

Lab 01 (Due: Sunday, September 3, 2017, 11 : 59 : 00pm Central Time)

CSCE 155*N*

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:** θ 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.

5.1 members01lab.txt

At least one member must submit this file. You must submit this file if you want to run the webgrader.

1. Go to <http://cse.unl.edu/~cse155n/members/>
2. Select 01 from the **Number** menu
3. Select your name from the **User** menu
4. Click **Submit**

5.2 contributions00lab.txt

Every group member must submit this file individually.

1. Go to <http://cse.unl.edu/~cse155n/contributions/>
2. Select 01 from the **Number** menu
3. Select your name from the **User** menu
4. Select a positive value from the menu on the line below the **User** menu
5. Write **your** explanation of what you contributed to completing the lab
6. Click **Submit**

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	15
contributions01lab.txt	15
Total	100