Bexorg Software Engineering Interview Coding Tasks:

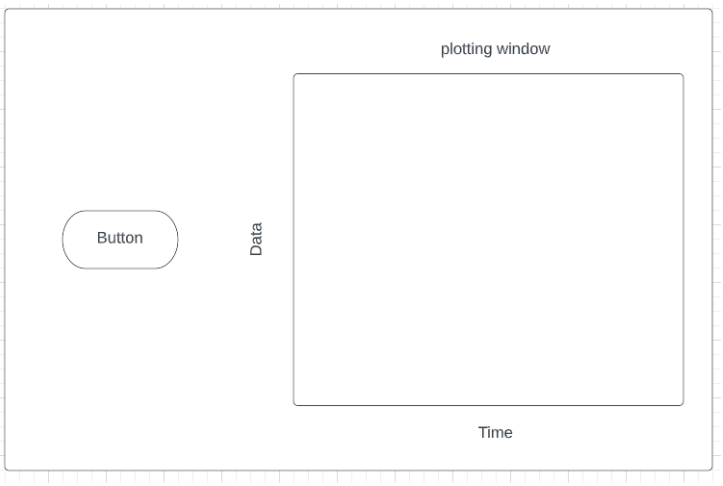
Task1: Real-Time Data Acquisition and Visualization

Objective: Develop a user interface to control and visualize real-time data using Python..

Part 1: GUI Setup

Task: Create a PyQt5 GUI consisting of:

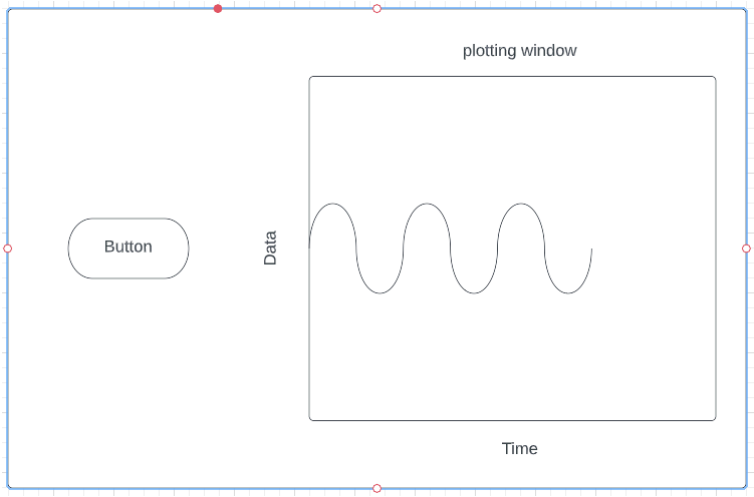
- A button labeled “Start/Stop Plotting”
- Three text boxes for user input of “Amplitude”, “Offset”, and “Frequency”
- A window for plotting a sine wave in real-time



Part 2: Real-Time Plotting

Task: Implement functionality to:

- Start plotting a real-time sinewave with set parameters taken from the text boxes when the button is clicked.
- Use multithreading to ensure the GUI remains responsive during the plotting process.



Part3: Data Logging

Task:

- Save real-time sine wave data every 1 minute into a ‘.npy’ file.
- Data logging should include clear timestamps and no data loss between saves.

Deliverables:

- Complete source code for the real-time plotting application.
- Documentation on how to operate the GUI and an explanation of the code structure.

Due Date and Next Steps:

Due Date: The tasks are to be completed within three days from the date of assignment.

Next Steps:

1. Submission: Candidates must submit all deliverables by the due date via email to brian.hinger@bexorg.com
2. Review: The submissions will be reviewed for task completion and overall quality.
3. Candidates who successfully complete the tasks will be invited to the next stage and scheduled for a second round of interviews immediately following submission & review.