ASSIGNMENT 1

ROLL NUMBER	2019503506
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1. **Write a code in an IDE and run the code through command prompt. Write a code in Spyder and run the code.**

   SOURCE CODE

   ```python
   n =int(input())

   for i inrange(n):
       for j inrange(i):
           print(i, end=" ")
       print(end="\n")
   ```

   OUTPUT

   Spyder Output

   ```
   5

   1
   2 2
   3 3 3
   4 4 4 4
   ```

   Terminal Output

   ```
   5

   1
   2 2
   3 3 3
   4 4 4 4
   ```

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

   SOURCE CODE

   ```python
   import math

   defisPrime(n):
       if n <=1:
           returnFalse
   ```

```python
    for i inrange(2, int(math.sqrt(n) +1)):
        if n % i ==0:
            returnFalse

    returnTrue

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")
```

OUTPUT

```
Enter a number (Enter -1 to exit): 0
NOT PRIME

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

Enter a number (Enter -1 to exit): 2
PRIME

Enter a number (Enter -1 to exit): 3
PRIME

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

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

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

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

SOURCE CODE

```python
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
```

OUTPUT

```
Enter start: 5

Enter end: 15

Odd Numbers in given range:  5 7 9 11 13 15
```

4. **Write a Python program to display prime number series up to given number.**

<u>**SOURCE CODE**</u>

```
import math

defisPrime(n):
    if n <=1:
        returnFalse

    for i inrange(2, int(math.sqrt(n) +1)):
        if n % i ==0:
            returnFalse

    returnTrue

while(True):
    n =int(input("Enter N (Enter -1 to exit): "))

    if n <=0:
        break

    print(f"Prime numbers till {n}: ", end=" ")

    for i inrange(n +1):
        if isPrime(i):
            print(i, end=" ")

    print()
```

<u>**OUTPUT**</u>

```
Enter N (Enter -1 to exit): 5
Prime numbers till 5:   2 3 5

Enter N (Enter -1 to exit): 10
Prime numbers till 10:   2 3 5 7

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

Enter N (Enter -1 to exit): 20
Prime numbers till 20:   2 3 5 7 11 13 17 19

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

5. Write a Python program to generate Fibonacci series.

SOURCE CODE

```python
deffibonacci(n):
    a =0
    b =1

    print(a, end=" ")

    for x inrange(1, n +1):
        print(b, end=" ")
        next= a + b
        a = b
        b =next

whileTrue:
    n =int(input("Enter N (Enter -1 to exit): "))

    if n <0:
        break

    print(f"{n} fibonacci numbers are:", end=" ")
    fibonacci(n)

    print()
```

OUTPUT

```
Enter N (Enter -1 to exit): 2
2 fibonacci numbers are: 0 1 1

Enter N (Enter -1 to exit): 3
3 fibonacci numbers are: 0 1 1 2

Enter N (Enter -1 to exit): 4
4 fibonacci numbers are: 0 1 1 2 3

Enter N (Enter -1 to exit): 5
5 fibonacci numbers are: 0 1 1 2 3 5

Enter N (Enter -1 to exit): 6
6 fibonacci numbers are: 0 1 1 2 3 5 8

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