# Read Me

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## Basic Idea

The basic idea is to display conic sections using Matplotlib and PyQt5

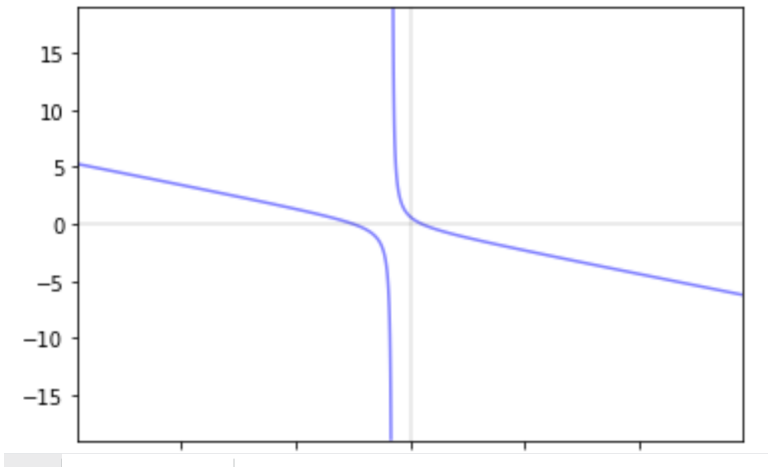
The code consists of two parts:

- ☐ A code to demonstrate conic curves using Matplotlib
  Basic equation of a conic: $ax^2 + by^2 + cx + dy + exy + f$
- ☐ A second code to show curve of a Parabola and control coefficients of equations via slides in a interactive GUI using PyQt5

A ipynb file, “ED Python Project” with the two programmes in a notebook and separately as two py files, “Matplotlib Project 1” and “Parabola GUI 2” are attached.

## Working Of Code

In the first part we take the coefficients of the general conic section as input from a csv file. The csv file is taken into the code as the data frame and from there the coefficients are taken up by variables. Varying conic sections can be displayed by changing the input values in the csv file. The csv file named ‘data.csv’ is attached.



The second part uses sliders to vary the coefficients a,b and c in the equation.
Coding has been done to minimise user effort in making the necessary variations. After the program is run, the user can give the input by just using the mouse. A fourth slider to show the equation of the tangent at the selected x coordinate in the graph.