

Lab Title: MATLAB Control Structures - While and Switch

Objective: In this lab, you will practice working with MATLAB's control structures, specifically the while loop and the switch statement.

Prerequisites:

Basic knowledge of MATLAB.

MATLAB environment set up.

Lab Tasks:

Task 1: While Loop

Write a MATLAB script that uses a while loop to print even numbers from 2 to 20.

Create a script that calculates the factorial of a given number using a while loop. Prompt the user for input.

Task 2: Switch Statement

Write a MATLAB script to calculate the cost of a trip based on the mode of transportation.

Use a switch statement to handle different cases. The modes are: car, train, bus, and airplane. Each mode has a different cost per mile.

Create a script that translates a color code into its corresponding name using a switch statement. Prompt the user for input and handle at least five different color codes.

Additional Challenge (Optional):

Extend the cost calculation script by including an input for the number of miles and then use the switch statement to calculate the total cost.

Lab Assessment:

Successful execution of scripts that demonstrate the use of while loops and switch statements.

Proper handling of different cases and user input.

Correct results for factorial calculation and trip cost.

Lab Submission:

Submit your MATLAB scripts with comments explaining your code.