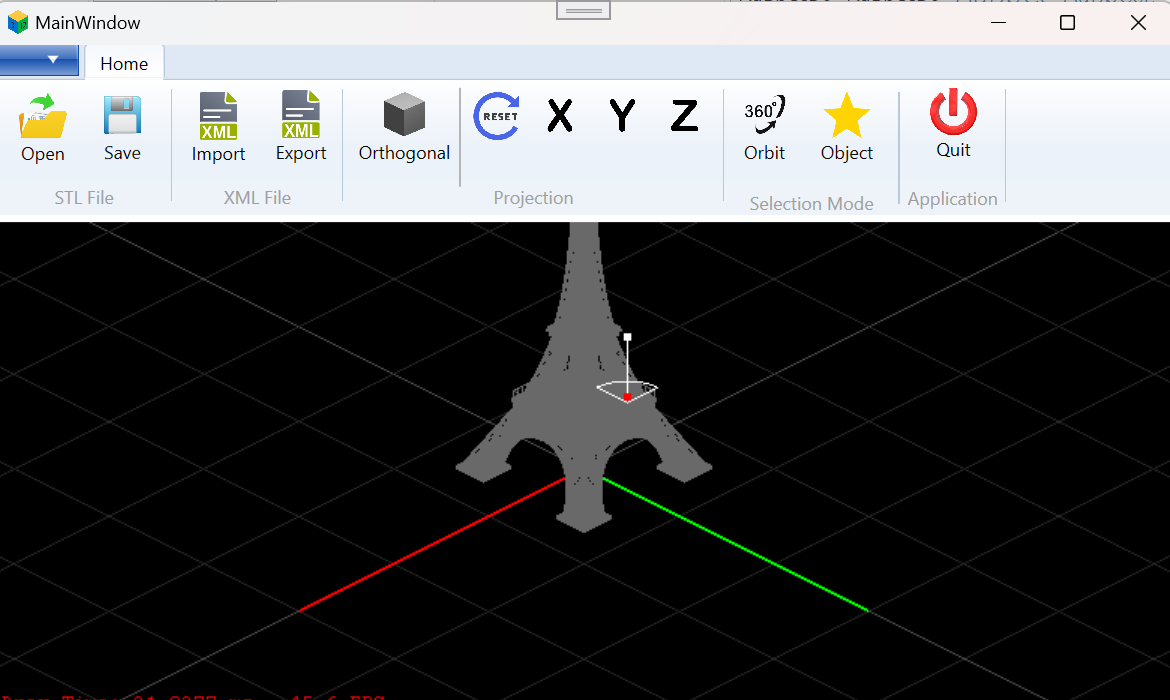
 

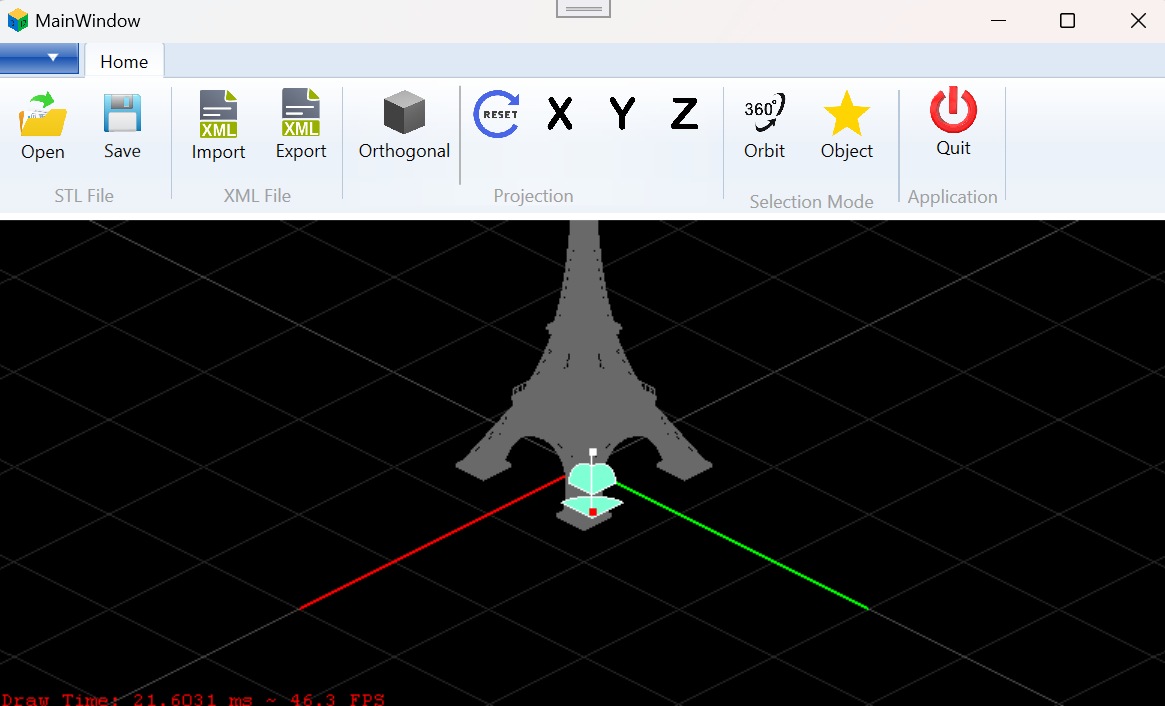
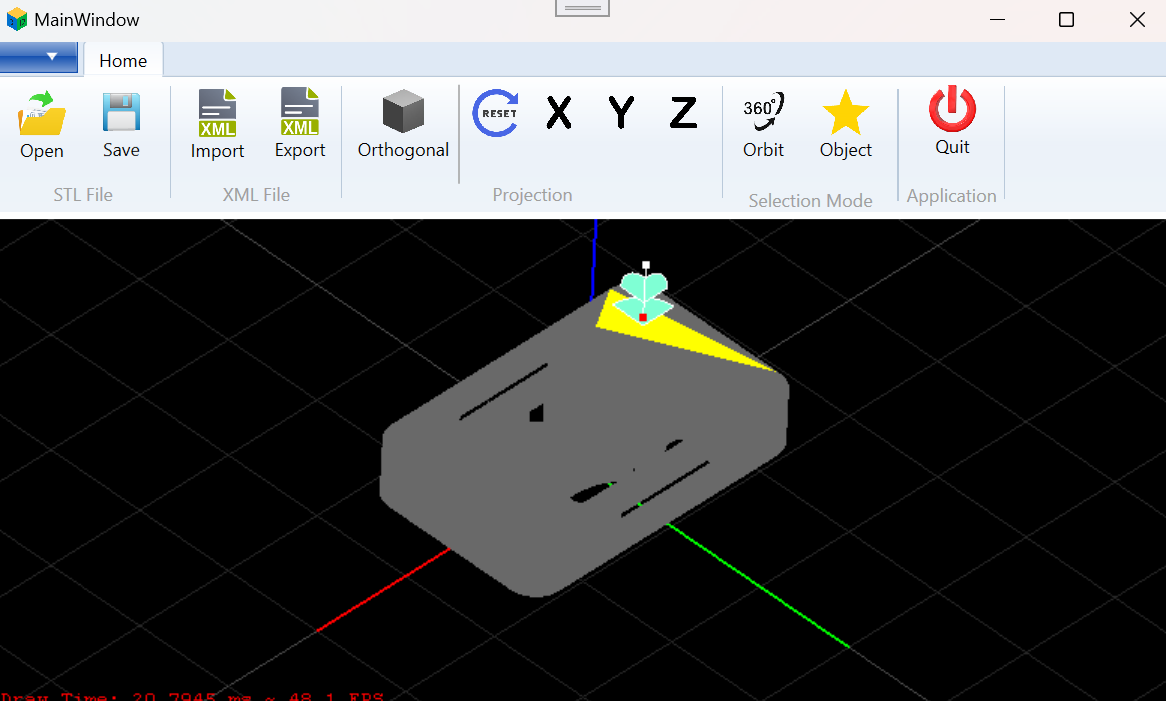
1. The following icons are for STL files methods
   1.  - to save as Binary STL File
   2.  to export open STL File as XML Format file
   3.  to import STL Model in XML Format
2. The Icons  and  can be clicked to switch between **Perspective and Orthogonal** Projections
3. Zoom, Pan and Oribit
   1. Use **Mousewheel** to **Zoom in/out**
   2. If **Pan - Selection Mode** is selected 
      1. Click **Left Mouse button** and Mouse move to **Pan**
         1. Press **Control Key** to **Pan Depth in/out**
      2. Click **Shift Key** & **Left Mouse button** and Mouse move to **Orbit**
         1. Press **Control Key** to **Orbit in Z angle**
   3. If **Zoom - Selection Mode** is selected 
      1. Click **Left Mouse button** and Mouse move to **Orbit**
         1. Press **Control Key** to **Orbit in Z angle**
      2. Click **Shift Key** & **Left Mouse button** and Mouse move to **Pan**
         1. Press **Control Key** to **Pan Depth in/out**
4. **Select Modes: Triangle** or **Object** can be toggled **by pressing F10**

orclick **Icon  or **

** **

1. **Axis Icons** 
   1. Click **** to initial Projection
   2. Click , ,  to X, Y, Z Axis Projection
   3. **Pressing Shift Key** and click these any of four Icons will reset to **initial Zoom**
2.  **Catia compass** is displayed view Top Right. This can be moved to any of view positon.

* 1. Dragging **Catia compass** to STL will snap to **pointed triangle**
  2. Dragging snapped **Catia compass** to free space will gain **world coordinate**