**Graphical User Interface for Canvas Print**

GUI will be taking polygon and nozzle diameter as input and will be giving us the nozzle print head path. Firstly run the untitled2.fig file to see the GUI.

In this GUI there are basically three ways by a user can give input irregular polygons for canvas print.

* First way is to enter the coordinates in the text file ravi.txt provided and then press **plot graph** button in the GUI.
* Second way is to take coordinates input from a text file by pressing **plot excel coordinates** button in the GUI.
* Third way is to take coordinates input from mouse , for that firstly you have to enter the number of vertex that you will be having in your polygons and enter that number in the textbox provided and press the **plot graph using mouse button** in the GUI.

**Clear** button is provided in the GUI for clearing the current plot and then draw the new plot.

* The number of points to be entered needs to be specified.
* We can plot these points on the GUI using mouse click
* Nozzle Diameter can be chosen and entered.

**First Method**

* Here we traverse the nozzle in regular manner
* We select the first point and then move from it towards the next.
* For this we find the point with next higher co-ordinate.
* This is our required point for nozzle to move.

**Second Method**

* The second method can be by using **offset method,** here we draw perpendiculars from each line and then find their intersection points.
* And repeat this procedure again for the obtained points.
* We find the points using x+r\*cosine, y+r\*sin functions which helps us to find the intersection points
* Using this method we can traverse the graph completely and it is a better method than the above mentioned.

The nozzle path is obtained through the GUI by using the above mentioned steps.

Here, the first method is implementd for obtaining the nozzle path.