Department of Computer Science & Engineering

Problem Solving with C Laboratory-UE19CS152

Week-4

OBJECTIVE: Students will learn control structures-Looping and Enumeration.

1) Write a program to check whether a number is prime

i) Find number of factors - if number of factors is 2, then the number is prime

ii) Check whether any number from 2 to n - 1 divides the given number

Output:

For Example-

a) Enter a positive integer:12

Factors of 12 are:

1

2

3

4

6

12

The count = 6

12 is not a prime

b) Enter a positive integer:11

Factors of 11 are:

1

11

The count = 2

11 is a prime

2) Write a program to output the following

Given n, (i.e, For Example n = 4)

1 = 1

1 +2 = 3

1 +2 +3 = 6

1 +2 +3 +4 = 10

3) Write a program to check whether the given four digit number is PALINDROME or NOT.

Output:

a) Enter a number : 1221

The given Number 1221 is Palindrome

b) Enter a number : 2020

The given Number 2020 is not Palindrome

4) Write a program to compute Sin(x) using Taylor series approximation given by $\text{Sin(x)} = \frac{x}{1!} - \frac{x^3}{3!} + \frac{x^5}{5!} - .$

Output:

a) Enter the value of degree90

The sine of 90 is 1.000

The sine function of 90 is 1.000

b) Enter the value of degree45

The sine of 45 is 0.707

The sine function of 45 is 0.707

Hint:

Use sin() and fabs() functions, defined in #include<math.h>
Compilation: gcc filename -lm
Execution: ./a.out

5) Write a C program to find whether week day or week end using enum.

Output:

a) enter the day of the week(0 to 6)

6

Its the weekend

b) enter the day of the week(0 to 6)

4

Week day

Practice programs:

1. Write a program to find sum of prime numbers between 1 to n.

2. Write a program to output the following

```
        1
      2 3 2
    3 4 5 4 3
  4 5 6 7 6 5 4
5 6 7 8 9 8 7 6 5
```