

## Title: Understanding MATLAB Function Concepts

Objective: In this lab, you will learn and practice fundamental concepts related to MATLAB functions. You will create your own functions, understand function inputs and outputs, and explore common function features.

### Prerequisites:

Basic knowledge of MATLAB.

MATLAB installed on your computer.

### Lab Tasks:

#### Task 1: Creating a Simple Function

Create a new function in MATLAB called `mySimpleFunction`.

This function should take two input arguments (numbers) and return their sum.

Call this function with sample inputs and display the result.

#### Task 2: Function Inputs and Outputs

Create a function named `calculateCircleArea` that takes the radius of a circle as input and returns the area of the circle.

Call the function with different radii and display the results.

#### Task 3: Function with Multiple Outputs

Create a function named `computeStatistics` that takes a vector of numbers as input.

This function should return both the mean and the standard deviation of the input vector.

Call the function with sample data and display the results.

#### Task 4: Nested Functions

Create a main function called `outerFunction`.

Inside `outerFunction`, define another function called `innerFunction`.

`innerFunction` should take two inputs, add them, and return the result.

Call `innerFunction` from `outerFunction` and display the result.

#### Task 5: Function Handles

Create a function named `applyFunction` that takes a function handle and a vector as inputs.

The function should apply the provided function to every element in the vector and return the result.

Test this function with various function handles, like `square`, `cube`, etc.

### Task 6: Anonymous Functions

Create an anonymous function that calculates the area of a triangle. The function should take base and height as inputs.

Call the anonymous function with different base and height values to calculate triangle areas.

### Task 7: Using Built-in Functions

Use MATLAB's built-in functions like max, min, and sum in a script.

Create a vector of numbers and apply these functions to it.

Submission: Prepare a MATLAB script that includes your solutions to the tasks above. Save the script as a .m file and submit it. Be sure to include comments to explain your code.