

Programming I – Lab #7

Aim: Getting Familiar with the **while** loop

Topics:

1. **while** loop

Lab Questions –

Q1 – Write a code that uses only a **while** loop to print the following sequence of numbers.

5 6 7 8 9 10 11 12 13 14 15 16

```
i = 5
while (i<17):
    print(i, end=" ")
    i = i + 1
```

Q2 – Modify question (**Q1**) to print the following sequence of numbers.

3 6 9 12 15 18 21 24 27 30 33 36 39

```
i = 3
while (i<40):
    print(i, end=" ")
    i = i + 3
```

Q3 – Modify question (**Q1**) to print the following sequence of numbers.

20 19 18 17 16 15 14 13 12 11 10

```
i = 20
while (i>9):
    print(i, end=" ")
    i = i - 1
```

Q4 – Write a code that uses a **while** loop to **print odd numbers between 10 and 100** in a line, separated by an underscore (_). The program also prints the total number of odds in this range.

```
count = 0
i = 10
while (i <= 100):
    if (i%2!=0):
        print(i , end = "_")
        count = count + 1
    i = i + 1

print("\nThe total odd numbers are ",count)
```

Q5 – Write a code that asks the user to enter as many as integer numbers and then calculate the sum of the entered numbers.

(Hint – Use a **while** loop and after entering each number by the user, continuously ask them if they want to enter another number.)

```
sum = 0
while (True):
    x = int(input("Enter a number: "))
    print("Your entered number is:",x)
    sum = sum + x
    message = input("Do you continue entering another number? (yes/no)")
    if (message=='no'):
        break
print("Sum of entered numbers is: ", sum)
```

Q6 – Write a code that allows the user to guess a secret number between 1 and 100. The program should let the user enter a number until they guess the correct number. (Suppose that the secret number is 67.)

(Both of the following codes are accepted.)

```
secret_number = 67

while (True):
    user_guess = int(input("Guess a number between 1 and 100: "))

    if (user_guess == secret_number):
        print("Congrts! You guessed the correct number.")
        break
    else:
        print("Try Again!")
```

```

secret_number = 67
flag = True
while (flag):
    user_guess = int(input("Guess a number between 1 and 100: "))

    if (user_guess == secret_number):
        print("Congrats! You guessed the correct number.")
        flag = False
    else:
        print("Try Again!")

```

Q7 – Write a code that uses a **while** loop to print the multiplication table (1 to 10) as follows:

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100

```

i = 1
while (i<=10):
    j = 1
    while (j<=10):
        mult = i*j
        print(mult, end="\t")
        j = j + 1
    i = i + 1
    print("\n")

```