EXPERIMENT NO. 1.A

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Division:D1EC

Roll no:33

Date:- 29th Jan. 2024

PRACTICAL NO.1-

```
# PRINT STATEMENT
site_name = 'Vivekanand Education Society'
print(site_name)

# assigning a new value to site_name
site_name = 'VESIT'

print(site_name)

a, b, c = 5, 3.2, 'Hello'
site1 = site2 = 'vesit.ves.ac.in'

print(a) # prints 5
print(b) # prints 3.2
print(c) # prints Hello

print(site1) # prints
print(site2) # prints
```

```
Vivekanand Education Society
VESIT
5
3.2 Hello
vesit.ves.ac.in
Vesit.ves.ac.in
```

PRACTICAL NO.2-

```
# IDENTIFY TYPES

num1 = 5

print(num1, 'is of type', type(num1))



num2 = 5.42

print(num2, 'is of type', type(num2))



num3 = 8+2j

print(num3, 'is of type', type(num3))
```

```
5 is of type <class 'int'>
5.42 is of type <class 'float'>
(8+2j) is of type <class 'complex'>
```

PRACTICAL NO.3-

```
# PRINT DATA OF TYPES

num1 = int(2.3)

print(num1) # prints 2



num2 = int(-2.8)

print(num2) # prints -2



num3 = float(5)

print(num3) # prints 5.0



num4 = complex('3+5j')

print(num4) # prints (3 + 5j)
```

```
2 -
2
5.0
(3+5j)
```

PRACTICAL NO.4-

```
# ADDITION OF TWO NUMBERS

# This program adds two numbers



num1 = 1.5

num2 = 6.3



# Add two numbers

sum = num1 + num2



# Display the sum
print('The sum of {0} and {1} is {2}'.format(num1, num2, sum))
```

```
The sum of 1.5 and 6.3 is 7.8
```

PRACTICAL NO.5-

```
# DATA FROM USER

#Add Two Numbers With User Input



# Store input numbers

num1 = input('Enter first number: ')

num2 = input('Enter second number: ')



# Add two numbers

sum = float(num1) + float(num2)



# Display the sum

print('The sum of {0} and {1} is {2}'.format(num1, num2, sum))

print('the sum of', num1 + ' and', num2 + ' is', sum)
```

```
Enter first number: 2
Enter second number: 5

The sum of 2 and 5 is 7.0
the sum of 2 and 5 is 7.0
```

PRACTICAL NO.6-

```
# Arithmetic Operators in Python


a = 7

b = 2


# addition

print ('Sum: ', a + b)


# subtraction

print ('Subtraction: ', a - b)

# multiplication

print ('Multiplication: ', a * b)


# division

print ('Division: ', a / b)


# modulo
```

```
print ('Modulo: ', a % b)



# a to the power b

print ('Power: ', a ** b)
```

```
Sum: 9
Subtraction: 5
Multiplication: 14
Division: 3.5
Modulo: 1
Power: 49
```

PRACTICAL NO.7-

```
# ASSIGNMENT OPERATOR



# assign 10 to a

a = 10



# assign 5 to b

b = 5



# assign the sum of a and b to a

a += b       # a = a + b



print(a
)
```

```
15
```

PRACTICAL NO.8-

```
#Comparison Operator

a = 5

b = 2

# equal to operator
print('a == b =', a == b)

# not equal to operator
print('a != b =', a != b)

# greater than operator
print('a > b =', a > b)

# less than operator
print('a < b =', a < b)

# greater than or equal to operator
print('a >= b =', a >= b)

# less than or equal to operator
print('a <= b =', a <= b)
```

```
a == b = False
a != b = True
```

```
a > b = True a

< b = False a

>= b = True a

<= b = False
```

PRACTICAL NO.9-

```
# Identity Operator


x1 = 5

y1 = 5

x2 = 'Hello'

y2 = 'Hello'

x3 = [1,2,3]

y3 = [1,2,3]


print(x1 is not y1)   # prints False


print(x2 is y2)   # prints True


print(x3 is y3)   # prints False
```

```
False

True

False
```

PRACTICAL NO.10-

```
# Membership Operator
message = 'Hello world'
dict1 = {1:'a', 2:'b'}

# check if 'H' is present in message string
print('H' in message)  # prints True

# check if 'hello' is present in message string
print('hello' not in message)  # prints True

# check if '1' key is present in dict1
print(1 in dict1)  # prints True

# check if 'a' key is present in dict1
print('a' in dict1)  # prints False
```

```
True
True
True
False
```

EXPERIMENT NO.1.B-

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PRACTICAL NO.1-

```
# IF ELSE

# Store input numbers

num = input('Enter first number: ')

if int(num) > 0:

    print('Positive number')

else:

    print('Negative number')

print('This statement is always executed')
```

```
Enter first number: 12
Positive number
This statement is always executed
```

PRACTICAL NO.2-

```
# NESTED IF ELSE


# outer if statement

num1 = int(input('Enter first number: '))

num2 = int(input('Enter Second number:'))

num3 = int(input('Enter third number: '))


if (num1 > num2):

    # inner if statement

    if (num1 > num3):

        print('Larger is', num1)


    # inner else statement

    else:

        print('Larger is', num3)
```

```
# outer else statement

else:

    if (num2 > num3):

        print('Larger is', num2)


    # inner else statement

    else:

        print('Larger is', num3)
```

```
Enter first number: 45
Enter Second number:18
Enter third number: 7
Larger is 45
```

PRACTICAL NO.3-

```
# IF STATEMENT

marks = int(input("Enter the marks? "))

if marks > 85 and marks <= 100:

   print("Congrats ! you scored grade A ...")

elif marks > 60 and marks <= 85:

   print("You scored grade B + ...")

elif marks > 40 and marks <= 60:

   print("You scored grade B ...")

elif (marks > 30 and marks <= 40):

   print("You scored grade C ...")

else:

   print("Sorry you are fail ?")
```

```
Enter the marks? 90
Congrats ! you scored grade A ...
```

EXPERIMENT NO. 1.C-

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PRACTICAL NO.1-

```
# PRINT NUMBERS USING FOR LOOP

#EXAMPLE1

#print of first 10 numbers

for val in range(1,10):

    print(val)

    val+=val

print()    # for blank row



#EXAMPLE 2

#print of first even numbers between 50
```

```
print()    # for blank row

for val in range(1,50):

    if val%2==0:

        print(val)
```

```
1
2
3
4
5
6
7
8
9
```

```
2 4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
```

```
42
44
46
48
```

PRACTICAL NO.2-

```
# FOR LOOP WITH LIST

languages = ['Swift', 'Python', 'Go', 'JavaScript']



# access items of a list using for loop

for language in languages:

    print(language)



digits = [0, 1, 5]



for i in digits:

    print(i)

else:

    print("No items left.")
```

```
Swift
Python
```

```
Go
JavaScript
0
1
5 No items
left.
```

PRACTICAL NO.3-

```
# FOR LOOP TO CREATE LIST2

lst =[]

size=int(input("enter the size"))

for i in range(0,size):

    print("enter number:",i+1)

    x=int(input())

    lst.append(x)
```

```
print(lst
)
```

```
enter the size4
enter number: 1
10 enter
number: 2
0
enter number: 3
30 enter
number: 4
40
[10, 0, 30, 40]
```

PRACTICAL NO.4-

```
# PRINT RANGE USING WHILE LOOP

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

end=int(input("enter the last number"))

while start <= end:

    if start % 2 == 0:

        print(start)

    start+=1
```

```
enter the start number1
enter the last number5
2
4
```

PRACTICAL NO.5-

```
# Python program to square every number of a list

# initializing a list

list_ = [3, 5, 1, 4, 6]

squares = []

# programing a while loop

while list_: # until list is not empty this expression will give

boolean True after that False
```

```
    squares.append( (list_.pop())**2)
```

```
# print the squares
print( squares )
```

```
[36, 16, 1, 25, 9]
```

```
# REVERSE THE NUMBER USING WHILE LOOP
num = 1234
reversed_num = 0

while num != 0:
    digit = num % 10
    reversed_num = reversed_num * 10 + digit
    num //= 10

print("Reversed Number: " + str(reversed_num))
```

```
Reversed Number: 4321
```

PRACTICAL NO.7-

```
# MULTIPLE LOOP SORTED NUMBERS

lst =[]

size=int(input("enter the size "))

for i in range (0,size):

    print("Enter number:",i+1)

    x=int(input())

    lst.append(x)
print("unsorted List")
print(lst)
for i in range(0,size):
    for j in range(0,size-1):
        if lst[j] > lst[j+1]:
            temp=lst[j+1]
            lst[j+1]=lst[j]
            lst[j]=temp

print("sorted list")
print(lst)
```

```
enter the size 3
Enter number: 1
10
Enter number: 2
30
Enter number: 3
20 unsorted
```

```
List [10, 30,
20] sorted list
[10, 20, 30]
```

EXPERIMENT NO. 1.D

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PRACTICAL NO.1-

```
# PYTHON FUNCTION

def div(a,b):

    return a/b

a=int(input("enter A "))

b=int(input("enter B "))

c=div(a,b)

print(c)
```

```
enter A 34
enter B 17
2.0
```

PRACTICAL NO.2-

```
# Implmentation of Decortor Function
def check(func):

  def inside(a,b):

    if b == 0:

      print("Can't divide by 0")

      return

    return func(a,b)

  return inside

@check

def div(a,b):

    return a/b
```

```
a=int(input("enter A: "))

b=int(input("enter B: "))

print (div(a,b))
```

```
enter A: 30
enter B: 10
3.0
```

PRACTICAL NO.3-

```
# Iterator in python
#a Python iterator object must implement two special methods,

__iter__() and __next__()
```

```
a = [4, 7, 0, 15, 40, 9]

for element in a:

    print(element)



print("_____________"
)

iterator=iter(a
)



for x in iterator:

    print(x)

iterator=iter(a
)

print("__________"
)

print(next(iterator)
)

print(next(iterator)
)

print(next(iterator)
)
```

```
print(next(iterator)
)

print(next(iterator)
)

print(next(iterator)
)
```

```
4
7
0
15
40
9

_____________
4
7
0
15
40
9

__________
4
7
0
15
40
9
```

PRACTICAL NO.4-

```
# GENERATOR IN PYTHON


def fib(size):
```

```
    a,b=0,1
    while True:
        c=a+b
        if c < size:
            yield c
            a=b
            b=c
        else:
            break

x=int(input("enter size"))
gen=fib(x)
try:
  print(next(gen))
  print(next(gen))
  print(next(gen))
```

```
    print(next(gen))

    print(next(gen))

    print(next(gen))

    print(next(gen))

except:

    StopIteration

    True
```

```
enter size6
1
2
3
5
```