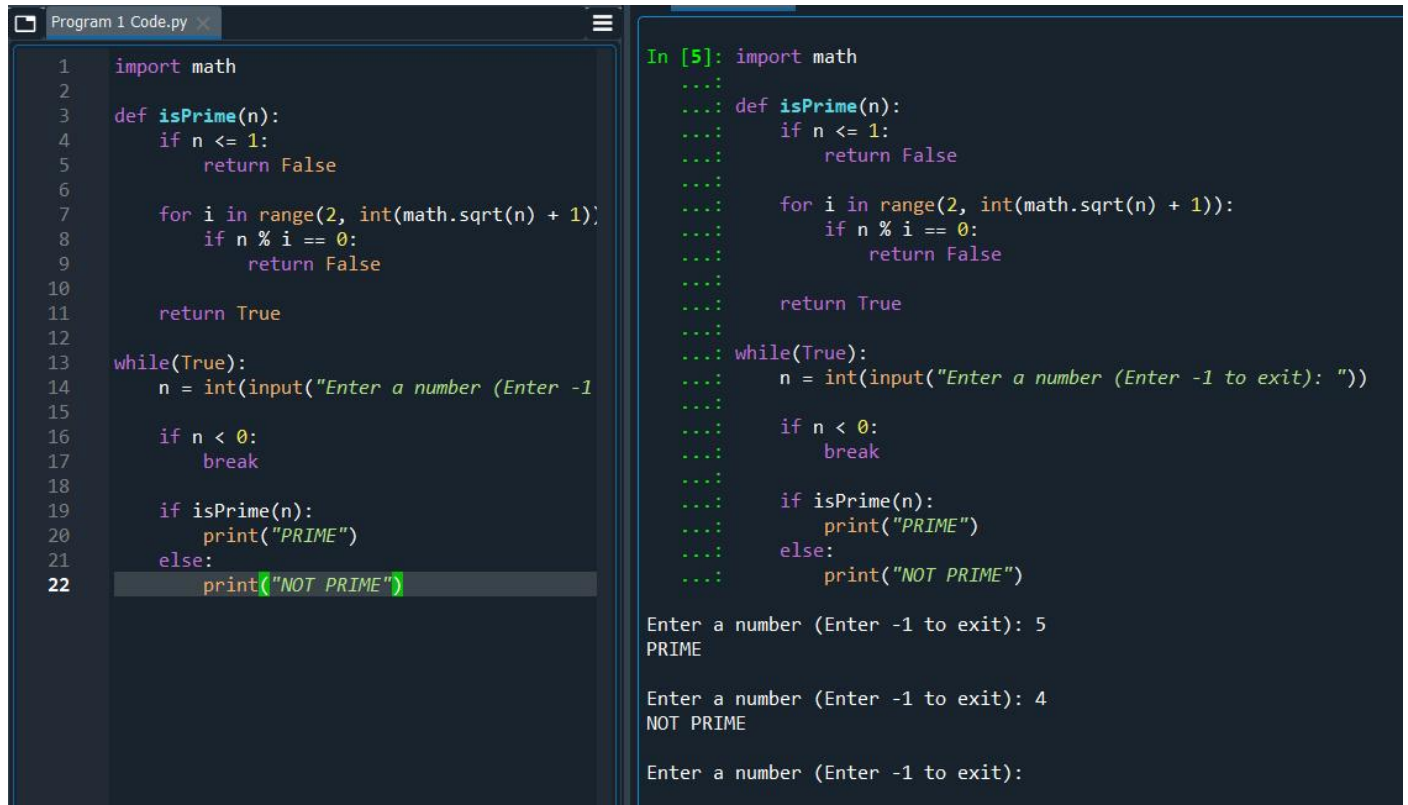


ASSIGNMENT - 2

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

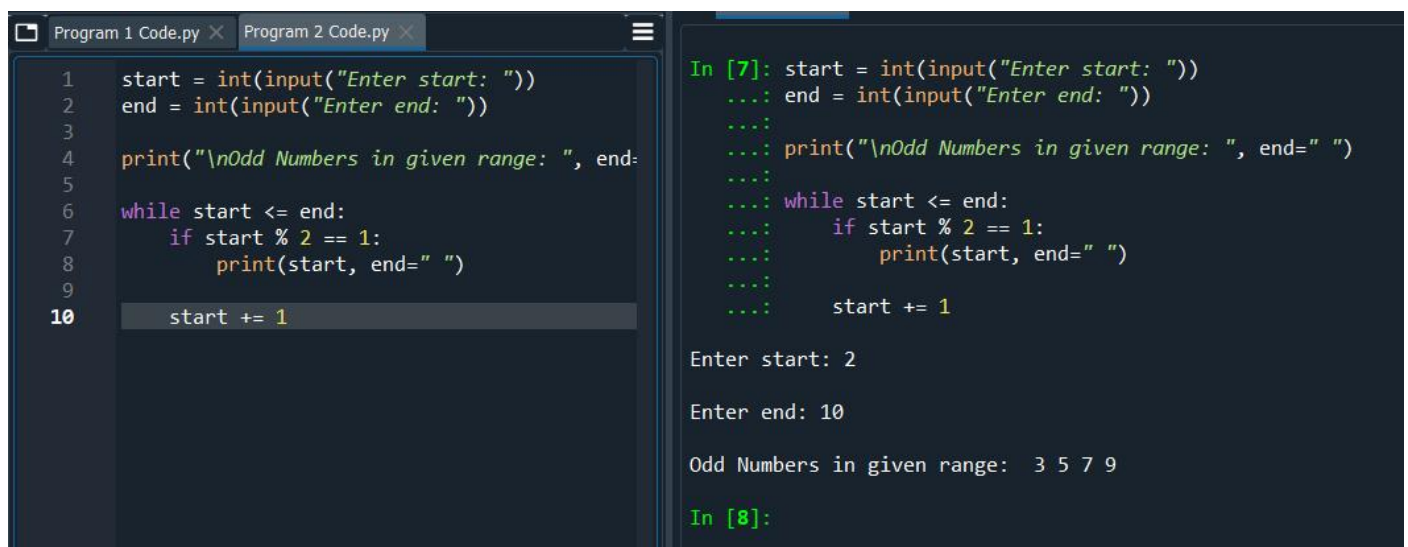


The screenshot shows a Python IDE with two panels. The left panel displays the source code for a program named 'Program 1 Code.py'. The code defines a function `isPrime(n)` that checks if a number is prime by testing divisibility from 2 to $\sqrt{n} + 1$. It then uses a `while(True)` loop to repeatedly prompt the user for a number, printing 'PRIME' or 'NOT PRIME' based on the function's result. The right panel shows the Jupyter Notebook interface with the code executed in cell [5]. The output shows the program correctly identifying 5 as 'PRIME' and 4 as 'NOT PRIME'.

```
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 to exit): "))
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



The screenshot shows a Python IDE with two panels. The left panel displays the source code for a program named 'Program 2 Code.py'. The code prompts the user for a start and end value, then uses a `while` loop to print odd numbers in the given range. The right panel shows the Jupyter Notebook interface with the code executed in cell [7]. The output shows the program generating odd numbers from 2 to 10, resulting in the sequence 3, 5, 7, 9.

```
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.

```
Program 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.

```
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):
```