

ASSIGNMENT-1

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

Program:

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

flag = False

if num > 1:

    for i in range(2, num):

        if (num % i) == 0:

            flag = True

            break

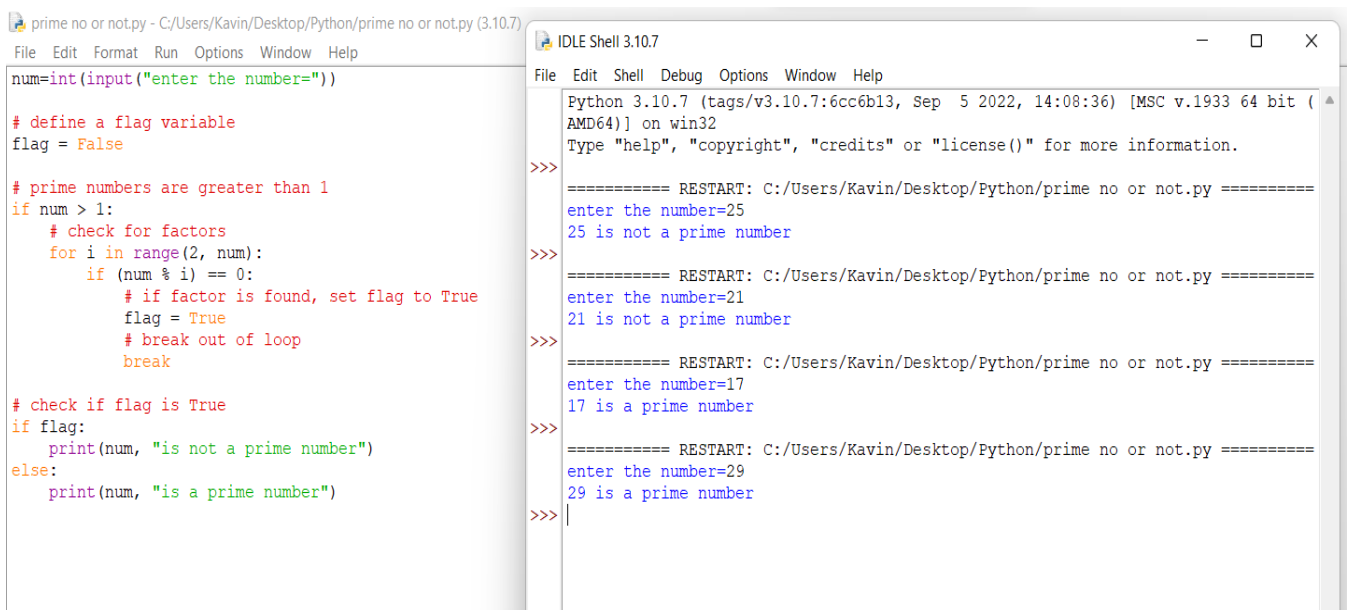
if flag:

    print(num, "is not a prime number")

else:

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

Output:



The image shows a screenshot of a Python program and its execution output. On the left, the source code for a program to check if a number is prime is displayed in a text editor. The code uses a flag variable to track if a number has any divisors other than 1 and itself. On the right, the IDLE Shell 3.10.7 window shows the program's execution. It displays the prompt 'enter the number=' followed by the user input '25', which results in the output '25 is not a prime number'. Subsequent inputs '21' and '17' result in '21 is not a prime number' and '17 is a prime number' respectively. The final input '29' results in '29 is a prime number'.

```
prime no or not.py - C:/Users/Kavin/Desktop/Python/prime no or not.py (3.10.7)
File Edit Format Run Options Window Help
num=int(input("enter the number="))

# define a flag variable
flag = False

# prime numbers are greater than 1
if num > 1:
    # check for factors
    for i in range(2, num):
        if (num % i) == 0:
            # if factor is found, set flag to True
            flag = True
            # break out of loop
            break

# check if flag is True
if flag:
    print(num, "is not a prime number")
else:
    print(num, "is a prime number")

IDLE Shell 3.10.7
File Edit Shell Debug Options Window Help
Python 3.10.7 (tags/v3.10.7:6cc6b13, Sep 5 2022, 14:08:36) [MSC v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Kavin/Desktop/Python/prime no or not.py =====
enter the number=25
25 is not a prime number
>>>
===== RESTART: C:/Users/Kavin/Desktop/Python/prime no or not.py =====
enter the number=21
21 is not a prime number
>>>
===== RESTART: C:/Users/Kavin/Desktop/Python/prime no or not.py =====
enter the number=17
17 is a prime number
>>>
===== RESTART: C:/Users/Kavin/Desktop/Python/prime no or not.py =====
enter the number=29
29 is a prime number
>>>
```

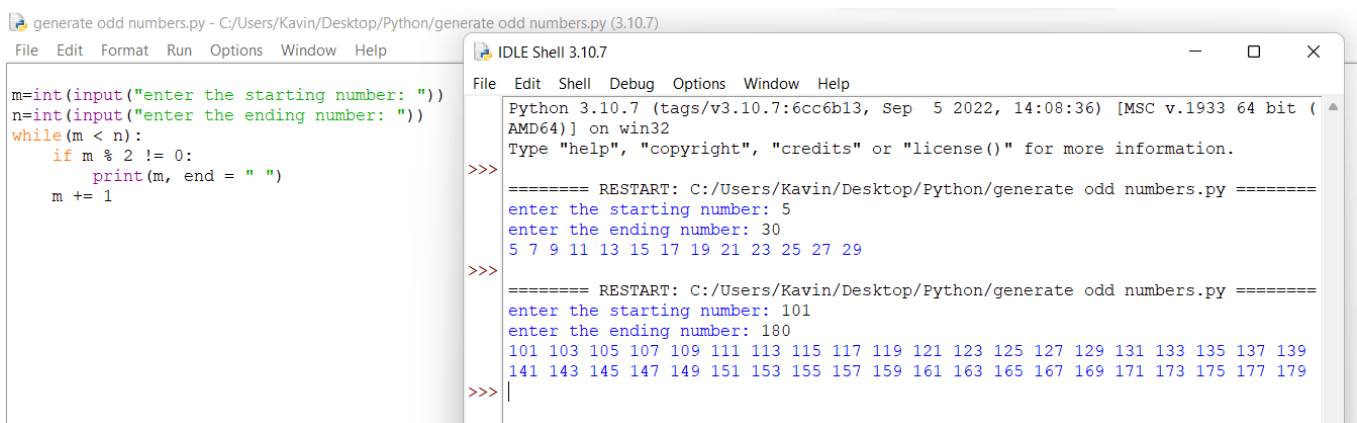
2. Write a program to generate odd numbers from m to n using while loop.

Program:

```
m=int(input("enter the starting number"))
n=int(input("enter the ending number"))

while(m < n):
    if m % 2 != 0:
        print(m, end = " ")
    m += 1
```

Output:

The screenshot shows a Python IDE window titled 'generate odd numbers.py - C:/Users/Kavin/Desktop/Python/generate odd numbers.py (3.10.7)'. The code in the editor is the same as provided in the previous block. The output window, titled 'IDLE Shell 3.10.7', shows the execution of the program. It prompts for 'enter the starting number: 5' and 'enter the ending number: 30', followed by the output '5 7 9 11 13 15 17 19 21 23 25 27 29'. A second execution is shown with 'enter the starting number: 101' and 'enter the ending number: 180', resulting in a long list of odd numbers from 101 to 179.

```
File Edit Format Run Options Window Help
m=int(input("enter the starting number: "))
n=int(input("enter the ending number: "))
while(m < n):
    if m % 2 != 0:
        print(m, end = " ")
    m += 1

IDLE Shell 3.10.7
Python 3.10.7 (tags/v3.10.7:6cc6b13, Sep 5 2022, 14:08:36) [MSC v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/Kavin/Desktop/Python/generate odd numbers.py =====
enter the starting number: 5
enter the ending number: 30
5 7 9 11 13 15 17 19 21 23 25 27 29
>>>
===== RESTART: C:/Users/Kavin/Desktop/Python/generate odd numbers.py =====
enter the starting number: 101
enter the ending number: 180
101 103 105 107 109 111 113 115 117 119 121 123 125 127 129 131 133 135 137 139
141 143 145 147 149 151 153 155 157 159 161 163 165 167 169 171 173 175 177 179
>>>
```

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

Program:

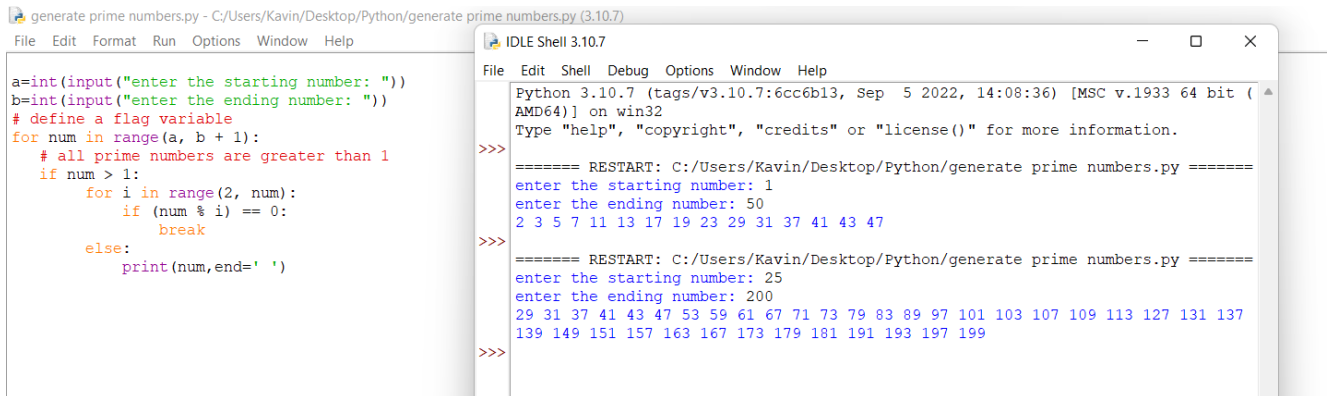
```
a=int(input("enter the starting number: "))
b=int(input("enter the ending number: "))

for num in range(a, b + 1):
    if num > 1:
        for i in range(2, num):
            if (num % i) == 0:
                break
```

else:

print(num,end=' ')

Output:



The screenshot shows a Python IDLE Shell window with the following code and output:

```
generate prime numbers.py - C:/Users/Kavin/Desktop/Python/generate prime numbers.py (3.10.7)
File Edit Format Run Options Window Help

a=int(input("enter the starting number: "))
b=int(input("enter the ending number: "))
# define a flag variable
for num in range(a, b + 1):
    # all prime numbers are greater than 1
    if num > 1:
        for i in range(2, num):
            if (num % i) == 0:
                break
        else:
            print(num,end=' ')

>>>
===== RESTART: C:/Users/Kavin/Desktop/Python/generate prime numbers.py =====
enter the starting number: 1
enter the ending number: 50
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47
>>>
===== RESTART: C:/Users/Kavin/Desktop/Python/generate prime numbers.py =====
enter the starting number: 25
enter the ending number: 200
29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97 101 103 107 109 113 127 131 137
139 149 151 157 163 167 173 179 181 191 193 197 199
>>>
```

4. Write a program to generate Fibonacci series

Program:

num=int(input("Enter the number of terms: "))

a=0;

b=1;

for i in range(1,num):

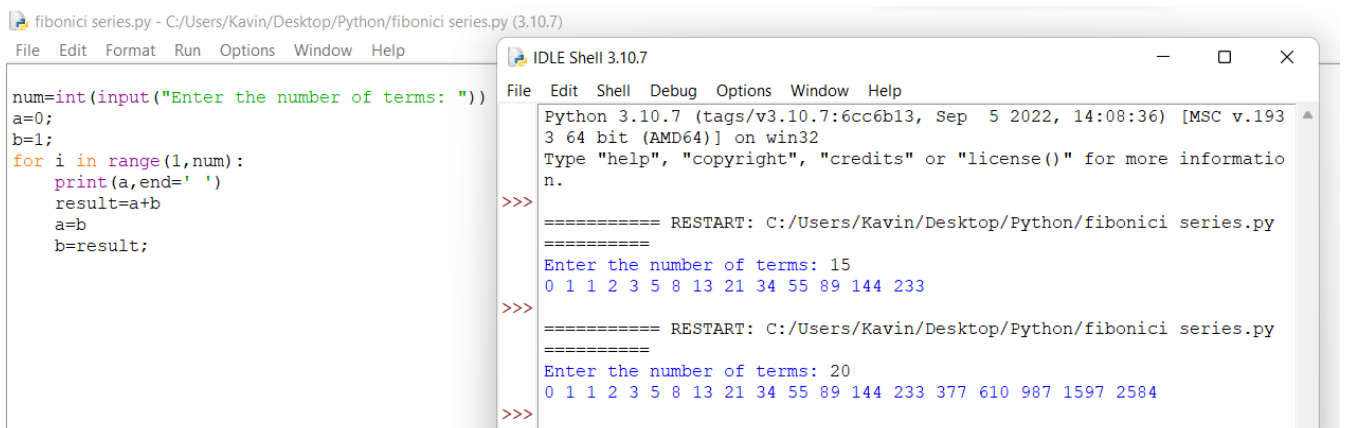
print(a,end=' ')

result=a+b

a=b

b=result;

Output:



The screenshot shows a Python IDLE Shell window with the following code and output:

```
fibonici series.py - C:/Users/Kavin/Desktop/Python/fibonici series.py (3.10.7)
File Edit Format Run Options Window Help

num=int(input("Enter the number of terms: "))
a=0;
b=1;
for i in range(1,num):
    print(a,end=' ')
    result=a+b
    a=b
    b=result;

>>>
===== RESTART: C:/Users/Kavin/Desktop/Python/fibonici series.py =====
Enter the number of terms: 15
0 1 1 2 3 5 8 13 21 34 55 89 144 233
>>>
===== RESTART: C:/Users/Kavin/Desktop/Python/fibonici series.py =====
Enter the number of terms: 20
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584
>>>
```