Department of Computer science and Technology,
Indian Institute of Engineering, Science and Technology, Shibpur,
Introduction To Computing Lab

Assignment - 2

1. Write a C program that takes an integer as input from the keyboard and display it in words. As for example, If the integer is 235, the output will be *Two Three Five*.

2. Write a C program to generate set of all prime numbers between 1 and n, where the number n have to be supplied by the user.

3. Write a program in C that takes two integer numbers (say x and y) and prints the value x^y. Do not use the standard library function *pow*() for the computation of x^y.

4. Write a C program to find the GCD of two given numbers.

5. Write C program to print the sum of the following series up to n^{th} term, where x or n have to be taken from the user. Do not use the library function *pow*() for computation of x^n.

   (a) $1 + 2 + 3 + 4 + \ldots$ *upto* n^{th} *terms*

   (b) $1 + x + x^2 + x^3 + \ldots$ *upto* n^{th} *terms*

   (c) $S = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \ldots$ *upto* n^{th} *terms*

   (d) $S = 1 - 2 + 3 - 4 \ldots$ *upto* n^{th} *term.*

   (e) $S = 2 + 4 + 6 + \ldots$ *upto* n^{th} *term.*

6. Write a C program to generate Fibonacci sequence upto n^{th} term where n is an input have to be taken from the keyboard. Write a main program to test it. The Fibonacci numbers are generated by setting $F_0 = 0$, $F_1 = 1$ and using the following formula to get the rest.

$$F_n = F_{n-1} + F_{n-2}$$

7. Write a C program to compute sum of the numbers between 20 to 30 and divisible by 2 and 3.

8. Write a C program to check whether an input integer is power of two or not. As for example $2^3 = 8$.

9. Write a C program to print the following pattern for n number of rows, here n is a input taken from keyboard. use loops and use ASCII code where ever needed.

a)
```
      *
    * *
  * * *
* * * *
```

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

b)
```
    1
  2 3 4
5 6 7 8 9
    ⋮
```

c)
```
      A
    B C
  D E F
G H I J
```