**In Class Lab Week 7 B -**

**Problem 1: Fibonacci Sequence**

Write a Python program to generate the first N numbers in the Fibonacci sequence, and puts those values into a list named “fibonacci”. Then display all the even numbers in the list. Lastly display all the odd numbers in the list.

Paste the Screenshot of your source code below:

def Fs(n: int) -> list[int]:

if n < 1:

raise ValueError("`n` is smaller than 1")

if n <= 2:

return [1] \* n

fst = 1

snd = 1

def f() -> int:

nonlocal fst, snd

fst, snd = snd, fst + snd

return snd

return [1, 1] + [f() for \_ in range(3, n+1)]

n = int(input("> "))

fibonacci = Fs(n)

print("fibonacci:", ', '.join(map(str, fibonacci)))

print("fibonacci (even):", ', '.join(map(str, filter(lambda x: not x % 2, fibonacci))))

print("fibonacci (odd):", ', '.join(map(str, filter(lambda x: x % 2, fibonacci))))

Paste the Screenshot of your output below:

> 15

fibonacci: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610

fibonacci (even): 2, 8, 34, 144, 610

fibonacci (odd): 1, 1, 3, 5, 13, 21, 55, 89, 233, 377

**Problem 2: List Operations**

Write a Python program that does the following:

* Create an empty list.
* Prompt the user to enter a series of integers until they enter 0. Add each integer to the list.
* Display the list.
* Calculate and display the sum, minimum, and maximum values from the list.
* Remove the last element from the list using list.pop() and display the modified list.

Paste the Screenshot of your source code below:

ls = []

while (x := int(input("> "))) != 0:

ls.append(x)

print(ls)

print("sum:", sum(ls))

print("minimum:", min(ls))

print("maximum:", max(ls))

ls.pop()

print("modified:", ls)

Paste the Screenshot of your output below:

> 1

> 5

> -1

> 3

> 7

> 8

> 9

> 14

> -6

> 0

[1, 5, -1, 3, 7, 8, 9, 14, -6]

sum: 40

minimum: -6

maximum: 14

modified: [1, 5, -1, 3, 7, 8, 9, 14]