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Assignment 1

Q1:

Program:

```
ml = [1, 2, 5, -8, 11, 9, -4, 3, -21, 11, 50, -14, 2, -8, 17]
print(ml)

sum=0
for i in ml:
    sum+=i
print("Sum =", sum)

print("Largest Number =", max(ml))

ml2 = list(set(ml))
print("List after removing duplicate items:-", ml2)

pml = []
nml = []
for j in ml:
    if j >= 0:
        pml.append(j)
    else:
        nml.append(j)
print("Positive numbers form list are:-", pml)
```

```
print("Negative numbers from list are:-", nml)


eml = []
oml = []
for k in ml:
    if k % 2 == 0:
        eml.append(k)
    else:
        oml.append(k)
print("Even numbers from list are:-", eml)
print("Odd numbers from list are:-", oml)
```

Output:

```
D:\Python\venv\Scripts\python.exe D:\Python\List.py
[1, 2, 5, -8, 11, 9, -4, 3, -21, 11, 50, -14, 2, -8, 17]
Sum = 56
Largest Number = 50
List after removing duplicate items:- [1, 2, 3, 5, 9, 11, -21, 17, 50, -14, -8, -4]
Positive numbers form list are:- [1, 2, 5, 11, 9, 3, 11, 50, 2, 17]
Negative numbers from list are:- [-8, -4, -21, -14, -8]
Even numbers from list are:- [2, -8, -4, 50, -14, 2, -8]
Odd numbers from list are:- [1, 5, 11, 9, 3, -21, 11, 17]
```

Q2:

Program:

```
str = "Hello Python!"
print(str)
print("Reverse String:-", str[::-1])
```

```
vowels = 0
constants = 0
for i in str:
    if i in 'aeiou':
        vowels+=1
    else:
        constants+=1
print("Vowels in string are:-", vowels)
print("Constants in string are:-", constants)

print("Number of letters in", str, "are", len(str))

print(str.swapcase())

lower = 0
upper = 0
numeric = 0
special = 0
for j in str:
    if j.islower():
        lower+=1
    elif j.isupper():
        upper+=1
    elif j.isnumeric():
        numeric+=1
    else:
        special+=1
```

```
print("Lower characters in",str,"are", lower)
print("Upper characters in",str,"are", upper)
print("Numeric characters in",str,"are", numeric)
print("Special characters in",str,"are", special)
```

Output:

```
D:\Python\venv\Scripts\python.exe D:\Python\string.py
Hello Python!
Reverse String:- !nohtyP olleH
Vowels in string are:- 3
Constants in string are:- 10
Number of letters in Hello Python! are 13
hELLO pYTHON!
Lower characters in Hello Python! are 9
Upper characters in Hello Python! are 2
Numeric characters in Hello Python! are 0
Special characters in Hello Python! are 2
```

Q3:

Program:

```
md = {"Mango":12, "Apple":5, "Watermelon":1}
print(md)

if "Mango" in md:
    print("Key 'Mango' exists in Dictionary")
else:
    print("Key 'Mango' doesn't exists in Dictionary")

for i,j in md.items():
```

```
    print(i,":",j)


dict1 = {"Cherry": 2, "banana": 6}
dict2 = {"orange": 4, "pear": 5}
concat_dict = {**dict1, **dict2}
print("Concatenated dictionary:", concat_dict)


sum = sum(md.values())
print("Sum of values in Dictionary:", sum)


max = max(md.values())
min = min(md.values())
print("Maximum value in Dictionary", max)
print("Minimum value in Dictionary", min)
```

Output:

```
D:\Python\venv\Scripts\python.exe D:\Python\dictionary.py
{'Mango': 12, 'Apple': 5, 'Watermelon': 1}
Key 'Mango' exists in Dictionary
Mango : 12
Apple : 5
Watermelon : 1
Concatenated dictionary: {'Cherry': 2, 'banana': 6, 'orange': 4, 'pear': 5}
Sum of values in Dictionary: 18
Maximum value in Dictionary 12
Minimum value in Dictionary 1
```

Q4:

Program:

```
print("Natural Numbers are:- ")
for i in range(1, 11):
    print(i, end=" ")

print("\nEven Numbers in Reverse Order are:- ")
for j in range(20, 0, -2):
    print(j, end=" ")

n= int(input("\nEnter number to display it's table: "))
print("Table of",n)
for k in range(1,11):
    print(f"{n} x {k} = {n*k}")

print("\nFirst 10 prime numbers:")
count = 0
num = 2
while count < 10:
    prime = True
    for i in range(2, int(num/2) + 1):
        if num % i == 0:
            prime = False
            break
    if prime:
        print(num, end=" ")
        count += 1
    num += 1
```

Output:

```
Natural Numbers are:-
1 2 3 4 5 6 7 8 9 10

Even Numbers in Reverse Order are:-
20 18 16 14 12 10 8 6 4 2

Enter number to display it's table: 55
Table of 55
55 x 1 = 55
55 x 2 = 110
55 x 3 = 165
55 x 4 = 220
55 x 5 = 275
55 x 6 = 330
55 x 7 = 385
55 x 8 = 440
55 x 9 = 495
55 x 10 = 550

First 10 prime numbers:
2 3 5 7 11 13 17 19 23 29
```

Q5:

Program:

```
for a in range(1,5):
    for b in range(1,a+1):
        print(b, end=" ")
    print()
print("\n")

for c in range(5, 0, -1):
```

```
    for d in range(c):
        print("*", end=" ")
    print()
print("\n")

for e in range(5, 0, -1):
    for f in range(e):
        print(e, end=" ")
    print()
print("\n")

ch = 65
for g in range(1, 6):
    for h in range(g):
        print(chr(ch), end=" ")
        ch+=1
    print()
```

Output:

```
D:\Python\venv\Scripts\python.exe D:\Python\pattern.py
1
1 2
1 2 3
1 2 3 4



* * * * *
* * * *
* * *
* *
*



5 5 5 5 5
4 4 4 4
3 3 3
2 2
1



A
B C
D E F
G H I J
K L M N O
```