Module 7: Assignment

Matlab Programming and Plotting

Submitted by:

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Problem Statement 1:

You are a data analyst tasked with analyzing the energy consumption of an electric vehicle (EV) for different distances traveled. You have collected data on the energy consumption (in kWh) and distance traveled (in miles) for the EV model.

Objective:

Energy Consumption	20	25	30	35	40
Distance Traveled	50	100	150	200	250

Using MATLAB, you plot a graph where the x-axis represents the distance traveled (in miles) and the y-axis represents the energy consumption (in kWh)

Tasks:

To enhance the clarity of the graph:

1. Add descriptive x and y-axis labels to specify the quantities represented.
2. The data points are represented by blue circles connected by a solid line, providing a clear depiction of the relationship between distance traveled and energy consumption.
3. A title is included to summarize the purpose of the plot, providing context to the reader.
4. A legend is added to identify the data being represented, ensuring clarity and ease of interpretation.
5. Finally, you save the plot as an image file named "energy_consumption_vs_distance_plot.png" for further analysis and presentation purposes, allowing for easy sharing and reference of the insights gained from the visualization.

MATLAB coding program for Energy consumption vs distance:

```
% Data
distance = [50, 100, 150, 200, 250]; % Distance traveled in miles
energy_consumption = [20, 25, 30, 35, 40]; % Energy consumption in kWh

% Plot the data
figure;
plot (distance, energy_consumption, '-o', 'Color', 'b', 'MarkerFaceColor', 'b', 'LineWidth', 1.5);

% Enhancing the plot
Xlabel ('Distance Traveled (miles)', 'FontSize', 12); % X-axis label
ylabel ('Energy Consumption (kWh)', 'FontSize', 12); % Y-axis label
title ('Energy Consumption vs. Distance Traveled', 'FontSize', 14); % Title
legend ('Energy Consumption Data', 'Location', 'northwest'); % Legend
```

```
% Grid for better visualization
grid on;

% Display the plot
```

Result: