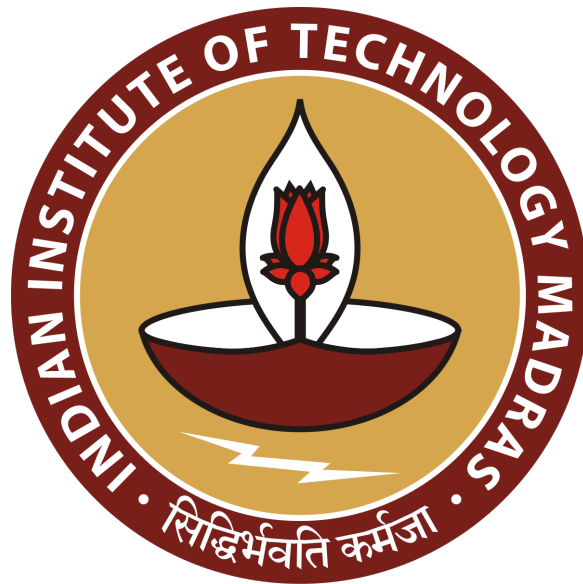


ME5204 - Finite Element Analysis

Assignment 1



Name - Jay Prajapati
Roll number - ME21B143

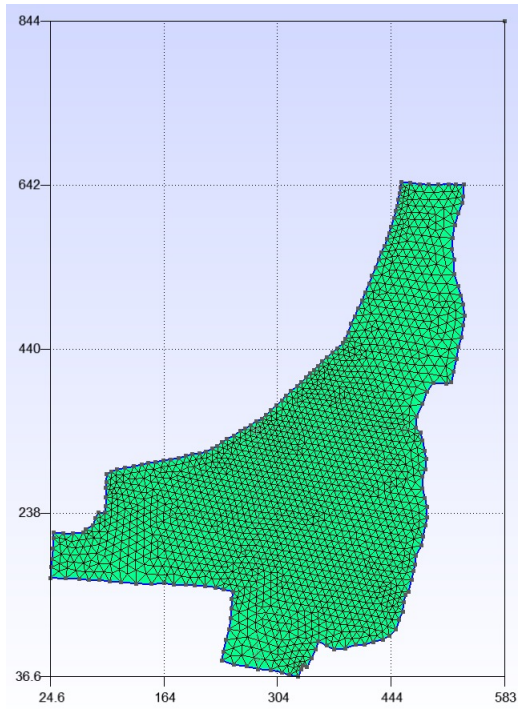
Table of Contents

1 Mesh Generation	3
1.1 Triangular Mesh	3
1.2 Quadrilateral Mesh	4
2 Python Script	4

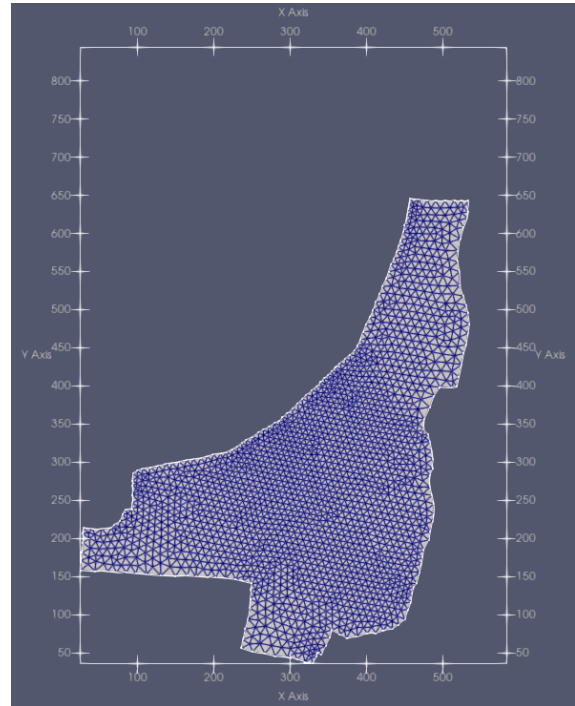
1 Mesh Generation

- Meshes are generated by creating points across the border and connecting them by lines thereby creating a plane surface and doing 2D meshing on it.

1.1 Triangular Mesh



(a) Triangular Mesh using GMSH

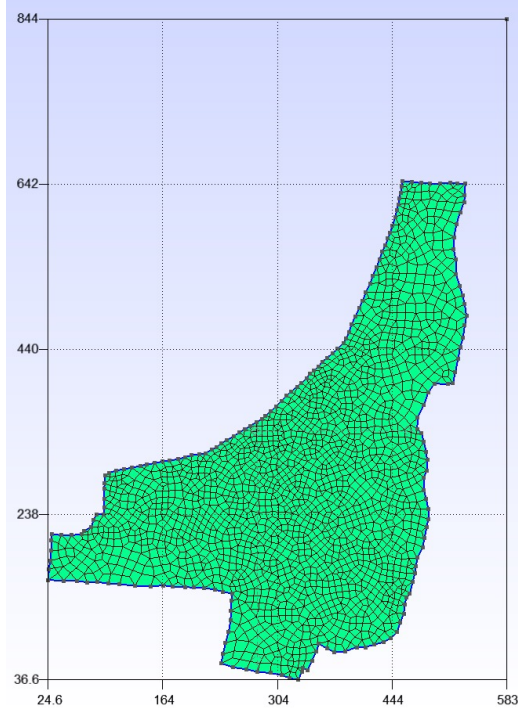


(b) Triangular Mesh using Paraview

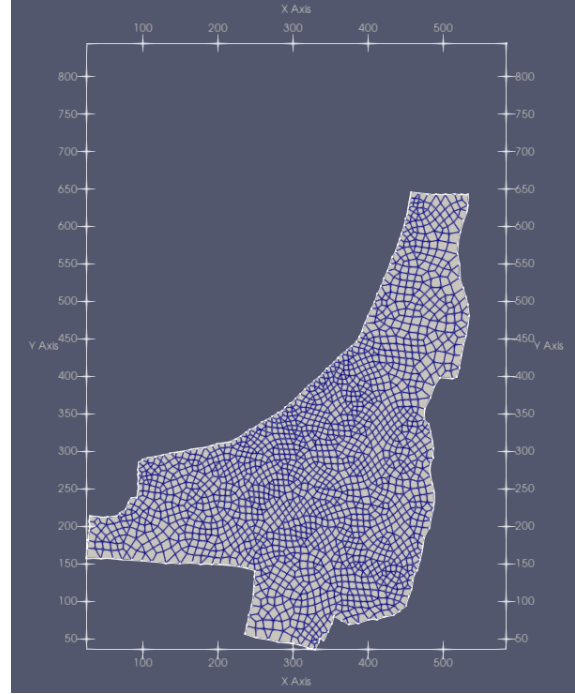
Figure 1: Triangular Meshes

- Number of entites = 366
- Number of nodes = 1924
- Number of elements = 4024

1.2 Quadrilateral Mesh



(a) Quadrilateral Mesh using GMSH



(b) Quadrilateral Mesh using Paraview

Figure 2: Quadrilateral Meshes

- Number of entites = 366
- Number of nodes = 1919
- Number of elements = 2422

2 Python Script

- The following '**Read_Write.py**' file provided reads the mesh information in the form of .msh file and converts it into .vtk file which can be used to visualize in Paraview. The code is generated using Chatgpt.