Activity 3

Student Club Voting System with Visualization

Write a MATLAB program that simulates a voting system for a student club election with the following candidates:

- Candidate A
- Candidate B
- Candidate C
- Candidate D

The program should perform the following operations:

Instructions:

1. Prompt the user to enter the total number of voters (e.g., 10).
2. Use a for loop to collect votes one by one:
   - Display a voting menu with candidate options:
     1. Candidate A
     2. Candidate B
     3. Candidate C
     4. Candidate D
   - Ask each voter to enter their choice.
   - Use a switch-case structure to count the votes for each candidate.
   - If the vote is invalid (not 1 to 4), display 'Invalid vote!' and skip the count.
3. After collecting all the votes:
   - Display the vote counts for each candidate.
   - Use if-elseif structure to determine the winner (candidate with the highest votes).

4. Then, show a result visualization menu:

   1. Show Bar Chart of Votes

   2. Show Pie Chart of Votes

   3. Show Scatter Plot (for creative visualization)

   4. Exit

5. Based on the user's menu choice, display:

   - A bar chart using bar() to represent vote counts.

   - A pie chart using pie() to visualize proportions.

   - A scatter plot using scatter() (you can scatter points randomly for visual creativity).

6. Keep repeating the visualization menu until the user chooses Exit.

7. Use fprintf() for all formatted outputs, and label all plots with title(), xlabel(), and ylabel() as needed.

Reminders:

- Use input() to take all user inputs.

- Use a while true loop to manage the visualization menu.

- Use arrays to store the vote counts.

- Add appropriate grid and legends to enhance the plots.

- The program should be clean, user-friendly, and error-handled properly.