1.Write a program to demonstrate Nested function

```
def greet(a):
    def hello (b):
        return f"Hello {b}"
    return hello(a)
print(greet('Vandith'))
```

```
Hello Vandith
```

2. Write a program to calculate factorial of a given number using recrursion

```
def factorial(n):
    if(n==0):
        return 1
    else :
        return n*factorial(n-1)
n=int(input("Enter a number for factorial"))
print(f"factorial of {n} is {factorial(n)}")
```

```
Enter a number for factorial4
factorial of 4 is 24
```

3. Write a program to create decorators and generators

```
def my_decorator(func):
    def wrapper():
        print("Hello")
        func()
        print("Bye")
    return wrapper

def say_hello():
    print("Wassup?")

say_hello()
```

```
Hello
Wassup?
Bye
```

```
def square_numbers(n):
    for i in range(n):
        yield i ** 2

my_generator = square_numbers(7)
for num in my_generator:
    print(num)
```

```
0
1
4
9
16
25
36
```

4. Create two different user defined modules and access respective functions from one file to another

```
greetUser.py
def greetUser(name):
    print(f"Hello {name}")

byeUser.py
def byeUser(name):
    print(f"Bye {name}")


greetUser.greetUser('Vk')
byeUser.byeUser('Vk')
```

```
Hello Vk
Bye Vk
```

5. write a program to access built in functions available in math, random and datetime modules

```
print(math.sqrt(16))
print(random.randint(1, 10))
print(datetime.datetime.now())
```

```
4.0
3
2024-03-22 18:07:46.100719
```