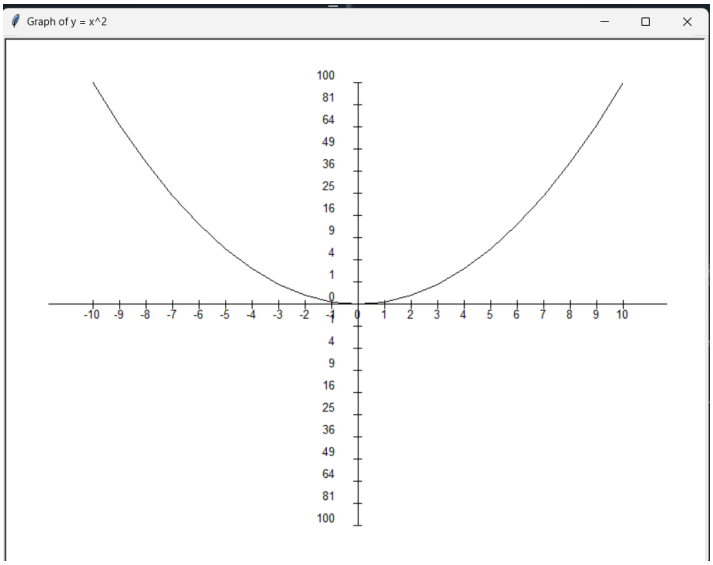
Q 5

Write a Python program using the Turtle graphics library to plot the graph of the function $y = x^2$ for values of x ranging from -10 to 10. Your program should follow these steps:

1. **Set up the coordinate system:**
   - Configure the Turtle screen to represent a Cartesian plane, with the origin (0, 0) at the center of the window.
   - The x-axis should range from -10 to 10, and the y-axis should range from 0 to 100.
2. **Draw the axes:**
   - Draw the x-axis and y-axis with labeled tick marks at intervals of 1.
3. **Plot the function $y = x^2$:**
   - For each integer value of x from -10 to 10, calculate $y = x^2$and plot the corresponding point using the Turtle pen.
   - Connect the points with lines to create a smooth curve.
4. **Enhance the graph:**
   - Use different colors for the curve, axes, and tick marks.
   - Add labels for the x-axis, y-axis, and the function $y = x^2$.

Example Output:

The graph should display a parabolic curve representing the function $y = x^2$:, centered on the Cartesian plane.



Grading Rubric (Out of 10 Points):

Criteria	Points	Description
Coordinate System Setup	2	The coordinate system is correctly set up, and the screen is centered at (0, 0).
Axis Drawing	2	The x-axis and y-axis are drawn accurately with labeled tick marks.
Function Plotting	3	The function $y = x^2$ is correctly plotted, and points are connected to form a smooth curve.
Graph Aesthetics	2	The graph is visually appealing, with appropriate use of colors, line thickness, and labels.
Code Clarity and Comments	1	The code is well-structured, easy to read, and includes comments explaining key sections.