Day 12 (16/08/23): (For, While, Range, Break, Continue, Odd/even using if and for)

Python Keywords: Keywords are used to specify the nature the function the user would like to perform. Example: If, Else, Elif, For, While Etc…

a) While Loop:

We can execute a set of statements as long as condition is true. While is used mostly for number. 'i' in python is refers iterator variable.

Syntax:

While (condition):
    Print (statement)
    Increment

Code:

```
i=int(input("Enter the Initial Value: "))
v=int(input("Enter the Increment Value: "))
a=int(input("Enter the Higher Limit: "))
while i<a:
    print(i)
    i+=v
```

Output:

Enter the Initial Value: 10
Enter the Increment Value: 5
Enter the Higher Limit: 50

10
15
20
25
30
35
40
45

Notes: Problem Solving using While loop in python.

b) Break Statement:

Break is used to stop the loop while the condition is true.

Syntax:

While (condition):
    Print (statement)
      conditional (statement)L
          break
    Increment

Code:

```
k=int(input("Enter the Initial Value: "))
w=int(input("Enter the Increment Value: "))
c=int(input("Enter the Higher Limit: "))
d=int(input("Enter the Break Value: "))
while k<c:
    print(k)
    if k==d:
        break
    k+=w
```

Output:

Enter the Initial Value: 10
Enter the Increment Value: 5
Enter the Higher Limit: 50
Enter the Break Value: 35

10
15
20
25
30
35

c) Continue:

Continue is used to skip the specified values in the arranged sequence of values. Initial value will not be displayed, instead adds the last digit (higher value limit), only if applicable.

Syntax:

While (condition):
    Increment
        conditional (statement)
            continue
    Print (statement)

Code:

```
l=int(input("Enter the Initial value: "))
x=int(input("Enter the Increment Value: "))
e=int(input("Enter the Higher Limit: "))
f=int(input("Enter the Skip value: "))
while l<e:
    l+=x
    if l==f:
        continue
    print(l)
```

Output:

Enter the Initial value: 10
Enter the Increment Value: 5
Enter the Higher Limit: 50
Enter the Skip value: 25
15
20
30
35
40
45
50

For Loop:

Iterating over a sequence. Iterating variable name in declaration variable name. Used to access data.

Syntax:

For iterable_variable_name in declaration_var_name:
    Print(iterable_variable_name)

Code:

```
names=["a","b","c","d","e","f"]
for l in names:
    print(l)
```

Output:

a
b
c
d
e

a) Break:

Code:

```
names=["a","b","c","d","e","f"]
print(names)
m=input("Enter the Break Value: ")
for n in names:
    print(n)
    if n==m:
        break
```

Output:
2) For:
a) Break:

['a', 'b', 'c', 'd', 'e', 'f']
Enter the Break Value: d
a
b
c
d

b) Conitnue:

Code:

```
print(names)
o=input("Enter the Skip Value: ")

for p in names:
    if p==o:
        continue
    print(p)
```

Output:
['a', 'b', 'c', 'd', 'e', 'f']
Enter the Break Value: d
a
b
c
e
f

3) Range:
Syntax:
For var in range (start, end, step):
Print(statement)

Code:

```
for q in range(5): #(0-4)
    print(q)
r=int(input("Enter the Initial digit (Numerical): "))
s=int(input("Enter the Final digit (Numerical): "))
t=int(input("Enter the Step digit (Numerical): "))
for u in range(r,s,t):
    print(u)
```

Output:
c) Increments using range:
0
1
2
3
4
Enter the Initial digit (Numerical): 25
Enter the Final digit (Numerical): 50
Enter the Step digit (Numerical): 5
25
30
35
40
45

c) Odd/even using if & for:
Code:

```
nums=[1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20]
v=[]
w=[]
print("The Numbers in the List are")
print(nums)
for x in nums:
    print(x)
    if x%2==0:
        w.append(x)
    else:
        v.append(x)
print(f"Odd:{v}")
print(f"Even:{w}")
```

Output:
The Numbers in the List are
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20]

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

Odd: [1, 3, 5, 7, 9, 11, 13, 15, 17, 19]
Even: [2, 4, 6, 8, 10, 12, 14, 16, 18, 20]