# Cartesian Manual

The x-y Cartesian coordinate system, also known as the Cartesian plane or Cartesian coordinate system, is a two-dimensional coordinate system used to locate points in a plane.

Each point in the Cartesian plane is represented by an ordered pair of numbers (x, y), where x represents the distance along the x-axis, and y represents the distance along the y-axis. The x-coordinate indicates how far the point is horizontally from the origin, with positive values to the right of the origin and negative values to the left. The y-coordinate indicates how far the point is vertically from the origin, with positive values above the origin and negative values below.

❖ Open Cartesian Software.


This is the software from where you can control the XY gantry System for image printing, drawing different shapes, printing alphabets, printing numbers using different commands in this software.

❖ When you open the software this is the front screen.

When you select position you can go to that particular position of X and Y axis.


To determine the position of the pen or tool on an X-Y plotter you need to give values of X and Y.

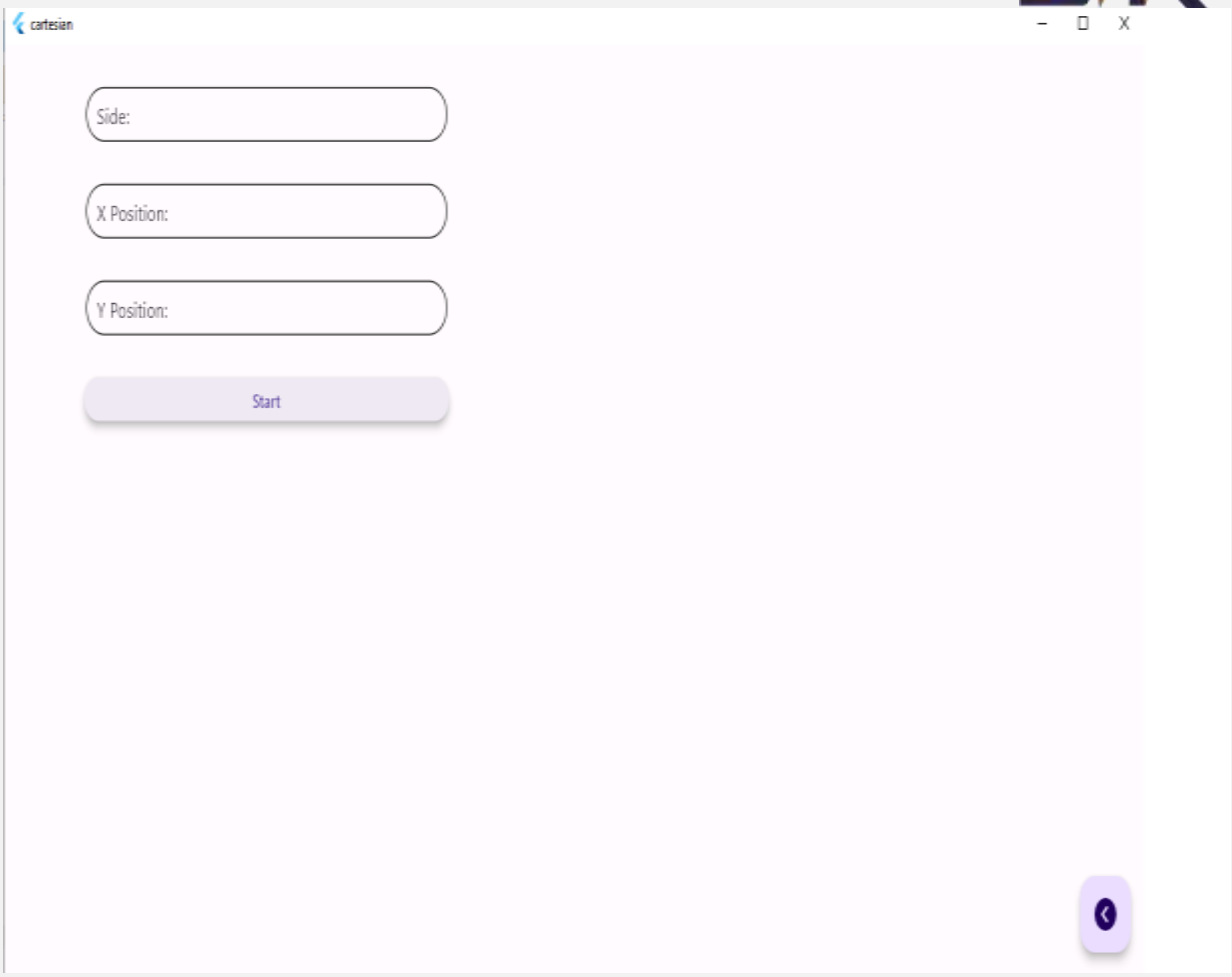
- Start position refers to the position of X-Y axis.
- End position refers to the position where X and Y will reach.
- Live position refers to the position where X and Y are going through.

# ❖ Shapes


By using shapes we can draw square, rectangle and triangle of different side.

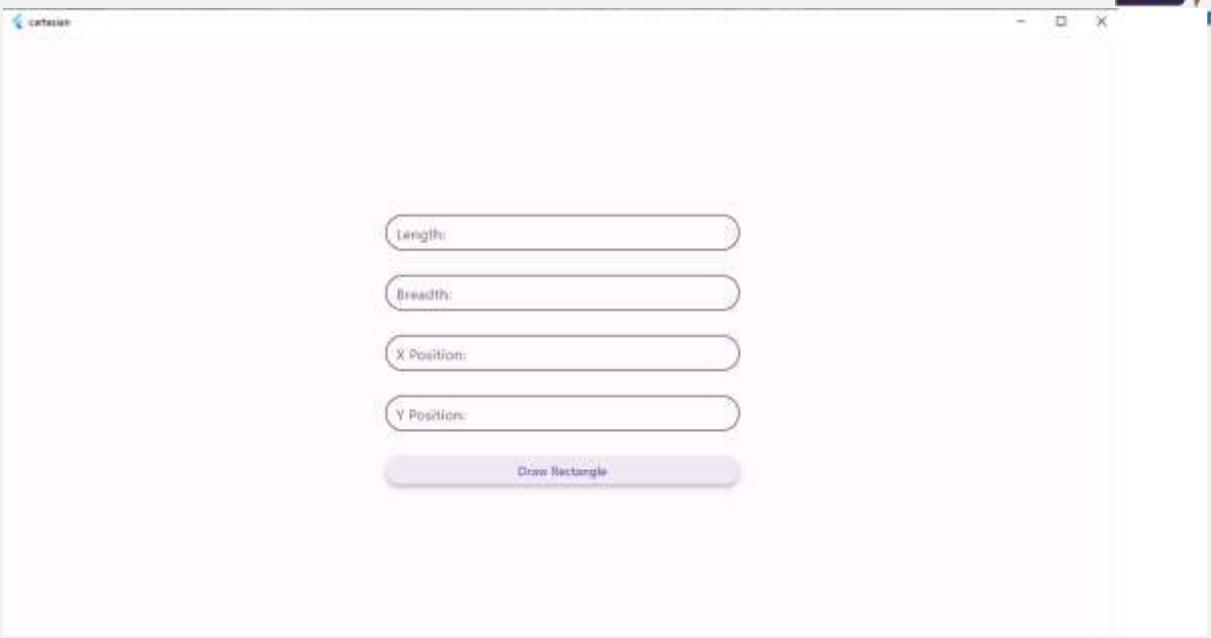
# SQUARE

- Side refers to one side of square
- X-position refers to position define by user form where square is being printed for X axis
- Y-position refers to position define by user form where square is being printed for Y axis




# RECTANGLE

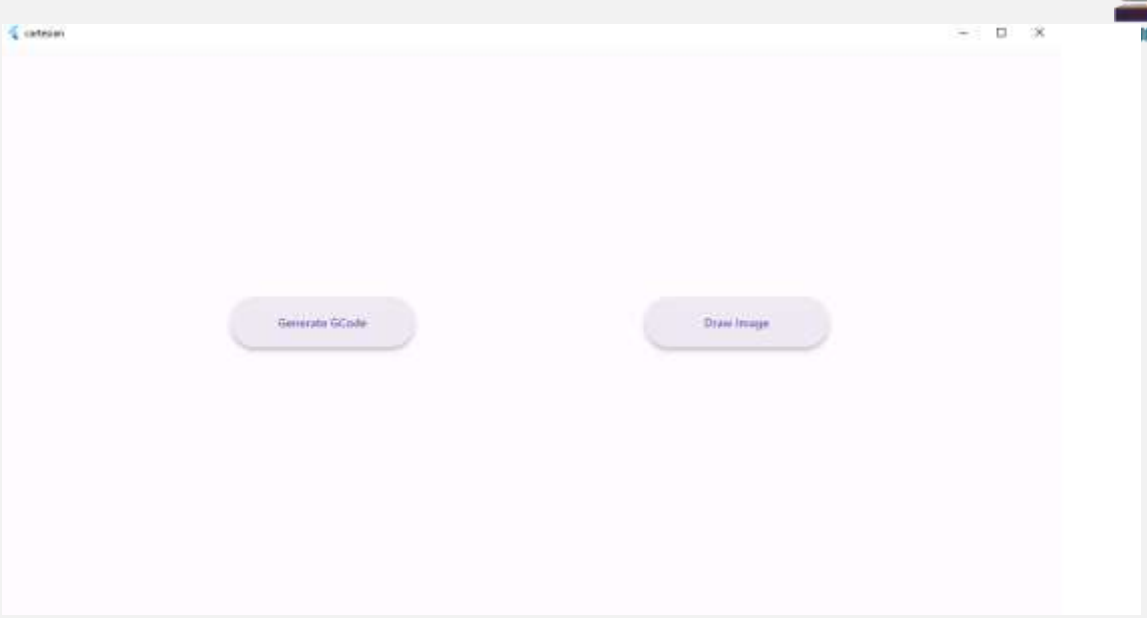
- Length refers to length of rectangle
- X-position refers to position define by user form where rectangle is being printed for X axis
- Y-position refers to position define by user form where rectangle is being printed for Y axis



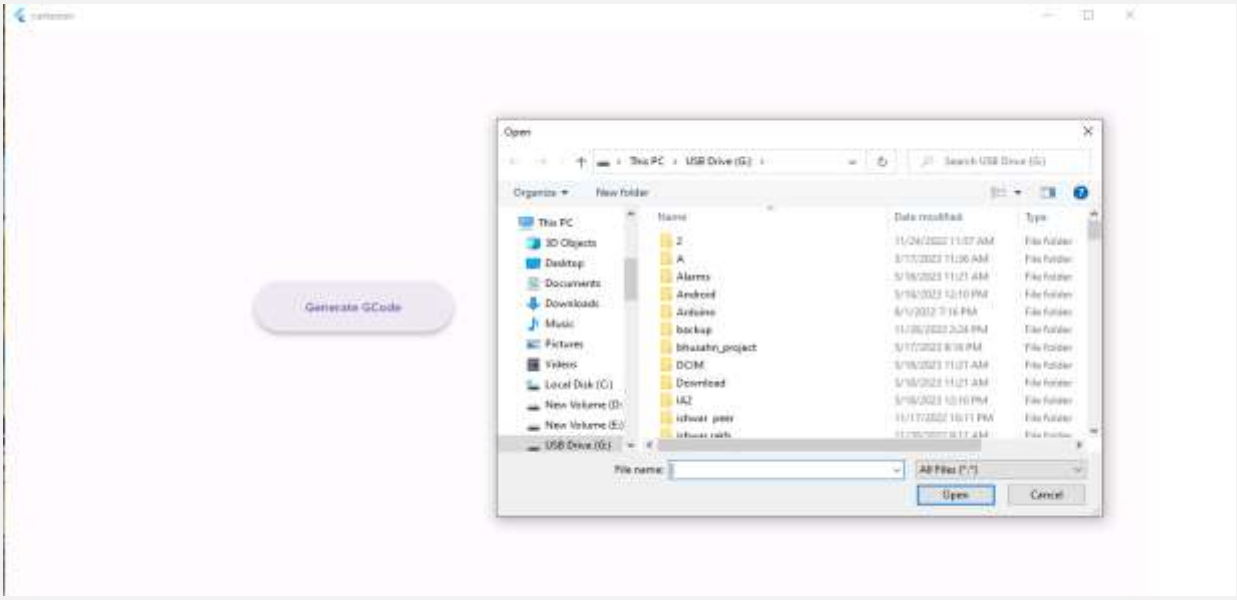

## Image printing

- Objective :- To draw an image using a plotter
- Click on Draw image

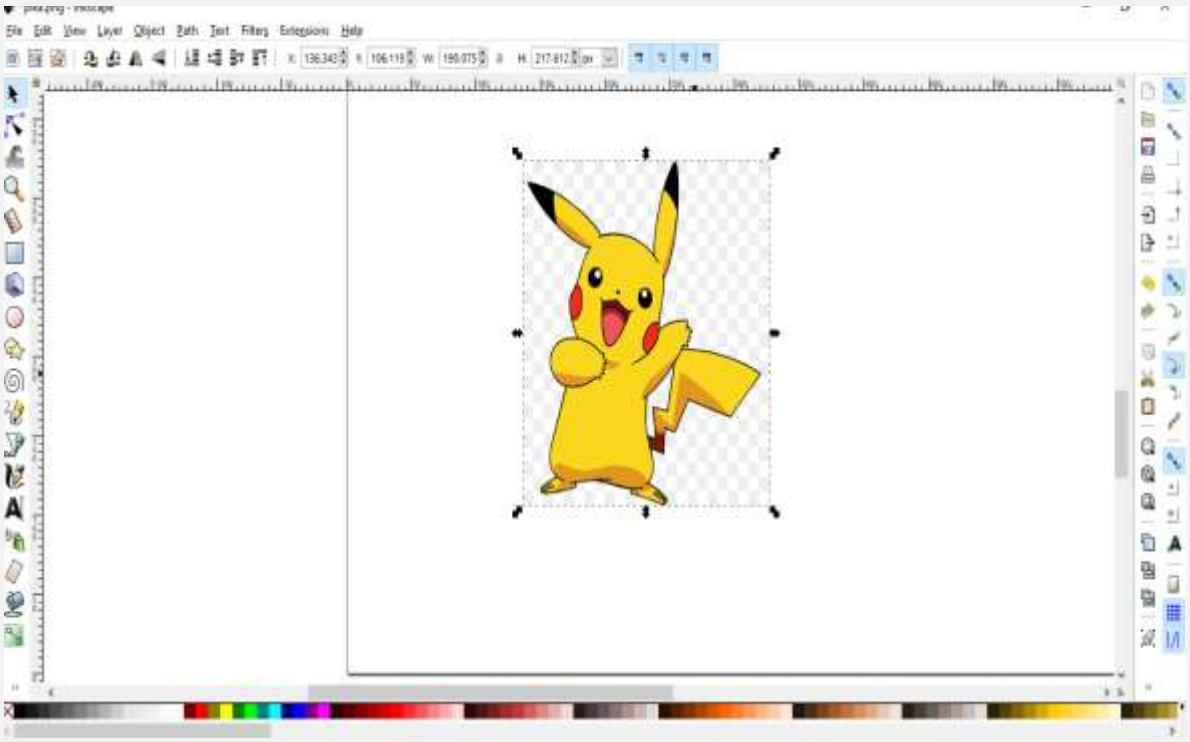

- New window will open, Click on generate.



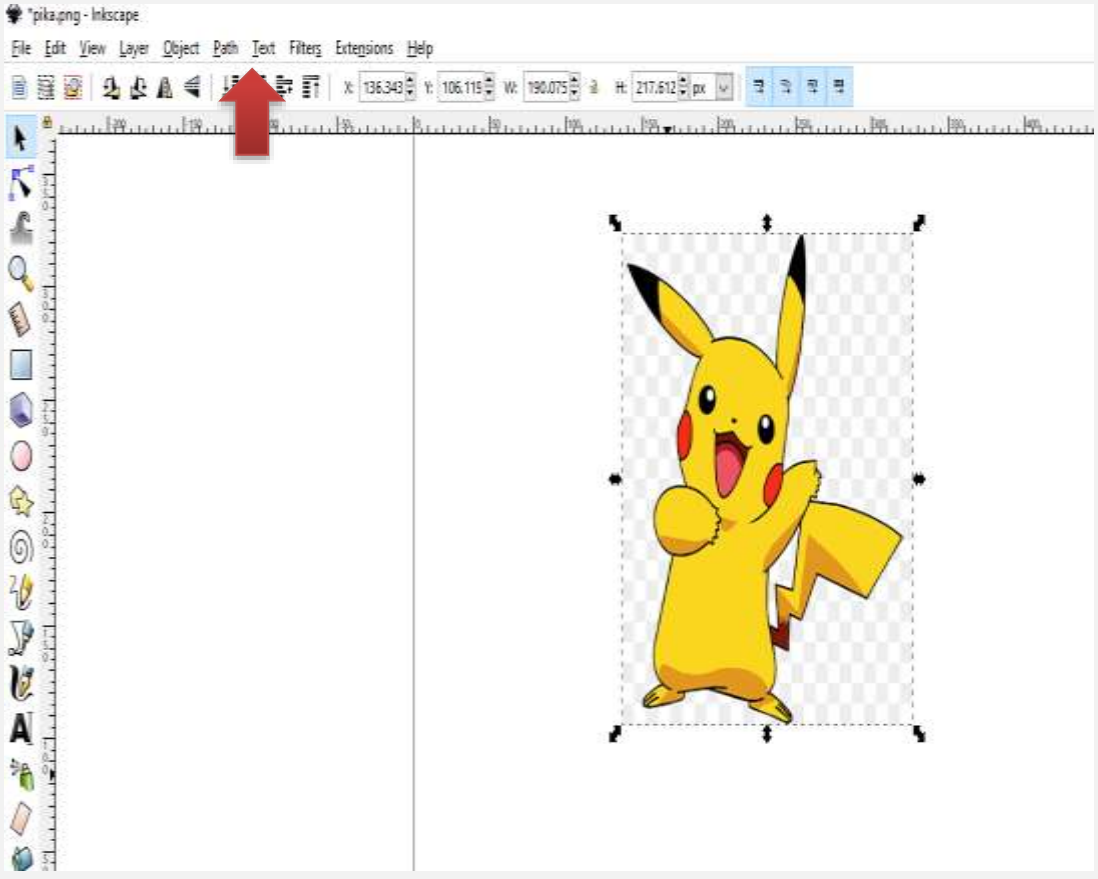

- Then browse image path



❖ image editing software is open  then select this image

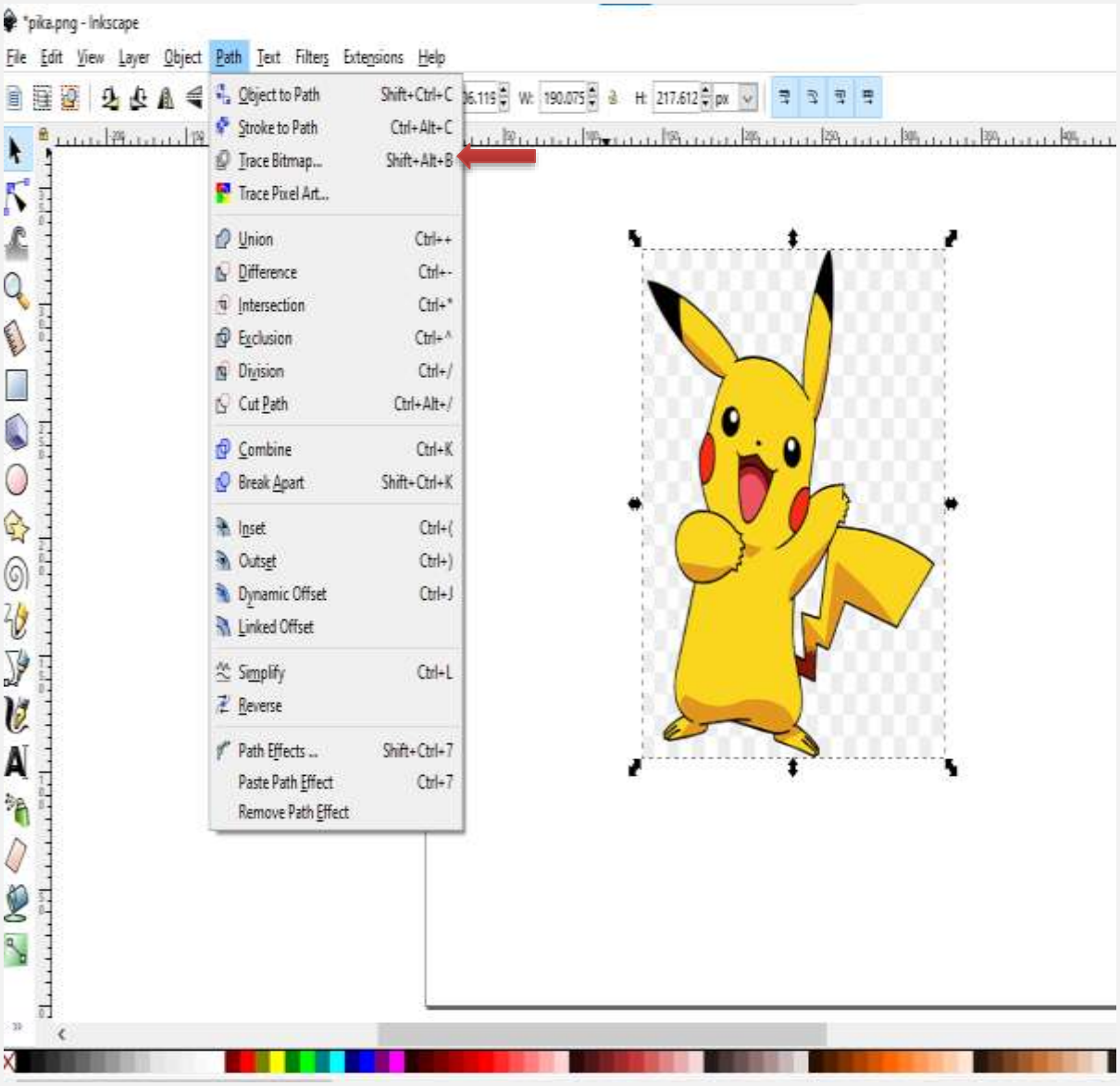


❖ Then Click on **PATH**

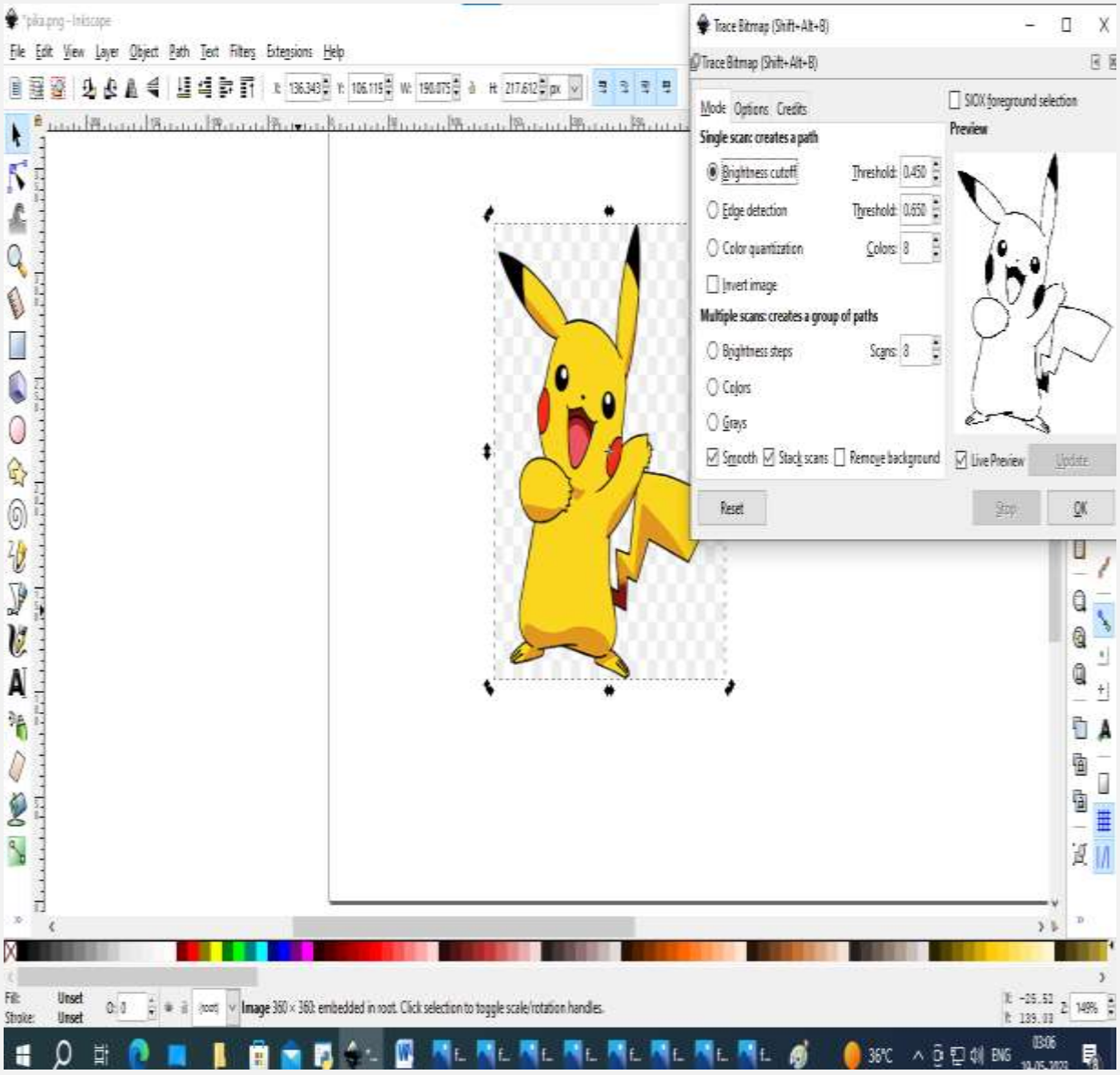


❖ Then Click On trace bitmap which show in arrow

By using "Trace Bitmap," you can convert raster images into scalable vector graphics, enabling you to resize the image without loss of quality, apply different colors and effects, and make precise modifications to the paths and shapes. It is a valuable tool for creating illustrations, logos, and other graphic designs within Inkscape.



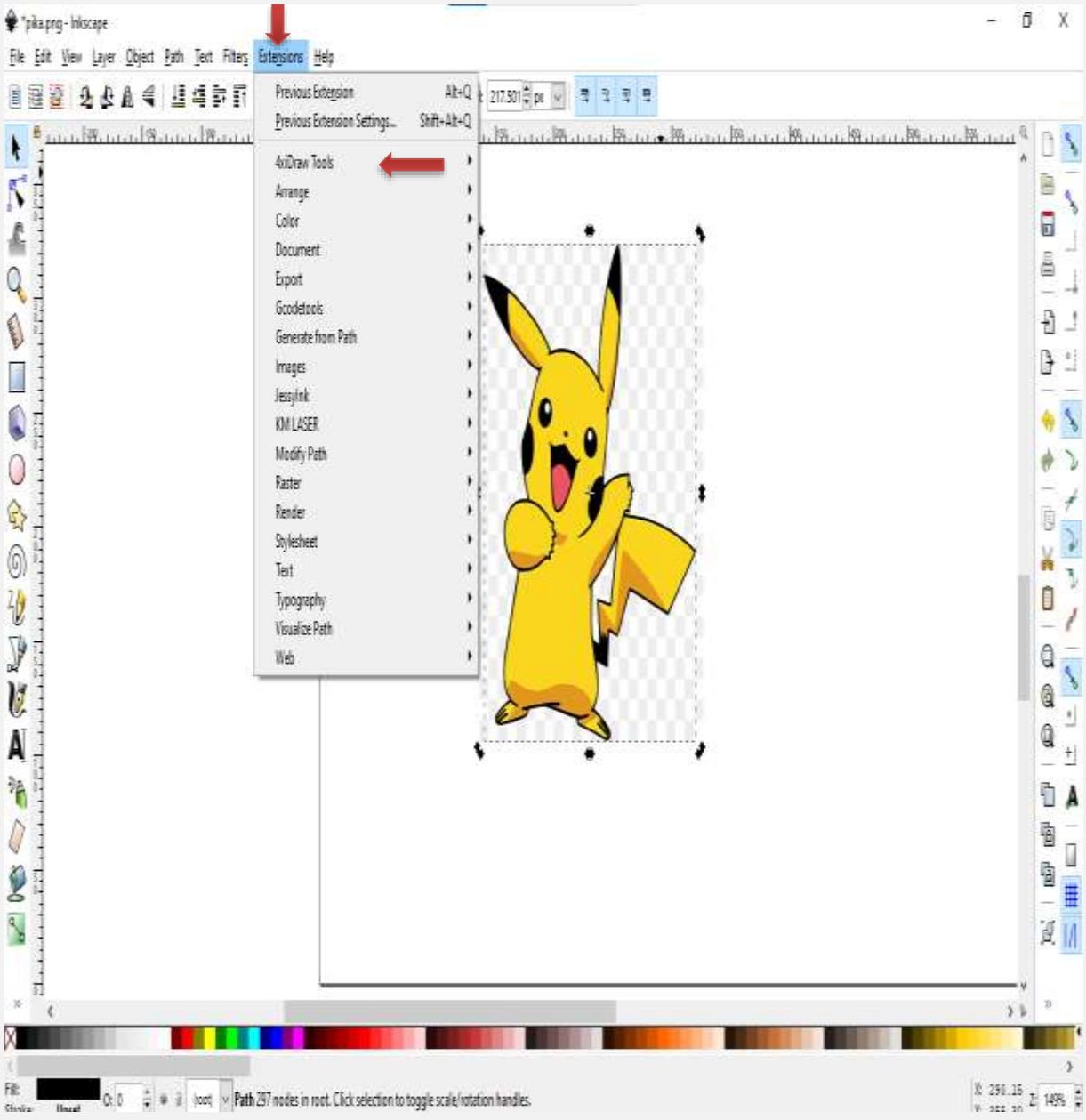
- After That Click on Live Preview
- Adjust Brightness cutoff threshold of your image by your preferences as you want your image
- Adjust Edge Detection threshold of your image by your preferences as you want your image
- Then click on ok.



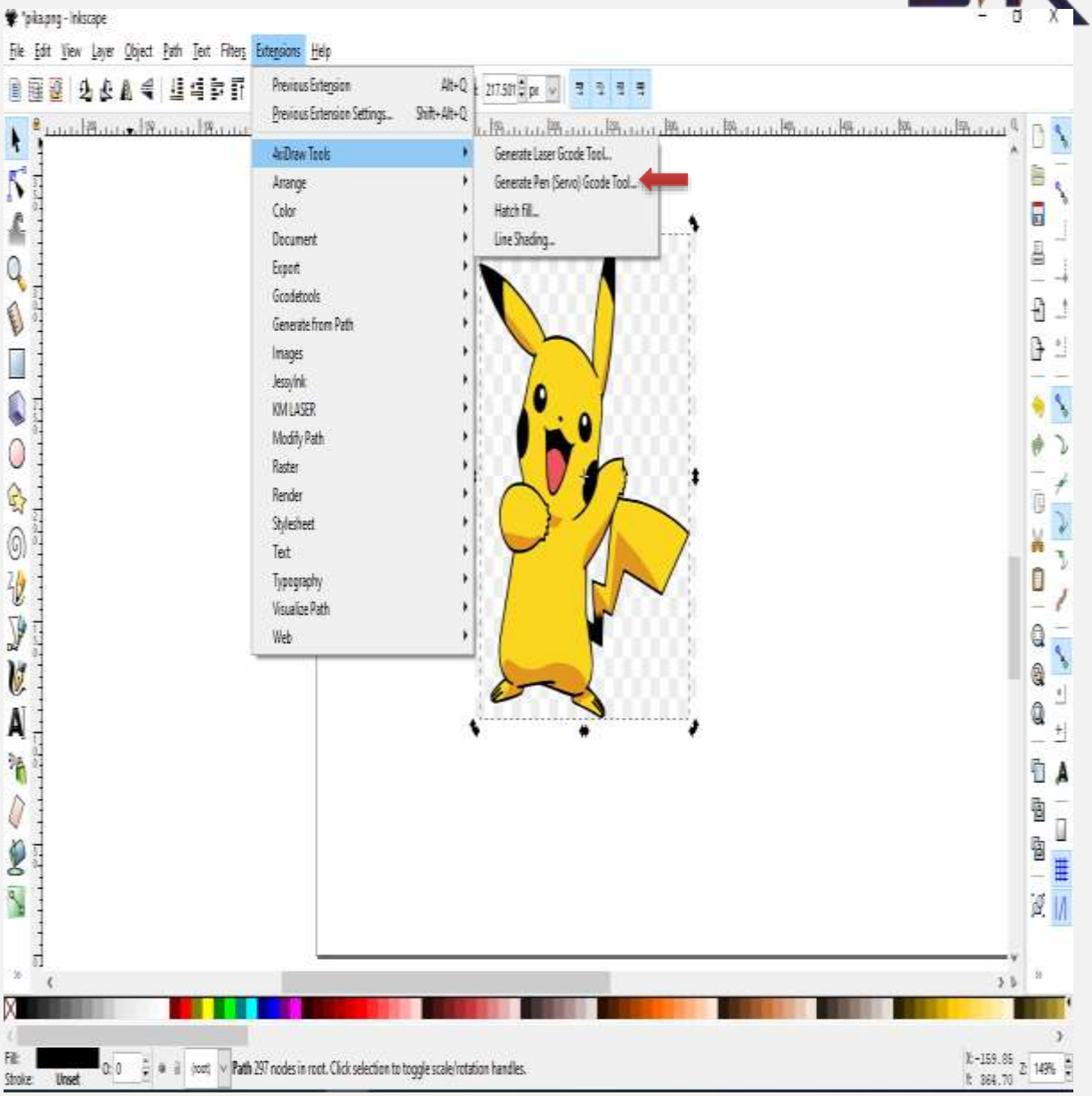

- After That close this window.

❖ After that click on extension

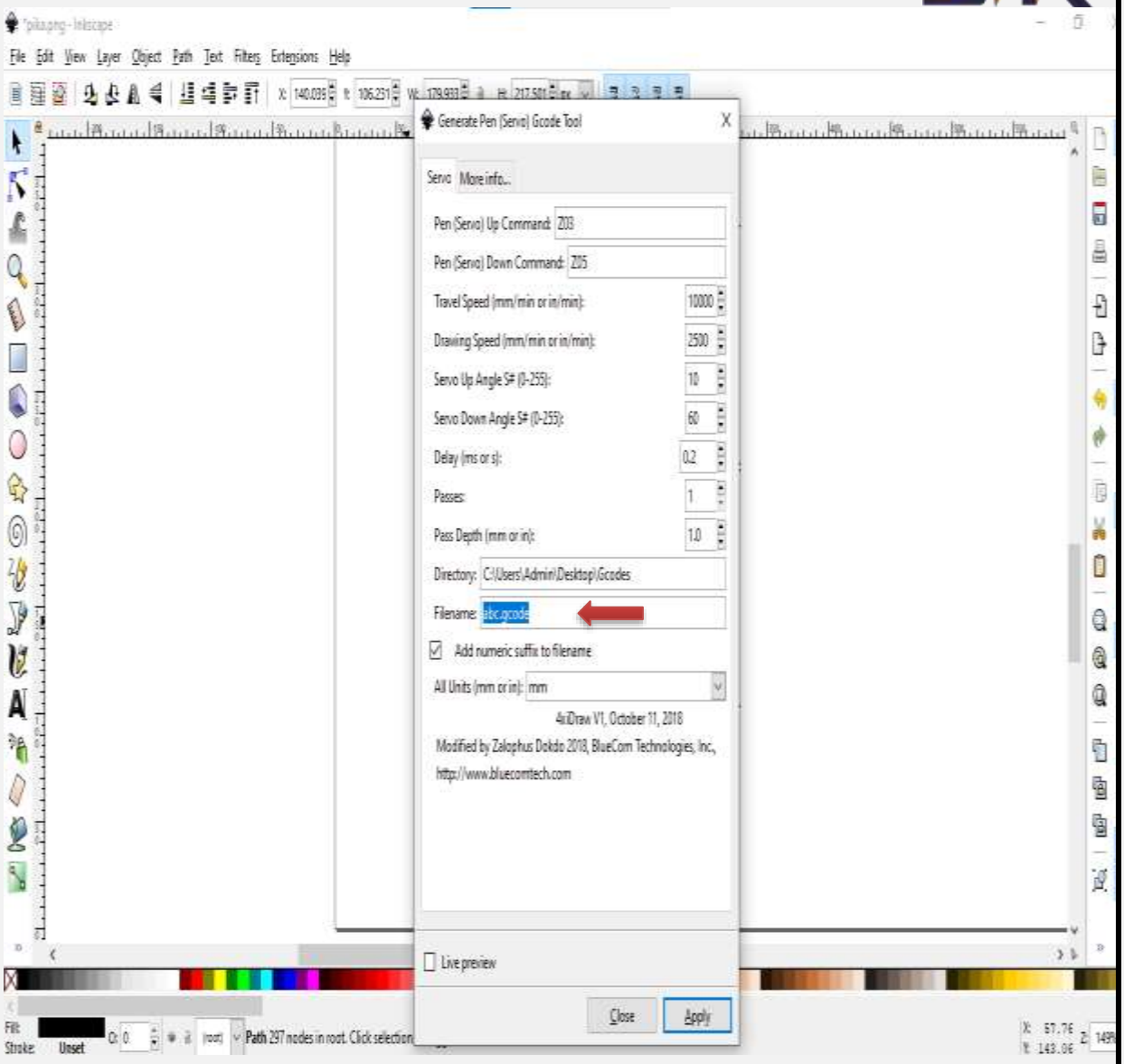
Extensions greatly expand the creative possibilities in Inkscape by providing specialized functions and capabilities beyond the core set of tools. They allow users to streamline their workflow, achieve specific effects, and customize the software to suit their individual needs.




❖ Then select 4xiDraw Tools and click on generate Pen (Servo)Gcode tool

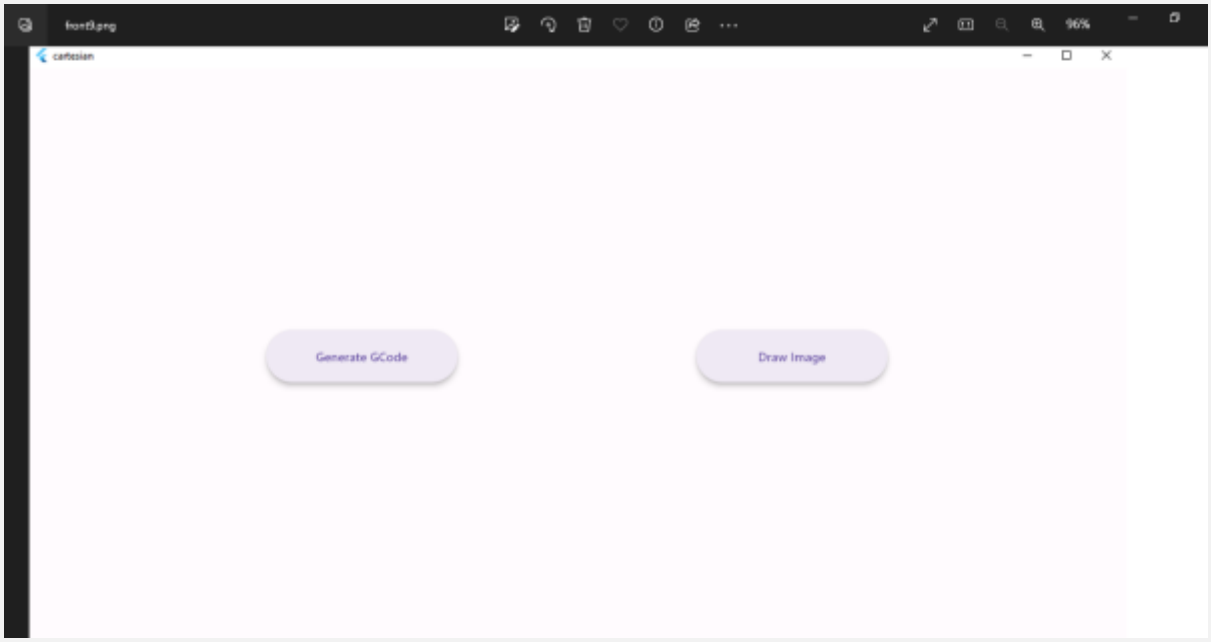


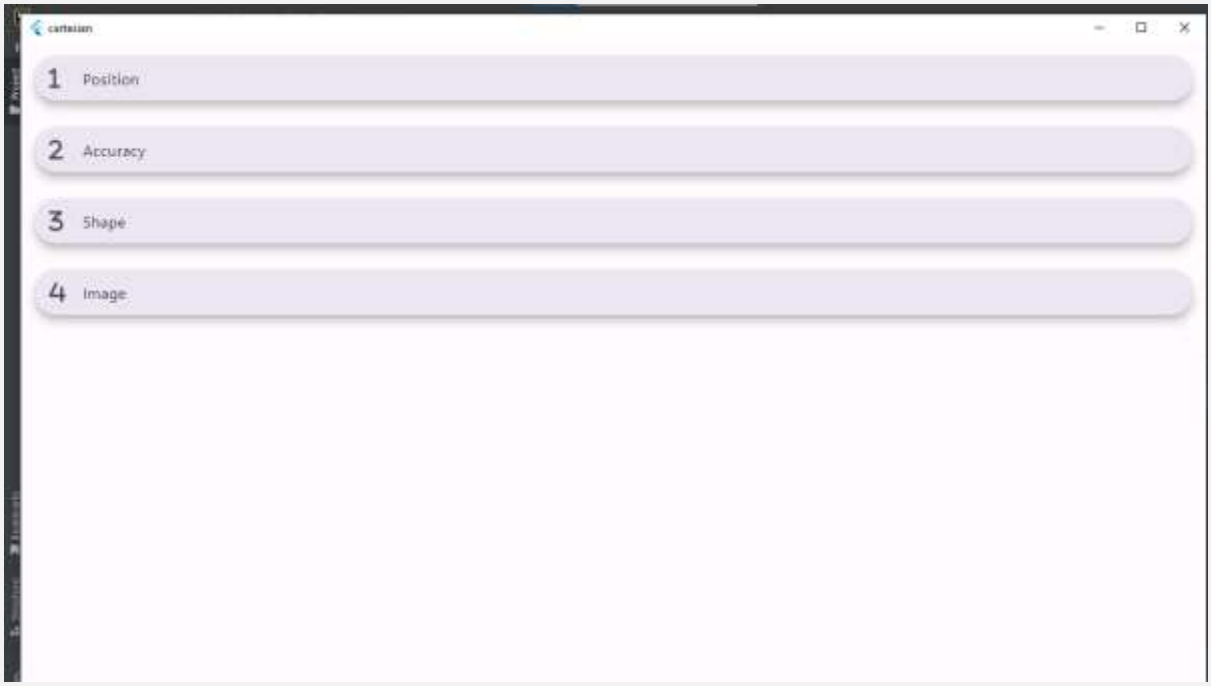

- Then change file name
  eg:-pikachu.gcode




- Then click on Apply.
- Then generate Pen (servo) Gcode tool (Please don’t click on cancel).

- Wait until you see below screen
- Then click on close.
- After that Click on Draw image



# ALERT :

- **There should not be any kind of Power cutoff**
- **Your system should not sleep while Image printing is in process**