HW 7

ENED 1090: MODELS I
Week 7 Homework

Submit Week 8 during Lab

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INSTRUCTIONS

Complete each question below by typing your answer or copying from the output in MATLAB or Excel.

This assignment is to be completed outside of class. You will submit a digital copy to your TA during the lab session next week.

!!! **To receive points for this assignment, add your name to the filename. For example, if my name is Lin Yali, I will change the filename to**

Wk07_ened1090_homework_LinYali.doc

OBJECTIVES

For this assignment, students will demonstrate

- Input Statements
- Output Statements

Each problem can be completed without using MATLAB or Octave. Attempt each one and check the result in the programming software.

PROBLEM 1

- Describe what the **input** command does
- Where does the user enter information when the program is running?

The input command is used to add an input statement.
Command window.

PROBLEM 2

- Describe what the **menu** command does
- Where does the user enter information?
- What is *special* about the resulting value from choosing an item from the menu?

The menu command is used to give options when the program is running.
Pop out window.
If you choose different item from the menu, you will get different result.

PROBLEM 3

- Describe what the **disp** command does
- How many variables or phrases can you include in each **disp** command?

The disp command is used to display the information you want to see.
Only one variable or phrase can you include in each disp command.

PROBLEM 4

- Describe what the **fprintf** command does
- List the meaning of these special characters: %s, %i, %f, %e, \n, \t

The fprintf command is used to display function that adds special formatting.
%s: inserts a word variable.
%i: inserts an integer variable.
%f: inserts a number variable with decimal.
%e: inserts a number variable in scientific format.
\n: ENTER (go to next line).
\t: insert a TAB.

PROBLEM 5

- Write an **input** command that asks the user to enter their favorite restaurant as a text (character string)
- Write an **fprintf** command that repeats the user's favorite restaurant.

```
Restaurant = input ('What is your favorite restaurant? ','s');
fprintf('The user's favorite restaurant is .',Restaurant)
```

PROBLEM 6

- Create a **menu** that lists three items that you would choose for Hot Pot.
- What value does MATLAB interpret for each item?

```
Hot Pot = menu('What would you choose for hot pot? ',beef,pork,chicken);
Matlab interpret the integer start from one for each option in the menu.
For example:
Hot Pot = menu('What would you choose for hot pot?','beef','pork','chicken');
'beef' = 1,'pork' = 2, 'chicken' = 3.
```

PROBLEM 7

MATLAB has several built-in mathematical constants. Lets construct an **fprintf** statements that will view them.

- π, circle constant — show with 9 decimal places [%0.9f]
- i, j, imaginary numbers $(-1)^{0.5}$ — show imaginary part as an integer [%i, also imag(i) or imag(j)]
- eps smallest number in MATLAB — show scientific format with 3 decimal places [%0.3e]
- flintmax largest integer in MATLAB — show as integer
  show scientific format with 2 decimal places

```
fprintf('To show circle constant with 9 decimal places: %0.9f \n',pi)
fprintf('To show imaginary part as an integer:%i \n',imag(i))
fprintf('To show smallest number in MATLAB:%0.3e \n',eps)
fprintf('To show largest integer in MATLAB:%i \n',flintmax)
```