

Practical No 1

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Subject : DAA

Code :-

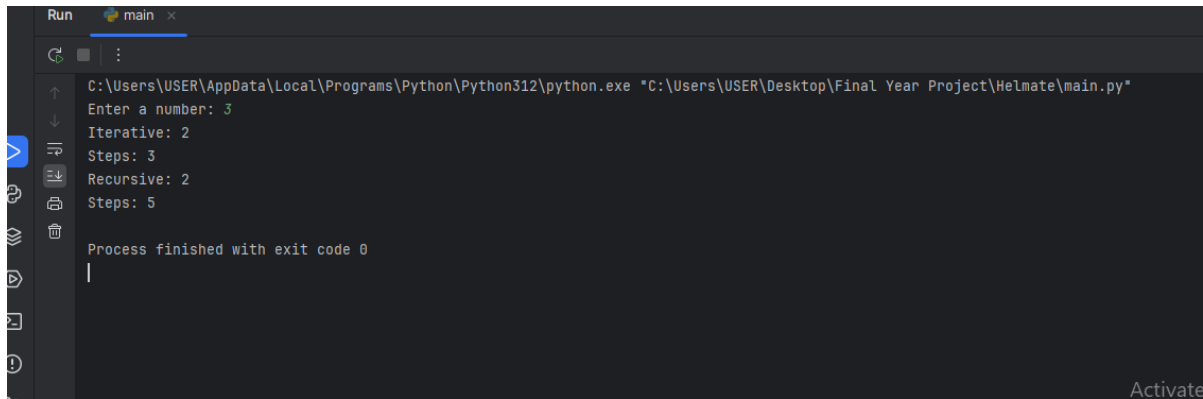
```
def fibonacci_iter(n):
    if n < 0:
        return -1, 1
    if n == 0 or n == 1:
        return n, 1
    steps = 0
    a = 0
    b = 1
    for i in range(2, n+1):
        c = a + b
        a = b
        b = c
        steps += 1
    return c, steps+1

def fibonacci_recur(n):
    if n < 0:
        return -1, 1
    if n == 0 or n == 1:
        return n, 1
    fib1, steps1 = fibonacci_recur(n-1)
    fib2, steps2 = fibonacci_recur(n-2)
    return fib1 + fib2, steps1 + steps2 + 1

if __name__ == '__main__':
```

```
n = int(input("Enter a number: "))  
print("Iterative:", fibonacci_iter(n)[0])  
print("Steps:", fibonacci_iter(n)[1])  
print("Recursive:", fibonacci_recur(n)[0])  
print("Steps:", fibonacci_recur(n)[1])
```

Output :-



```
Run main x  
C:\Users\USER\AppData\Local\Programs\Python\Python312\python.exe "C:\Users\USER\Desktop\Final Year Project\Helmate\main.py"  
Enter a number: 3  
Iterative: 2  
Steps: 3  
Recursive: 2  
Steps: 5  
Process finished with exit code 0  
|  
Activate
```