Tutorial 2 (Week 3 + 4)

OBJECTIVES

- Able to use for and while loops

SECTION 1 – Number data type

<u>FOR LOOP</u>

1) Write a program to display equations using for loop statement and string format

```
1 + 1 = 2
2 + 2 = 4
3 + 3 = 6
4 + 4 = 8
5 + 5 = 10
6 + 6 = 12
7 + 7 = 14
8 + 8 = 16
9 + 9 = 18
10 + 10 = 20
```

2) Write a program to display equations using for loop statement and string format

```
 1 x  1 =    1
 2 x  2 =    4
 3 x  3 =    9
 4 x  4 =   16
 5 x  5 =   25
 6 x  6 =   36
 7 x  7 =   49
 8 x  8 =   64
 9 x  9 =   81
10 x 10 =  100
```

3) Write a program to display the following sequence of numbers using for loop statement.

```
1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10
```

```
1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10
```

4) Write a program to display the following sequence of numbers using for loop statement.

```
12, 14, 16, 18, 20.
```

```
1.2 * 1.4 * 1.6 * 1.8 * 2.0.
```

```
1; 3; 5; 7; 9.
```

5) Write a program to display the following sequence of numbers using for loop statement.

```
0
02
024
0246
02468
0246810
024681012
02468101214
0246810121416
024681012141618
02468101214161820
```

6) Study the example below carefully and write a program that works exactly like that example (the text in bold indicates the user input):

```
Enter a number (1-9): 6

Go forward:
1?
2??
3???
4????
5?????
6??????

Go backward:
------6
-----5
----4
---3
--2
-1
```

7) Study the example below carefully and write a program that works exactly like that example (the text in bold indicates the user input):

```
Enter the minimum integer: -4
Enter the maximum integer: 2

   Number     Sign          Parity
   -4         Negative      Even
   -3         Negative      Odd
   -2         Negative      Even
   -1         Negative      Odd
   0          Zero          Even
   1          Positive      Odd
   2          Positive      Even
```

<u>While LOOP</u>

8) Write a program to display the following sequence of numbers using while loop statement.

```
1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 10


2 * 4 * 6 * 8 * 10.


1; 3; 5; 7; 9.
```

9) Write a program to display equations using while loop statement and string format

```
 2 +  2 =  4
 4 +  4 =  8
 6 +  6 = 12
 8 +  8 = 16
10 + 10 = 20
```

10) Write a program that uses the **while loop** that asks the user to enter integer numbers and then displays the summary information. The user has to enter q to quit the program. The program should work as follows:

```
Enter an integer or q to quit: 5
Enter an integer or q to quit: 10
Enter an integer or q to quit: -1
Enter an integer or q to quit: 3
Enter an integer or q to quit: 0
Enter an integer or q to quit: -5
Enter an integer or q to quit: q


Summary information:
You have entered 6 integers. The sum of these numbers is 12.
There are 2 even numbers.
There are 4 odd numbers. There are 3 positive numbers. There
are 2 negative numbers.
```