

Assignments

Python assignment - 4

Date	23 September 2022
Student Name	Alex S
Project Name	Project -Skill and Job recommender application
Maximum Marks	2 Marks

Prime Number

Question :

Write a program to test a given number is prime or not

Solution:

```
num = int(input("Enter a number :"))
# To take input from the user
#num = int(input("Enter a 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")
```

```
1 num = int(input("Enter a number :"))
2
3 # To take input from the user
4 #num = int(input("Enter a number: "))
5
6 # define a flag variable
7 flag = False
8
9 # prime numbers are greater than 1
10 if num > 1:
11     # check for factors
12     for i in range(2, num):
13         if (num % i) == 0:
14             # if factor is found, set flag to True
15             flag = True
16             # break out of loop
17             break
18
19 # check if flag is True
20 if flag:
21     print(num, "is not a prime number")
22 else:
23     print(num, "is a prime number")
24
```

Enter a number :11
11 is a prime number

Odd Numbers from m to n

Question:

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

Solution:

start, end = 4, 19

iterating each number in list

for num in range(start, end + 1):

checking condition

if num % 2 != 0:

print(num, end = " ")

```
1 # Python program to print odd Numbers
2
3 start, end = 4, 19
4
5 # iterating each number in list
6 for num in range(start, end + 1):
7     # checking condition
8     if num % 2 != 0:
9         print(num, end = " ")
10
11
12
13
14
15
16
17
18
```

5 7 9 11 13 15 17 19

Prime Number Series

Question:

Write a program to display prime number series upto given number

Solution:

#function to check if a given number is prime

def isPrime(n):

#since 0 and 1 is not prime return false.

if(n==1 or n==0):

return False

#Run a loop from 2 to n-1

for i in range(2,n):

#if the number is divisible by i, then n is not a prime number.

if(n%i==0):

return False

#otherwise, n is prime number.

return True

```

# Driver code

N = int(input("Enter a number : "))

#check for every number from 1 to N
for i in range(1,N+1):

#check if current number is prime
    if(isPrime(i)):
        print(i,end=" ")

```

The screenshot shows a Python IDE with a dark theme. The left pane contains the source code for a program that displays prime numbers up to a given number N. The right pane shows the output of the program for N=45, which is the list of prime numbers: 2 3 5 7 11 13 17 19 23 29 31 37 41 43. The code in the left pane includes a function `isPrime(n)` that checks for primality by testing divisibility from 2 to n-1. The driver code prompts the user for a number, reads it, and then iterates through numbers from 1 to N, printing each prime number.

```

1  # Python3 program to display Prime numbers till N
2
3  #function to check if a given number is prime
4  def isPrime(n):
5      #since 0 and 1 is not prime return false.
6      if(n==1 or n==0):
7          return False
8
9      #Run a loop from 2 to n-1
10     for i in range(2,n):
11         #if the number is divisible by i, then n is not prime
12         if(n%i==0):
13             return False
14
15     #otherwise, n is prime number.
16     return True
17
18
19
20 # Driver code
21 N = int(input("Enter a number : "))
22 #check for every number from 1 to N
23 for i in range(1,N+1):
24     #check if current number is prime
25     if(isPrime(i)):
26         print(i,end=" ")
27
28
29

```

Enter a number : 45
2 3 5 7 11 13 17 19 23 29 31 37 41 43

Fibonacci Sequence from 0 to n

Question:

Write a program to To generate Fibonacci series

Solution:

```

nterms = int(input("How many terms? "))

# first two terms
n1, n2 = 0, 1

```

```

count = 0
if nterms <= 0:
    print("Please enter a positive integer")
elif nterms == 1:
    print("Fibonacci sequence upto",nterms,":")
    print(n1)
# generate fibonacci sequence
else:
    print("Fibonacci sequence:")
    while count < nterms:
        print(n1)
        nth = n1 + n2
        # update values
        n1 = n2
        n2 = nth
        count += 1

```

The screenshot shows a Python script on the left and its execution output on the right. The script is a program to display the Fibonacci sequence up to a given number of terms. It uses a while loop to generate the sequence, updating the first two terms (n1 and n2) as it progresses. The output shows the sequence for 7 terms: 0, 1, 1, 2, 3, 5, 8.

```

1 # Program to display the Fibonacci sequence up
2
3 nterms = int(input("How many terms? "))
4
5 # first two terms
6 n1, n2 = 0, 1
7 count = 0
8
9 # check if the number of terms is valid
10 if nterms <= 0:
11     print("Please enter a positive integer")
12 # if there is only one term, return n1
13 elif nterms == 1:
14     print("Fibonacci sequence upto",nterms,":")
15     print(n1)
16 # generate fibonacci sequence
17 else:
18     print("Fibonacci sequence:")
19     while count < nterms:
20         print(n1)
21         nth = n1 + n2
22         # update values
23         n1 = n2
24         n2 = nth
25         count += 1
26
27
28
29

```

How many terms? 7
Fibonacci sequence:
0
1
1
2
3
5
8