SHRI VILEPARLE KELAVANI MANDAL'S
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC ACCREDITED with "A" GRADE (CGPA : 3.18)

DEPARTMENT OF INFORMATION TECHNOLOGY

COURSE CODE: DJ19ITL406

COURSE NAME: Programing Laboratory 2 (Python) **CLASS:** SYBTECH

EXPERIMENT NO. 4

CO/LO: CO1, CO2.

AIM / OBJECTIVE:

Write python programs to demonstrate applications of different decision-making statements

DESCRIPTION OF EXPERIMENT:

Python Conditions and **If** statements

Python supports the usual logical conditions from mathematics:

- Equals: a == b
- Not Equals: a != b
- Less than: a < b
- Less than or equal to: a <= b
- Greater than: a > b
- Greater than or equal to: a >= b

These conditions can be used in several ways, most commonly in "if statements" and loops.An "if statement" is written by using the if keyword.

Elif

The elif keyword is pythons way of saying "if the previous conditions were not true, then try this condition".

Else

The else keyword catches anything which isn't caught by the preceding conditions.

Nested If

You can have if statements inside if statements, this is called *nested* if statements.

SHRI VILEPARLE KELAVANI MANDAL'S
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC ACCREDITED with "A" GRADE (CGPA : 3.18)

while Loop

With the while loop we can execute a set of statements as long as a condition is true.

break Statement

With the break statement we can stop the loop even if the while condition is true:

continue Statement

With the continue statement we can stop the current iteration, and continue with the next:

For Loops

A for loop is used for iterating over a sequence (that is either a list, a tuple, a dictionary, a set, or a string).

range() Function

To loop through a set of code a specified number of times, we can use the range() function,

The range() function returns a sequence of numbers, starting from 0 by default, and increments by 1 (by default), and ends at a specified number.

QUESTIONS:

1. WAP to Reverse a Number

```
num=int(input("enter a number"))
temp=num
rev=0
while(temp>0):
    d=temp%10
    rev=10*rev+d
    temp=temp//10

print(num)
print(rev)
```

```
12345
54321
```

SHRI VILEPARLE KELAVANI MANDAL'S
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC ACCREDITED with "A" GRADE (CGPA : 3.18)

2. WAP to read number N and print natural numbers summation pattern

```
sonn=[]
sonn.append(0)
n=int(input("enter n : "))
for i in range (1,n+1):
    sonn.append(sonn[i-1]+i)
sonn.remove(0)
print(sonn)
```

```
[1, 3, 6, 10, 15]
```

3. WAP to determine all Pythagorean triplets

```
limit=int(input("Enter upper limit:"))
c=0
m=2
while(c<limit):
    for n in range(1,m+1):
        a=m*m-n*n
        b=2*m*n
        c=m*m+n*n
        if(c>limit):
            break
        if(a==0 or b==0 or c==0):
            break
        print(a,b,c)
    m=m+1
```

```
3 4 5
8 6 10
5 12 13
15 8 17
12 16 20
```

SHRI VILEPARLE KELAVANI MANDAL'S
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC ACCREDITED with "A" GRADE (CGPA : 3.18)

4. WAP, You are given a number A which contains only digits 0's and 1's. Your task is to make all digits same by just flipping one digit (i.e. 0 to 1 or 1 to 0) only. If it is possible to make all the digits same by just flipping one digit then print 'YES' else print 'NO'.

```
number=int(input("enter the number"))

num=str(number)
n1=num.count("1")
n0=num.count("0")
print("number : ",num)
if(n1==1 or n0==1):
    print("YES")
else:
    print("NO")
```

```
...   number :  11111011111
      YES
```

5. WAP, Given a list A of N distinct integer numbers, you can sort the list by moving an element to the end of the list. Find the minimum number of moves required to sort the list using this method in ascending order.

```
l=[]
n=int(input("enter n"))
for i in range(0,n):
    e=int(input())
    l.append(e)
print(l)
j=n
count=0
while(j>=1):
    m=max(l[0:j])
    indx=l.index(m)
    if(indx!=j-1):
        temp=l[indx]
        l[indx]=l[j-1]
        l[j-1]=temp
        count=count+1

    j=j-1
```

```
print("count=",count)
```

```
[1, 5, 2, 4, 3]
count= 2
```

OBSERVATIONS / DISCUSSION OF RESULT:

IF and else block allows the output of the variable to be conditionally determined. For all If-else statements, the conditions must be defined as well as the actions that should occur when those conditions are met.As observed in question 3) it also helps in stopping a program if a condition is met

CONCLUSION:

There comes situations in real life when we need to make some decisions and based on these decisions, we decide what should we do next. Similar situations arise in programming also where we need to make some decisions and based on these decisions we will execute the next block of code.This is done with the help of if-else block.

We have successfully implemented the above programmes with the help of if-else block.

REFERENCES:

Website References:

[1] https://www.w3schools.com/python