ASSIGNMENT 1

DATE	13th September 2022
ROLL NUMBER	2019503005
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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

```
n = int(input())

for i in range(n):
    for j in range(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

```
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")
```

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

```
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.**

SOURCE CODE

```
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()
```

OUTPUT

```
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
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()
```

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
```