

# Assignment 01 (Due: Monday, January 25, 2016, 11 : 59 : 00pm)

CSCE 155N

## 1 Lab Objectives

- Explain how variable assignments work in MATLAB
- Execute simple MATLAB commands interactively in the command window
- Execute a MATLAB program
- Use the online [handin](#) and [webgrader](#) utilities to submit programming assignments and laboratory work

## 2 Prior to Laboratory

- Review the laboratory handout
- Read chapters 1 & 2

## 3 Topics Covered in Lab

- Concepts of data types, values, and variables
- A set of must-have commands
- Simple problem solving
- Documentation and Debugging
- Using [handin](#)

## 4 Activities/Exercises

- Several important commands  
`clc`, `clear`, `lookfor`, `whos`, `help`, and `which`
- Variable creation drills

## 4.1 Practice

- Start the MATLAB IDE Application
- Type each of the following statements into the command window. Try to give details of the output and any errors that occur.

```
var = 6;  
  
x = 5; y = 10;  
  
x = 5 y = 10  
  
input( 'Enter a value: ' );  
  
value = input( 'Enter a value: ' );  
  
disp( value );  
  
fprintf( 'The value that you entered was: %f' , value );  
  
fprintf( 'The value that you entered was: %f\n' , value );
```

- Type each of the following commands into the command window. Try to give details of the output and any errors that occur.

```
who  
  
whos  
  
home  
  
clc  
  
help pi  
  
help scatter  
  
doc scatter  
  
lookfor plot
```

## 4.2 Distance Converter

- Download the files `distanceConverter.m`, `convertDistance.m`, and `meters2yards.m`.
- In `meters2yards`, convert the value stored in `meters` into the correct number of yards and store the result in `yards`, using the formula  $1 \text{ meter} = 1.09361 \text{ yards}$
- Running `distanceConverter` should do all steps: Getting the input, converting the distance, and displaying the result.

### 4.3 Parametric Coordinate Converter

- Download the files `coordinateConverter.m`, `convertCoordinates.m`, and `polar2cartesian.m`.
- In `polar2cartesian`, convert the values stored in `rho` and `theta` into the correct X/Y coordinates and store the result in `x` and `y`, using the formula  $x = \rho \times \cos(\theta)$  and  $y = \rho \times \sin(\theta)$
- Running `coordinateConverter` should do all steps: Getting the input, converting the distance, and displaying the result.
- **Note:**  $\theta$  will be provided in degrees, but **must be converted to radians in order to be used in the above formula.**  $radians = \frac{degrees}{180} \times \pi$

## 5 webgrader and diffs

Because the webgrader will test your programs and supply the input (and handle the output), the `diff` program is being used to check for the correctness of your programs. If nothing appears in the `diff` section, that means that your program produced the correct output for the given input.

**You must run the webgrader at least once before 11 : 59 : 00pm on Tuesday night.**

### 5.1 contributions01lab.txt

- Open file `contributions01lab.txt`
- Write **your** explanation of what you and your partner each contributed to completing the lab
- Save the File

## 6 Code Documentation

Remember to document your files in the way that we did for Lab 00. It will come in handy when you look back at code after a long time, or when someone else is trying to understand what your code does.

## 7 Additional Resources

[CSE System FAQ](#)

[Request a Huskers Account](#)

[MATLAB Online Help](#)

## 8 Think About...

- What ways are there to get help while writing a program?
- What are the advantages of having your Z: drive available from both Windows and UNIX?
- When should you check your print quota? When you should check your disk quota?

## 9 Point Allocation

Component	Points
meters2yards.m	35
polar2cartesian.m	35
members01lab.txt	10
contributions01lab.txt	10
webgrader Run	10
Total	100