

IBM ASSIGNMENT 1

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

Program

```
n=int(input("enter the number"))
```

```
if n > 1:
```

```
for i in range(2, n):
```

```
if (n % i) == 0:
```

```
print(n, "is not a prime number")
```

```
break
```

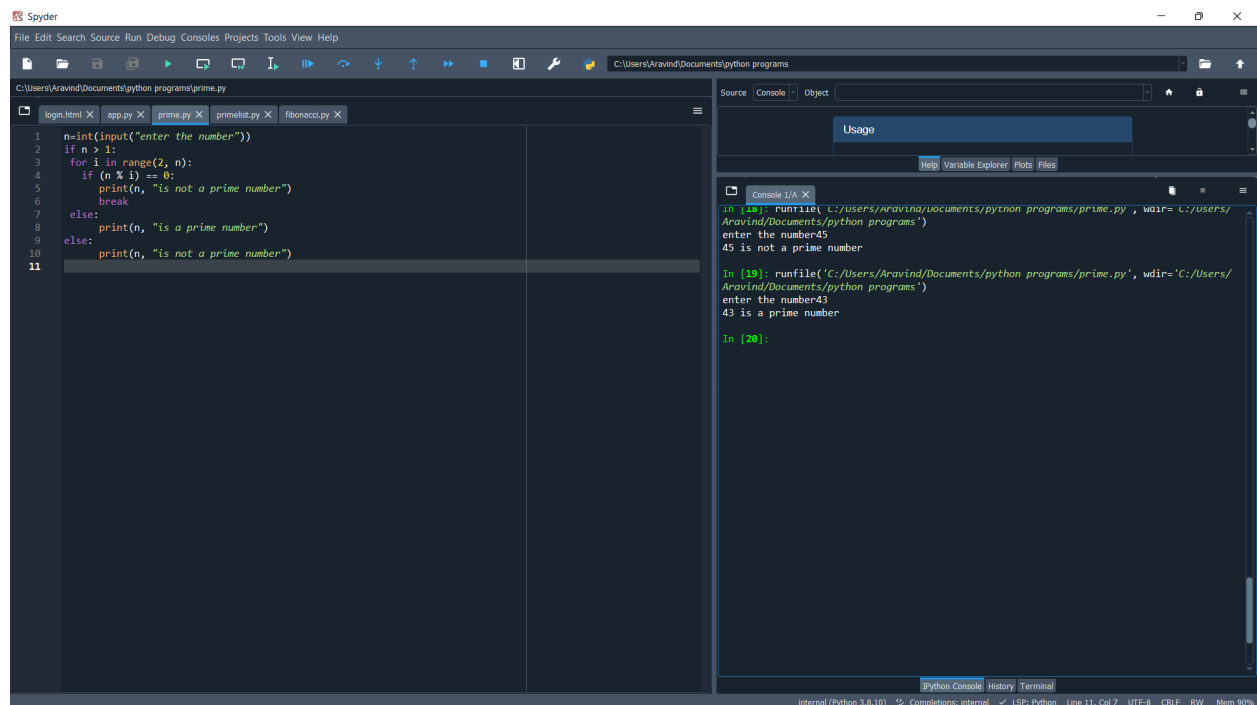
```
else:
```

```
print(n, "is a prime number")
```

```
else:
```

```
print(n, "is not a prime number")
```

OUTPUT:



The screenshot shows the Spyder Python IDE interface. The editor window displays a Python program for testing if a number is prime. The program prompts the user to enter a number and then checks for divisibility from 2 to n-1. If any divisor is found, it prints that the number is not prime; otherwise, it prints that the number is prime.

```
1 n=int(input("enter the number"))
2 if n > 1:
3     for i in range(2, n):
4         if (n % i) == 0:
5             print(n, "is not a prime number")
6             break
7 else:
8     print(n, "is a prime number")
9 else:
10    print(n, "is not a prime number")
11
```

The console window shows the execution of the program. It prompts for input, and two examples are shown: 45 (not prime) and 43 (prime).

```
In [18]: runfile('C:/Users/Aravind/Documents/python programs/prime.py', wdir='C:/Users/Aravind/Documents/python programs')
enter the number45
45 is not a prime number

In [19]: runfile('C:/Users/Aravind/Documents/python programs/prime.py', wdir='C:/Users/Aravind/Documents/python programs')
enter the number43
43 is a prime number

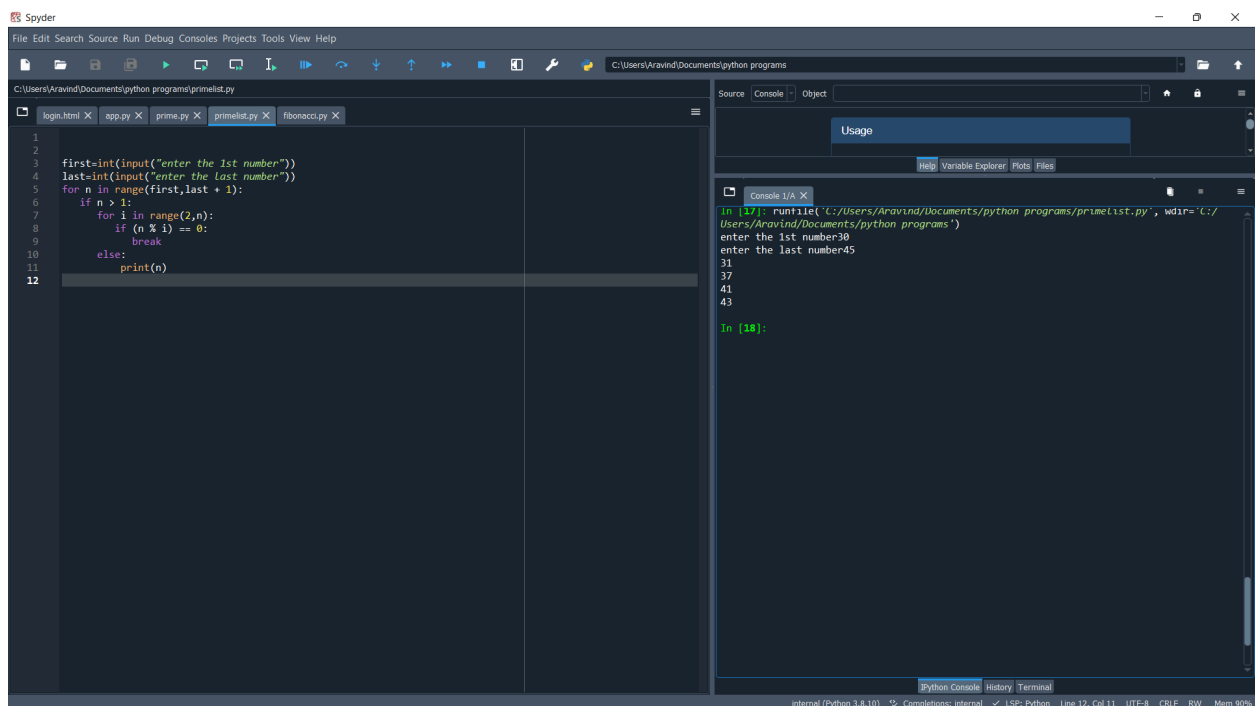
In [20]:
```

3. Write a python program to display prime number series up to given number

Program:

```
first=int(input("enter the 1st number"))
last=int(input("enter the last number"))
for n in range(first,last + 1):
    if n > 1:
        for i in range(2,n):
            if (n % i) == 0:
                break
        else:
            print(n)
```

OUTPUT:

The image is a screenshot of the Spyder Python IDE. The main editor window on the left displays a Python script named 'primelist.py'. The script prompts the user to enter the first and last numbers, then iterates through the range from first to last + 1. For each number 'n', it checks for divisibility from 2 to 'n-1'. If 'n' is greater than 1 and no divisors are found, it prints 'n'. The file explorer on the top left shows several files: 'login.html', 'app.py', 'prime.py', 'primelist.py', and 'fibonacci.py'. The IPython console on the right shows the execution of the script. It displays the prompts 'enter the 1st number:' and 'enter the last number:', followed by the output of the program: 31, 37, 41, and 43. The status bar at the bottom indicates the interpreter is 'internal (Python 3.8.10)' and the file is 'primelist.py' at line 12, column 11.

4. Write a python program to generate fibonacci series

Program:

```
n = int(input("How many times ? "))
a1, a2 = 0, 1
count = 0
```

```

if n <= 0:
    print("Please enter a positive integer")
elif n == 1:
    print("Fibonacci sequence upto",n,":")
    print(a1)
else:
    print("Fibonacci sequence:")
    while count < n:
        print(a1)
        a = a1 + a2
        a1 = a2
        a2 = a
        count += 1

```

OUTPUT:

The screenshot shows the Spyder Python IDE interface. The source code editor on the left contains the following code:

```

1 n = int(input("How many times ? "))
2 a1, a2 = 0, 1
3 count = 0
4 if n <= 0:
5     print("Please enter a positive integer")
6 elif n == 1:
7     print("Fibonacci sequence upto",n,":")
8     print(a1)
9 else:
10    print("Fibonacci sequence:")
11    while count < n:
12        print(a1)
13        a = a1 + a2
14        a1 = a2
15        a2 = a
16        count += 1
17

```

The console output on the right shows the execution results:

```

Usage
Help Variable Explorer Plots Files

In [16]: runfile('C:/Users/Aravind/Documents/python programs/fibonacci.py', wdir='C:/Users/Aravind/Documents/python programs')
How many times ? 15
Fibonacci sequence:
0
1
1
2
3
5
8
13
21
34
55
89
144
233
377

In [17]:

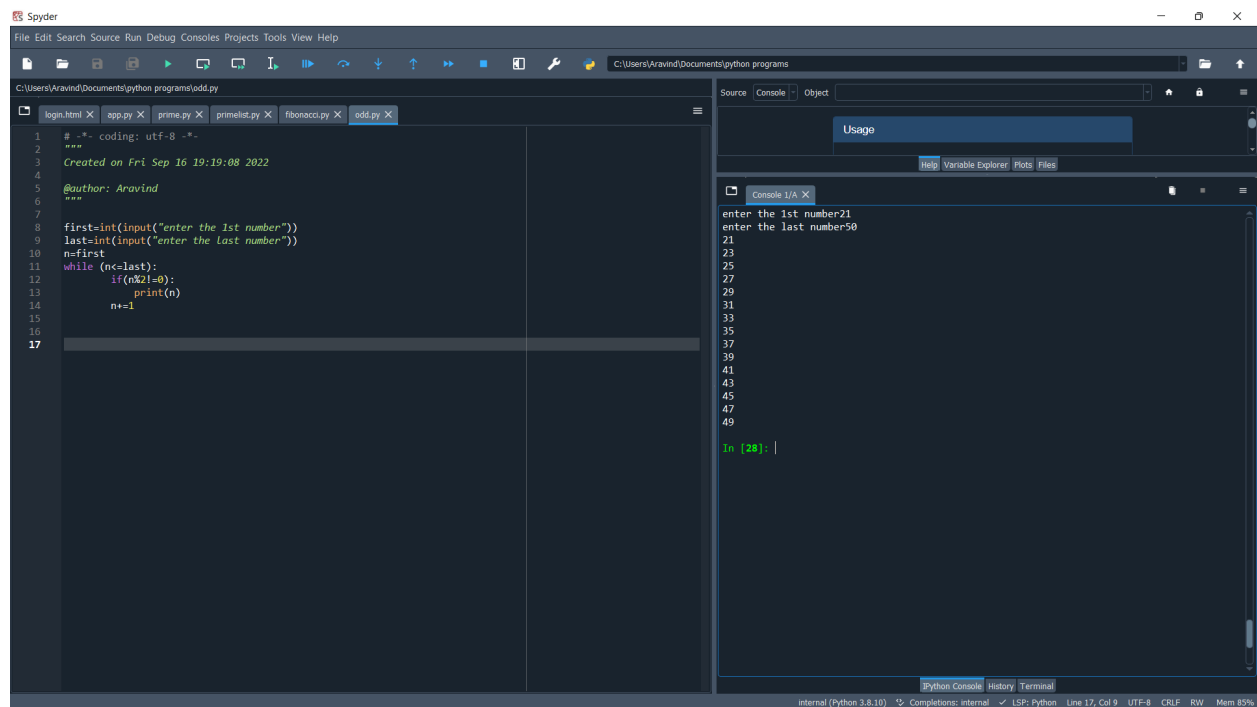
```

4. Write a program to generate odd numbers from m to n using while loop.

Program:

```
m=int(input("enter the 1st number"))
n=int(input("enter the last number"))
p=m
while (p<=n):
    if(n%2!=0):
        print(n)
    p+=1
```

OUTPUT:



The screenshot shows the Spyder Python IDE interface. The left pane displays a Python script named 'add.py' with the following code:

```
1 # -*- coding: utf-8 -*-
2
3 Created on Fri Sep 16 19:19:08 2022
4
5 @author: Aravind
6
7
8 first=int(input("enter the 1st number"))
9 last=int(input("enter the last number"))
10 n=first
11 while (n<=last):
12     if(n%2!=0):
13         print(n)
14     n+=1
15
16
17
```

The right pane shows the 'Console' output, which displays the execution results:

```
enter the 1st number:21
enter the last number:50
21
23
25
27
29
31
33
35
37
39
41
43
45
47
49
In [28]:
```

The status bar at the bottom indicates the interpreter is 'internal (python 3.6.10)' and the file encoding is 'UTF-8'.