# Practice Exercise Questions

Notes 1: Consider it as fun part of your learning and don't take it as a burden or assignment with a forced deadline. Do exercise by yourself.

Notes 2: Do not consult the solutions directly, make sure you first attempt the questions by yourself and If you are unable to get it correctly than consult the solution.

Note 3: If feel difficulties in understanding the solutions, post your question in the Q/A section of the course. Do not forget to mention the question number you are querying about.

Note 4: If you feel you have some exciting questions, please inbox to me and I will add to the questions list there after review. This will help you fellows to have more practice and fun.

Note 5: **Have Fun**

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**Q:1.** Write a program that will print the stars in format given below.

```
*
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*****
*******
*********
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*******
*****
***
*
```

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**Q:2.** Given n (always odd), return output a that has concentric rings of the numbers 1 through (n+1)/2 around the center point. For instance, if n = 5, we will have the following matrix.

```
[ 3  3  3  3  3
  3  2  2  2  3
  3  2  1  2  3
  3  2  2  2  3
  3  3  3  3  3]
```

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**Q:3.** The Goldbach conjecture asserts that every even integer greater than 2 can be expressed as the sum of two primes. Write a script that will accept an even integer and then it will return primes p1 and p2 that satisfy the condition n = p1 + p2. Note that the primes are not always unique. The program should just return one such combination of the primes.

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**Q:4.** Given a positive integer n taken from the user, your program should create an n-by-n matrix in which the integers from 1 to $n^2$ wind back and forth along the rows as shown in the examples below.

N = 4

```
[1     2     3     4
8     7     6     5
9     10    11    12
16    15    14    13]
```

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**Q:5.** Write a MATLAB script that will accept an array of numeric values from the user and then return a statement 'monotonically increasing' if the elements of the input array increases monotonically (i.e. each element is larger than the previous). Otherwise return a statement stating that it is 'not monotonically increasing'.

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**Q:6.** Write a MATLAB script that will accept an integer value N from the user and then it will create a matrix A of alternating ones and zeros of the same size. For instance if the user enter 5 than it will create

```
A = [0   1   0   1   0
     1   0   1   0   1
     0   1   0   1   0
     1   0   1   0   1
     0   1   0   1   0]
```

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**Enjoy MATLAB**