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Section: Monday 630:800

Assignment: lab2

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**Problem 2.1** Construct a statement that will be true if x is equal to 12 or -3. (Just write the statement starting with if, no need to run it in MATLAB)

if (x == 12 || x == -3)

disp('true');

end

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**Problem 2.2***.* Write a program to add the first 100 ***even numbers***. Hint: look into the mod function.

n = 200;

sum = 0;

for ctr = 1:1:n

if mod(ctr,2) == 0

sum = sum + ctr;

end

end

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**Problem 2.3** Create an m-file and enter the example above. Run it to make sure it works properly. Modify this program so that it keeps track of the number of times the user told the computer to repeat. Display the number computer has repeated after the input. Copy/paste your m-file and a copy of the COMMAND WINDOW output.

>> kalyaniLab2

Hello Mr. Anderson!

Enter a number ~= 0 to repeat, Enter 0 to stop: 12

Hello Mr. Anderson!

Enter a number ~= 0 to repeat, Enter 0 to stop: 12

Hello Mr. Anderson!

Enter a number ~= 0 to repeat, Enter 0 to stop: 12

Hello Mr. Anderson!

Enter a number ~= 0 to repeat, Enter 0 to stop: 12

Hello Mr. Anderson!

Enter a number ~= 0 to repeat, Enter 0 to stop: 12

Hello Mr. Anderson!

Enter a number ~= 0 to repeat, Enter 0 to stop: 0

You used the program 6 times.

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**Problem 2.4** Create a ***column vector*** x using “:” that goes from 5 to 35 in steps of 7. Show your code and the command line result.

>> a = [5:5:35]'

a =

5

10

15

20

25

30

35

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**Problem 2.5** Consider matrix M and matrix N as shown on the lab manual. Enter the MATLAB commands to produce M and N. Check the output and make sure it matches the requirement as we will use these matrices in some calculations below.

>> M = [ 0 2 3 5;7 3 8 4]

M =

0 2 3 5

7 3 8 4

>> N = [ 1 1 3;4 5 6;9 4 8]

N =

1 1 3

4 5 6

9 4 8

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**Problem 2.6** Using the matrixes we have defined previously, and define a vector D as [-5.0,1.0,-3.0,3.0], calculate the result of following operation: ***A\*B, B\*C,(D+B')\*C,C\*(D+B')***. For operations that are invalid, state why they are invalid and what can you change to make the operation reasonable.

>> A \* B

ans =

80

>> B \* C

Error using

Inner matrix dimensions must agree.

* To fix this you have to make the # of rows equal to # columns transpose either C of B.

>> (D+B')\*C

Error using

Inner matrix dimensions must agree.

* To fix this you have to transpose either the (D+B’) or C

>> C\*(D+B')

ans =

1 8 5 12

2 16 10 24

3 24 15 36

4 32 20 48

5 40 25 60

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**Problem 2.7** Type the command to return the fourth element (index 4) in vector D.

>> D(4)

ans =

3

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**Problem 2.8** Write the command you would use to retrieve the number 6 from the matrix N (look back in this exercise to see where in N the number 6 is.)

>> N(2,3)

ans =

6

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**Problem 2.9** Write a single command to store the all the rows of columns 1, 2, and 3 of matrix M into a matrix named ***partOfM***

>> partOfM = M(:, 1:3)

partOfM =

0 2 3

7 3 8

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**Problem 2.10** The following set of commands won't work. Why not? Hint: Remember that the index for y must always be an integer. How would you display the second element in the vector y?

The Command won’t work because it uses the increment .5 and the increment is used in the loop to index an array. You can only have integers as an index for an array thus .5 would give an error. You could get around that by creating a counting variable that only yields integer thus your second value would be stored as y(ii) = 1 + x(ii) which equals to y(2) = 1 + x(2). Y(1,2) will equal 2.5

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**Problem 2.11** Enter the following commands in your m-\_le and run it for ***myValue*** equal to 9. What size is y and what will be in each entry of y?

y size = 1x9 entry type = double

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**Problem 2.12** Find the sizes of A and M using MATLAB. Copy/paste the commands you used and their results.

>> size(A)

ans =

1 4

>> size(M)

ans =

2 4

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