Experiment 2

Aim: Apply various control structures to solve given problems.

Common Programs (all batches):

1) Take two numbers as input and calculate their LCM and GCD (HCF).

2) Write a program to convert a decimal number to binary or convert a binary number to decimal

3) Twin primes are consecutive odd numbers, both of which are prime numbers. Write a program which inputs two positive integers A and B and outputs all twin primes in range A to B.

4) Write a program to find out whether a number is kaprekar or not. Consider an n-digit number k. Square it and add the right n digits to the left n or n-1 digits. If the resultant sum is k, then k is called a Kaprekar number. For example, 9 is a Kaprekar number since

9^2=81 and 8+1=9
and 297 is a Kaprekar number since
297^2=88209 and 88+209=297

The first few are 1, 9, 45, 55, 99, 297, and 703.

Batchwise Programs

Batch 1: Write a program to count positive numbers until it encounters a negative number. Accept numbers from the user at runtime.

Batch 2: Write a program to check whether a given number is Armstrong number or not.

For Example 371 is 33+73+13=371.

Batch 3: Note that 12*42 = 21*24 and 12*63 = 21*36 and 12*84 = 21*48 and so on. There is a property that (10a+b)*(10c+d) =(10b+a)(10d+c) where a and b are unequal and c and d are also unequal. Write a program which outputs them all between 10 to 99.

Batch 4: Write a program to print the following pattern

Input: 5

Output: