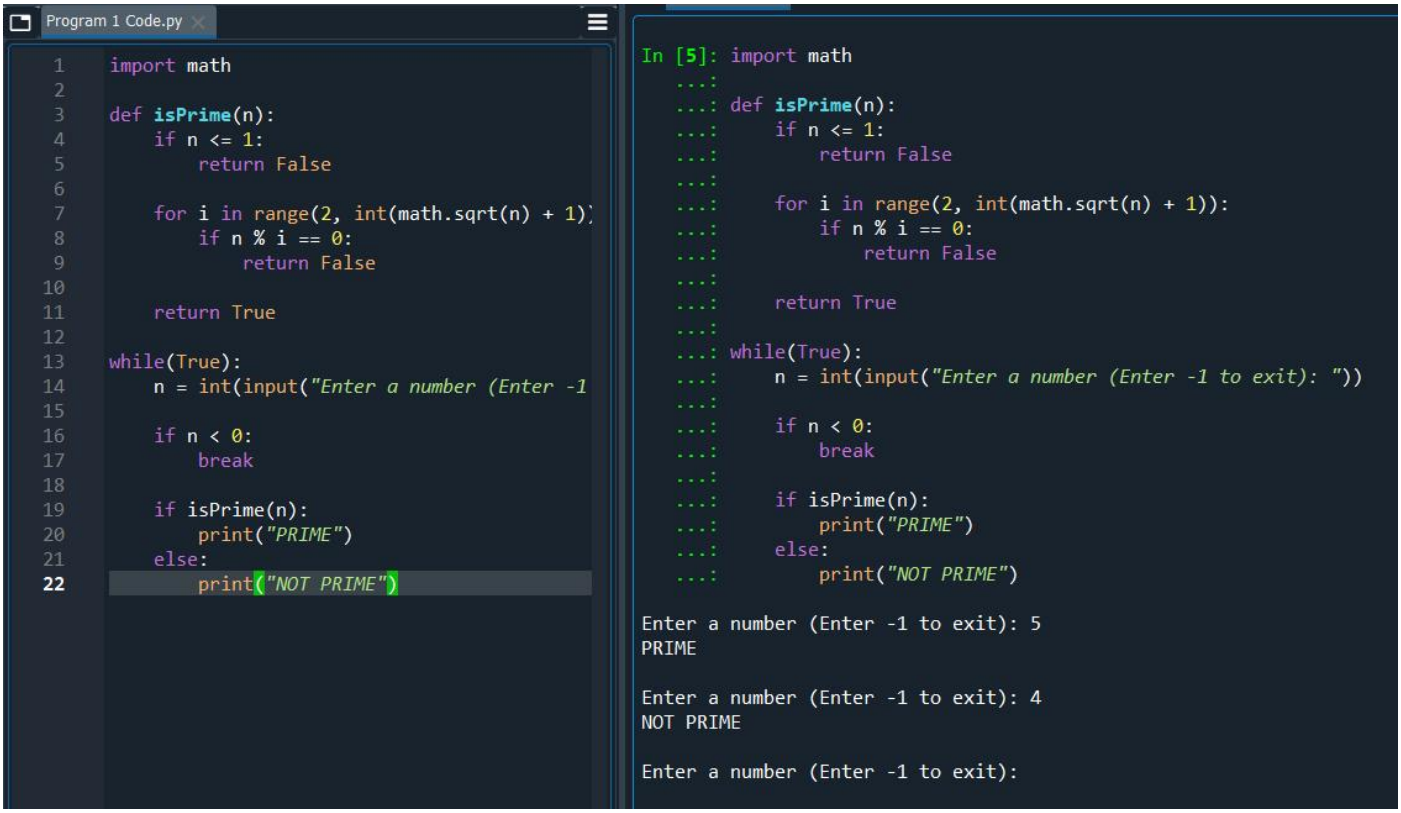
ASSIGNMENT - 2

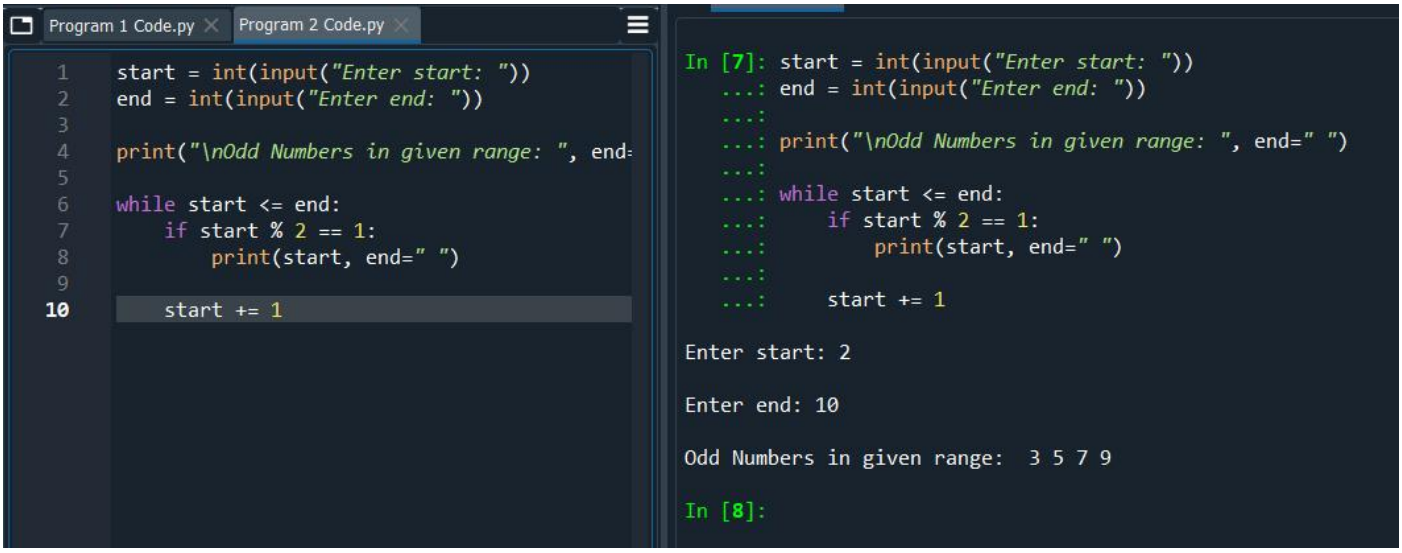
Q1) Write a python program to test a given number is prime or not.



```
Program 1 Code.py

1  import math
2
3  def isPrime(n):
4      if n <= 1:
5          return False
6
7      for i in range(2, int(math.sqrt(n) + 1)):
8          if n % i == 0:
9              return False
10
11     return True
12
13 while(True):
14     n = int(input("Enter a number (Enter -1
15
16     if n < 0:
17         break
18
19     if isPrime(n):
20         print("PRIME")
21     else:
22         print("NOT PRIME")
```

```
In [5]: import math
   ...:
   ...: def isPrime(n):
   ...:     if n <= 1:
   ...:         return False
   ...:
   ...:     for i in range(2, int(math.sqrt(n) + 1)):
   ...:         if n % i == 0:
   ...:             return False
   ...:
   ...:     return True
   ...:
   ...: while(True):
   ...:     n = int(input("Enter a number (Enter -1 to exit): "))
   ...:
   ...:     if n < 0:
   ...:         break
   ...:
   ...:     if isPrime(n):
   ...:         print("PRIME")
   ...:     else:
   ...:         print("NOT PRIME")

Enter a number (Enter -1 to exit): 5
PRIME

Enter a number (Enter -1 to exit): 4
NOT PRIME

Enter a number (Enter -1 to exit):
```

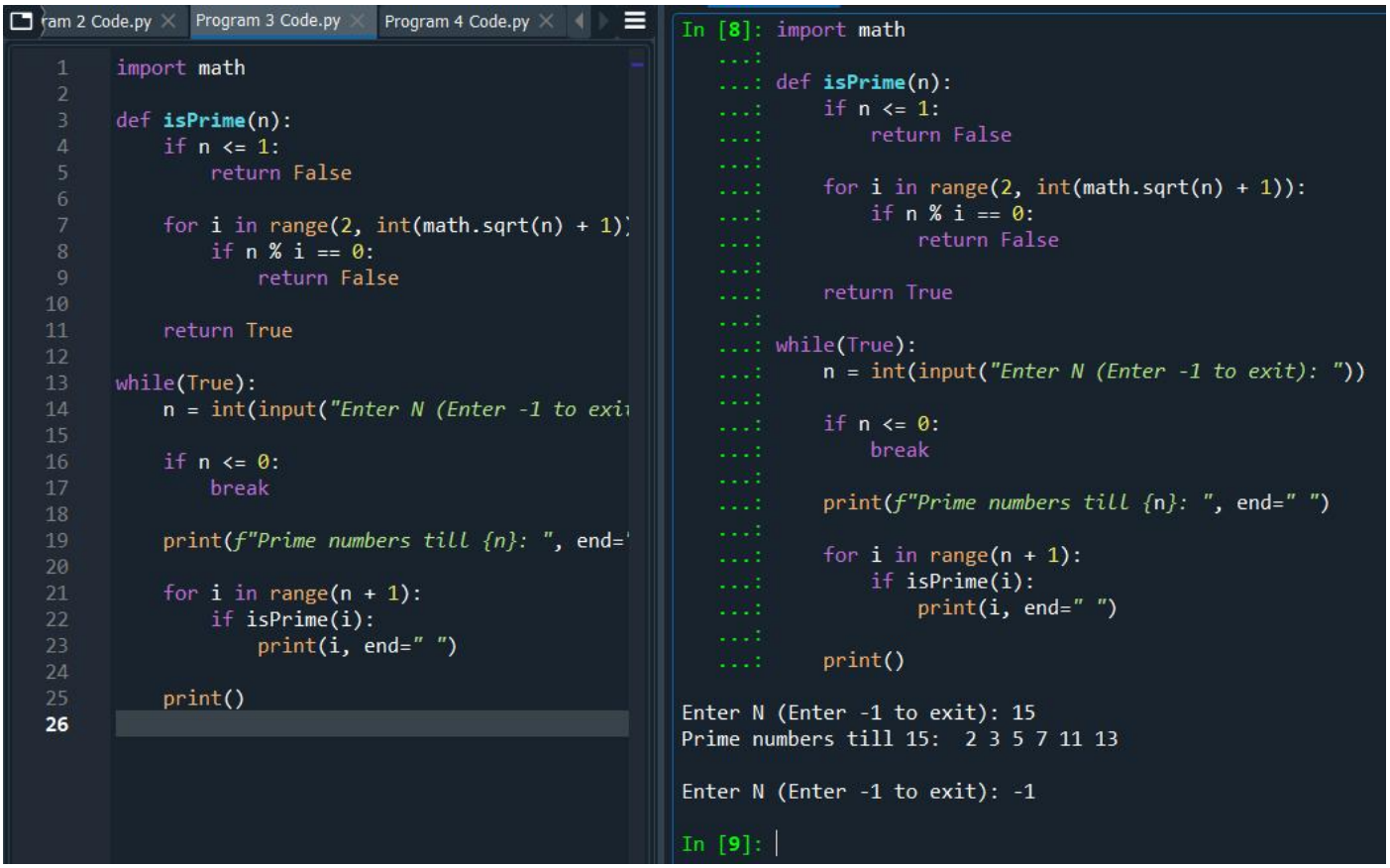
Q2) Write a program to generate odd numbers from m to n using while loop



```
Program 1 Code.py   Program 2 Code.py

1  start = int(input("Enter start: "))
2  end = int(input("Enter end: "))
3
4  print("\nOdd Numbers in given range: ", end=
5
6  while start <= end:
7      if start % 2 == 1:
8          print(start, end=" ")
9
10     start += 1
```

```
In [7]: start = int(input("Enter start: "))
   ...: end = int(input("Enter end: "))
   ...:
   ...: print("\nOdd Numbers in given range: ", end=" ")
   ...:
   ...: while start <= end:
   ...:     if start % 2 == 1:
   ...:         print(start, end=" ")
   ...:
   ...:     start += 1

Enter start: 2

Enter end: 10

Odd Numbers in given range:  3 5 7 9

In [8]:
```

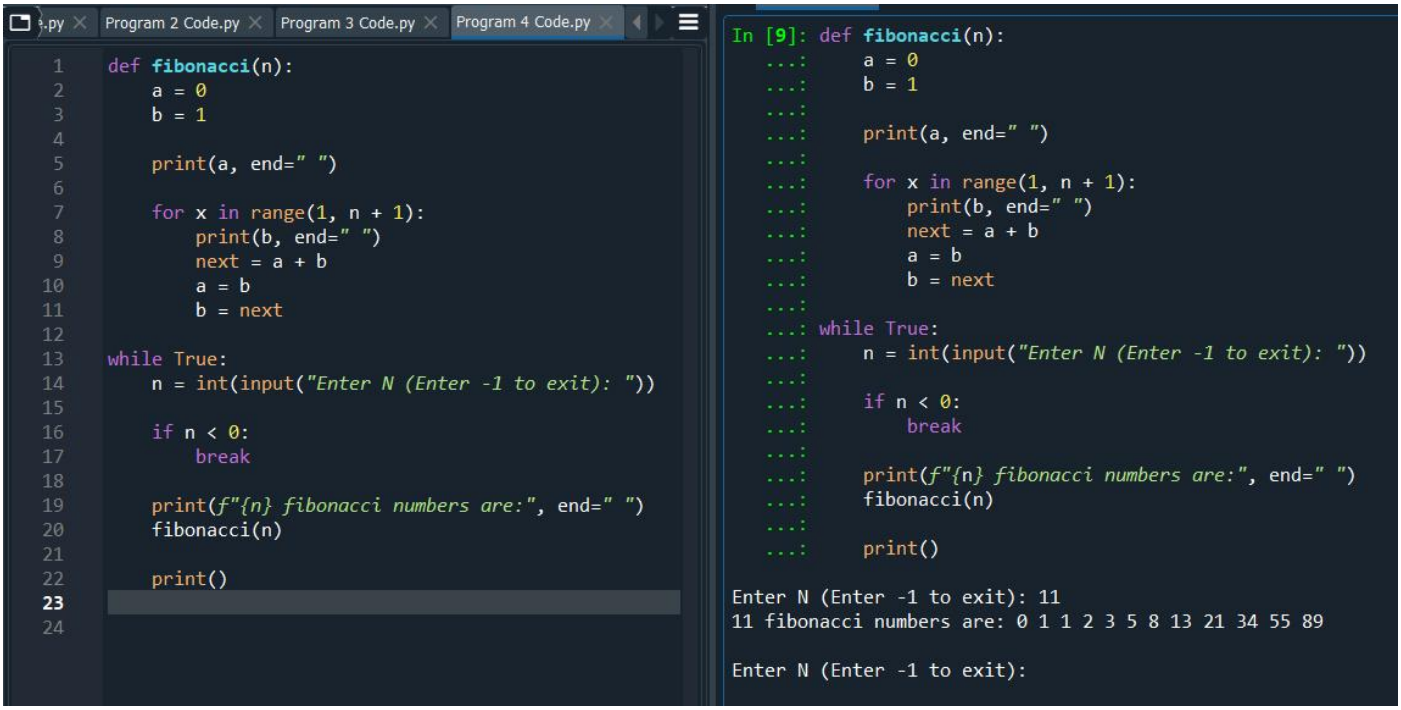
Q3) Write a Python program to display prime number series up to given number.



```
ram 2 Code.py | Program 3 Code.py | Program 4 Code.py

1  import math
2
3  def isPrime(n):
4      if n <= 1:
5          return False
6
7      for i in range(2, int(math.sqrt(n) + 1)):
8          if n % i == 0:
9              return False
10
11     return True
12
13 while(True):
14     n = int(input("Enter N (Enter -1 to exit
15
16     if n <= 0:
17         break
18
19     print(f"Prime numbers till {n}: ", end="
20
21     for i in range(n + 1):
22         if isPrime(i):
23             print(i, end=" ")
24
25     print()
26
```

```
In [8]: import math
   ...:
   ...: def isPrime(n):
   ...:     if n <= 1:
   ...:         return False
   ...:
   ...:     for i in range(2, int(math.sqrt(n) + 1)):
   ...:         if n % i == 0:
   ...:             return False
   ...:
   ...:     return True
   ...:
   ...: while(True):
   ...:     n = int(input("Enter N (Enter -1 to exit): "))
   ...:
   ...:     if n <= 0:
   ...:         break
   ...:
   ...:     print(f"Prime numbers till {n}: ", end=" ")
   ...:
   ...:     for i in range(n + 1):
   ...:         if isPrime(i):
   ...:             print(i, end=" ")
   ...:
   ...:     print()

Enter N (Enter -1 to exit): 15
Prime numbers till 15:  2 3 5 7 11 13

Enter N (Enter -1 to exit): -1

In [9]:
```

Q4) Write a Python program to generate Fibonacci series.



```
.py | Program 2 Code.py | Program 3 Code.py | Program 4 Code.py

1  def fibonacci(n):
2      a = 0
3      b = 1
4
5      print(a, end=" ")
6
7      for x in range(1, n + 1):
8          print(b, end=" ")
9          next = a + b
10         a = b
11         b = next
12
13 while True:
14     n = int(input("Enter N (Enter -1 to exit): "))
15
16     if n < 0:
17         break
18
19     print(f"{n} fibonacci numbers are:", end=" ")
20     fibonacci(n)
21
22     print()
23
24
```

```
In [9]: def fibonacci(n):
   ...:     a = 0
   ...:     b = 1
   ...:
   ...:     print(a, end=" ")
   ...:
   ...:     for x in range(1, n + 1):
   ...:         print(b, end=" ")
   ...:         next = a + b
   ...:         a = b
   ...:         b = next
   ...:
   ...: while True:
   ...:     n = int(input("Enter N (Enter -1 to exit): "))
   ...:
   ...:     if n < 0:
   ...:         break
   ...:
   ...:     print(f"{n} fibonacci numbers are:", end=" ")
   ...:     fibonacci(n)
   ...:
   ...:     print()

Enter N (Enter -1 to exit): 11
11 fibonacci numbers are: 0 1 1 2 3 5 8 13 21 34 55 89

Enter N (Enter -1 to exit):
```