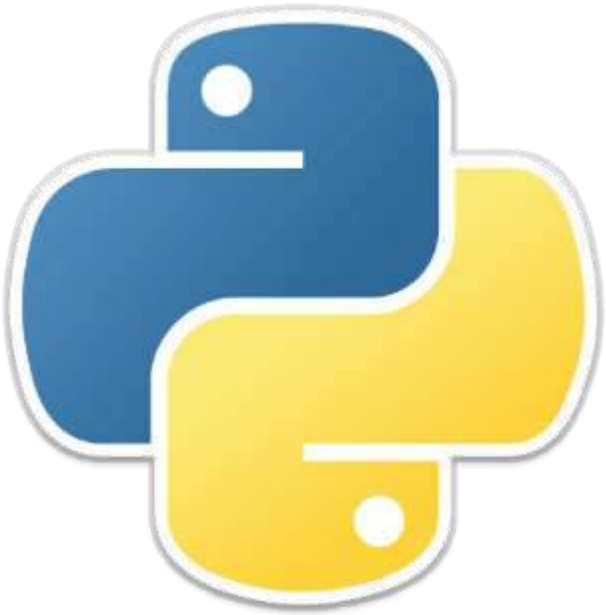

Python Practical's

TASK 4

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Practical 1

Write a python function for calculating cube of the number. Define a second function called by_three that takes an argument called Number. If that number is divisible by 3, by_three should call cube(number) And return its result. Otherwise, by_three should return false.

```
# functions start
def cube(number):
    return number*number*number

def by_three (number):
    if number%3==0:
        return cube (number)
    else:
        return False
# functions end
```

Output:

```
PS D:\LEARNING\COLLAGE\SAM7\Python\collage\Task4> py practical1.py
Enter Number: 3
The result is 27
PS D:\LEARNING\COLLAGE\SAM7\Python\collage\Task4>
```

Practical 2

Write a python function to print all the prime numbers between the specific range given by user.

```
# getPrimes Start
def getPrimes (start, end):
    for number in range (start, end+1):
        isPrime=True
        for i in range (2, number):
            if number %i==0:
                isPrime=False
        if isPrime:
            print(number, end=" ")
# getPrimes End
print("Enter range To get Prime Numbers! ")
start=int(input("start: "))
end=int(input("end: "))
getPrimes (start=start, end=end)
```

Output:

```
PS D:\LEARNING\COLLAGE\SAM7\Python\collage\Task4> py practical2.py
Enter range To get Prime Numbers!
start: 1
end: 10
1 2 3 5 7
```

Practical 3

Write a menu driven program for creating calculator with arithmetic Operations. Create functions for +,-,* and / and call those functions in switch Case.

```python
# functions start
def sum(num1,num2):
    return num1+num2

def minus(num1,num2):
    return num1-num2

def multiply(num1,num2):
    return num1*num2

def devide(num1,num2):
    return num1/num2
# functions end

num1=int(input("Enter Num 1: "))
num2=int(input("Enter num 2: "))
ans=0
operator=input("Which Operation you want to perform? [+] [-][*][/] : ")

match operator:
    case '+':
        ans=sum(num1, num2)
    case '-':
        ans=minus(num1, num2)
    case '*':
        ans=multiply(num1,num2)
    case '/':
        ans=devide(num1, num2)
    case default: print("Invalid choice")

print(f"The Answer is: {ans}")
```

Output:

```
PS D:\LEARNING\COLLAGE\SAM7\Python\collage\Task4> py practical3.py
Enter Num 1: 20
Enter num 2: 2
Which Operation you want to perform? [+] [-][*][/] : /
The Answer is: 10.0
```

Practical 4

Write a function to print following patterns:

(I)
```
10101
01010
10101
01010
10101
```

(II)
```
1
23
456
78910
```

(III)
```
*
**
***
****
*****
*****
****
***
**
*
```

```
def printPattern_1(limit):
    for i in range (1, limit+1):
        if i%2==0:
            for j in range(1, limit+1):
                if j%2==0: print("1 ", end="")
                else:      print("0 ",end="")
        else:
            for j in range(1, limit+1):
                if j%2!=0: print("1 ", end="")
                else:      print("0 ", end="")
        print()

def printPattern_2(limit):
    counter=0
    for i in range(1,limit):
        for j in range(i):
            counter+=1
            print(counter,end=" ")
        print()

def printPattern_3(limit):
    for i in range(limit):
        for j in range(i):
            print("*",end=" ")
        print()
    for i in range(limit,0,-1):
        for j in range(i):
            print("*",end=" ")
        print()

limit=int(input("Enter Limit: "))
print("<------Patteren i ------>")
printPattern_1(limit=limit)
print()
print("<------Patteren ii ------>")
printPattern_2(limit=limit)
print()
print("<------Patteren iii ------>")
printPattern_3(limit=limit)
```

Output:

```
PS D:\LEARNING\COLLAGE\SAM7\Python\collage\Task4> py practical4.py
Enter Limit: 5
<------Patteren i ------>
1 0 1 0 1
0 1 0 1 0
1 0 1 0 1
0 1 0 1 0
1 0 1 0 1

<------Patteren ii ------>
1
2 3
4 5 6
7 8 9 10

<------Patteren iii ------>

*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*
```

Practical 5

Write a python function to find the factorial of the number.

```python
# Function start
def factorial(number):
    if number>1:
        # recursive approach
        return number*factorial(number=number-1)
    else:
        return 1
# function end

number=int(input("Enter Number: "))
print(f"The Factorial of {number} is: {factorial(number=number)}")
```

Output:

```
PS D:\LEARNING\COLLAGE\SAM7\Python\collage\Task4> py practical5.py
Enter Number: 5
The Factorial of 5 is: 120
```

Practical 6

Write a python function to find the gcd of two numbers

```
def findGCD(num1,num2):
    i=1
    gcd=0
    while i<=num1 and i<=num2:
        if num1%i==0 and num2%i==0:
            gcd=i
        i+=1
    return gcd

num1=int(input("Enter Number 1: "))
num2=int(input("Enter number 2: "))
print(f"The Greatest comman Deviser of {num1} and {num2} is : {findGCD(num1=num1,num2=num2)}")
```

Output:

```
PS D:\LEARNING\COLLAGE\SAM7\Python\collage\Task4> py practical6.py
Enter Number 1: 100
Enter number 2: 120
The Greatest comman Deviser of 100 and 120 is : 20
```

Practical 7

Write a python function to find the sum and average of all the elements in the List. Return these values and print them outside the function.

```
def sum_average(numbers):
    sum=0
    for number in numbers:
        sum+=number
    average=sum/len(numbers)
    return sum,average

myList=[100,90,10,56,50,89,67,45,100,780,]
sum,average=sum_average(myList)
print(f"sum is {sum} and average is {average}")
```

Output:

```
PS D:\LEARNING\COLLAGE\SAM7\Python\collage\Task4> py practical7.py
sum is 1387 and average is 138.7
PS D:\LEARNING\COLLAGE\SAM7\Python\collage\Task4>
```