

## 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.