Week2

Q1. Print Numbers from 1 to 5 using For Loop

```
for i in range(5):
    print(i+1)
```

```
1
2
3
4
5
```

Q2. Write a program to print each item in a shopping cart

```
cart = ["Apples","Bananas","Milk","Bread"]
for item in cart:
    print(" You brought: ",item)
```

```
 You brought:  Apples
 You brought:  Bananas
 You brought:  Milk
 You brought:  Bread
```

Q3. Write a program to print a countdown timer from 5 using a while loop

```
cnt=5
while cnt>0:
    print("Timer: ", cnt)
    cnt-=1
print("Time's up!!")
```

```
Timer:  5
Timer:  4
Timer:  3
Timer:  2
Timer:  1
Time's up!!
```

Q4. Write a program to take a password as input and verify if it is correct giving user 3 tries

```
attempts = 0
while attempts<3:
    pwd = input("Enter Password: ")
    if pwd == "Python123":
        print("Access Granted!!")
        break
    else:
        print("Try Again!!")
    attempts+=1

if (attempts>=3):
    print("Too many incorrect attempts!!!")
```

```
Enter Password: Pratyush
Try Again!!
Enter Password: Python123!!!
Try Again!!
Enter Password: Python123
Access Granted!!
```

Q5. Write a program to print even numbers between 2 and 20

```
print("Even Nos.: ",end=" ")
for  i in range(2,20,2):
    print(i,end=" ")
```
```
Even Nos.:  2 4 6 8 10 12 14 16 18
```

Q6. Write a program to print squares of first 5 numbers

```
for i in range(5):
    print("Square of ",i+1," = ",(i+1)**2)
```
```
Square of  1  =  1
Square of  2  =  4
Square of  3  =  9
Square of  4  =  16
Square of  5  =  25
```

Q7. Write a program to print items in a list and stop when we find an item

```
items = ["pen","notebook","marker","eraser"]
for item in items:
    if item == "eraser":
        print("Eraser found!")
        break
    print("Checking: ",item)
```
```
Checking:  pen
Checking:  notebook
Checking:  marker
Eraser found!
```

Q8. Write a program to check for a valid input in a list of scores

```
scores = [85,90,76,-10,95]
for score in scores:
    if score<0 or score>100:
        print("Invalid score: Upload stopped")
        break
    print("Valid Score: ", score)
```
```
Valid Score:  85
Valid Score:  90
Valid Score:  76
Invalid score: Upload stopped
```

Q9. Write a program to print marks from a list but skip absentees

```
marks =[45,50,"A",67,80]
for m in marks:
    if m=="A":
        continue
    print("Scored: ",m)
```
```
Scored:  45
Scored:  50
Scored:  67
Scored:  80
```

Q10. Write a program to print items in a list but skip unavailable items

```python
items= ["milk","bread","Out of Stock","butter"]
for item in items:
    if item=="Out of Stock":
        continue
    print("Adding to cart: ", item)
```

```
Adding to cart:  milk
Adding to cart:  bread
Adding to cart:  butter
```

Q11. Write a program to print numbers from 1 to 5 but skip 2

```python
for i in range(1,6):
    if i==2:
        pass
    else:
        print("Processing:",i)
```

```
Processing: 1
Processing: 3
Processing: 4
Processing: 5
```

Q12. Write a program to print characters in a string

```python
text = "python123"
for char in text:
    if char.isdigit():
        pass
    else:
        print("letter: ",char)
```

```
letter:  p
letter:  y
letter:  t
letter:  h
letter:  o
letter:  n
```

Q13. Write a program to print squares of all numbers from 0 to 10

```python
for i in range(11):
    print("Square of ",i," = ",i**2)
```

```
Square of  0  =  0
Square of  1  =  1
Square of  2  =  4
Square of  3  =  9
Square of  4  =  16
Square of  5  =  25
Square of  6  =  36
Square of  7  =  49
Square of  8  =  64
Square of  9  =  81
Square of  10  =  100
```

Q14. Write a program to find sum of all even numbers from 0 to 10

```python
sum=0
for  i in range(0,10,2):
    sum+=i
print("Sum is: ",sum)
```

```
Sum is:  20
```

Q15. Write a program to read three numbers (a,b,c) and check how many numbers between 'a' and 'b' are divisible by 'c'

```
a = int(input("Enter a: "))
b = int(input("Enter b: "))
c = int(input("Enter c: "))
cnt=0
for i in range(a,b+1):
    if i %c ==0:
        cnt+=1
        print(i,' is divisibvle by ', c)
print(cnt," Numbers are divisible by ",c)
```

```
Enter a: 10
Enter b: 20
Enter c: 2
10  is divisibvle by  2
12  is divisibvle by  2
14  is divisibvle by  2
16  is divisibvle by  2
18  is divisibvle by  2
20  is divisibvle by  2
6  Numbers are divisible by  2
```

Q16. Write a program to read a number and print its binary representation

```
n = int(input("Enter a number:"))
print("Binary is:", bin(n)[2:])
```

```
Enter a number:21
Binary is: 10101
```

Q17. Write a program to print factorial of a given number

```
i=int(input("Enter the number: "))
fact=1
while(i>0):
    fact*=i
    i-=1
print("Factorial: ",fact)
```

```
Enter the number: 7
Factorial:  5040
```

Q18. Write a program to print first 10 numbers of fibonacci series

```
a,b=0,1
print(a,b,sep=" ",end=" ")
for i in range(8):
    print(a+b,end=" ")
    a,b=b,a+b
```

```
0 1 1 2 3 5 8 13 21 34
```

Q19. Write a program to read a number and print a right triangle using "*"

```
n = int(input("Enter a number: " ))
for i in range(1,n+1):
    print("*"*i)
```

```
Enter a number: 5
*
**
***
****
*****
```

Q20. Write a program to print two columns of number where first column starts from 1 and increments to 99 while second column starts at 99 and decrements to 1

Sample output:

- 1--9
- 2--98
- 3--97
- ...
- 98--2
- 99--1

```
for i in range(1,100):
    print(i,"--",100-i)
```

```
1 -- 99
2 -- 98
3 -- 97
4 -- 96
5 -- 95
6 -- 94
7 -- 93
8 -- 92
9 -- 91
10 -- 90
11 -- 89
12 -- 88
13 -- 87
14 -- 86
15 -- 85
16 -- 84
17 -- 83
18 -- 82
19 -- 81
20 -- 80
21 -- 79
22 -- 78
23 -- 77
24 -- 76
25 -- 75
26 -- 74
27 -- 73
28 -- 72
29 -- 71
30 -- 70
31 -- 69
32 -- 68
33 -- 67
34 -- 66
35 -- 65
36 -- 64
37 -- 63
38 -- 62
39 -- 61
40 -- 60
41 -- 59
42 -- 58
43 -- 57
44 -- 56
45 -- 55
46 -- 54
47 -- 53
48 -- 52
49 -- 51
50 -- 50
51 -- 49
52 -- 48
53 -- 47
54 -- 46
55 -- 45
56 -- 44
57 -- 43
58 -- 42
```

Q21. Write a program to check whether the given number is prime or not

```python
n=int(input("Enter the number: "))
isPrime=True
for i in range(2,int(n**0.5)):
    if n%i==0:
        isPrime=False
        break

if isPrime:
    print(n," is Prime")
else:
    print(n," is not Prime")
```
```
Enter the number: 31
31  is Prime
```

Q22. Write a program to print all prime numbers between 0 and 100, and also print how many prime numbers are found

```python
def isPrime(n):
    for i in range(2,int(n**0.5)):
        if n%i==0:
            return False
    return True

print("Prime Nos. are: ",end=" ")
for i in range(100):
    if isPrime(i):
        print(i,end=" ")
```
```
Prime Nos. are:  0 1 2 3 4 5 6 7 8 9 11 13 15 17 19 23 25 29 31 35 37 41 43 47 49 53 59 61 67 71 73 79 83 89 97
```