Fundamentals of Programming

MANUAL 05

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ME 15 C

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HOME TASKS

TASK 01

Write a program in C++ to find LCM of any two numbers using HCF

SOL:-

```
#include <iostream>

using namespace std;

int main()

{

   int i, n1, n2, j, hcf = 1, lcm;

   cout << " Input 1st number for LCM: ";

   cin >> n1;

   cout << " Input 2nd number for LCM: ";

   cin >> n2;

   j = (n1 < n2) ? n1 : n2;

   for (i = 1; i <= j; i++) {

 if (n1 % i == 0 && n2 % i == 0) {

         hcf = i;

      }

   }

   lcm = (n1 * n2) / hcf;

   cout << " The LCM of " << n1 << " and " << n2 << " is: " << lcm << endl;

}
```

```
/tmp/gS0tUjCRde.o
Input 1st number for LCM: 3
Input 2nd number for LCM: 5
The LCM of 3 and 5 is: 15
```

TASK 02

Write a program in C++ to find out the sum of an Arithmetic progression series

SOL:-

```
#include<iostream>
using namespace std;
int main() {
   int firstTerm, commonDifference, numTerms;
   cout << "Enter the first term of the series: ";
   cin >> firstTerm;
   cout << "Enter the common difference: ";
   cin >> commonDifference;
   cout << "Enter the number of terms: ";
   cin >> numTerms;
 int sum = 0;
   for (int i = 0; i < numTerms; i++) {
      int term = firstTerm + (i * commonDifference);
      sum += term;
   }
 cout << "The sum of the arithmetic progression series is: " << sum << endl;
 return 0;
}
```

```
/tmp/KwwuNf577S.o
Enter the first term of the series: 3
Enter the common difference: 2
Enter the number of terms: 9
The sum of the arithmetic progression series is: 99
```

TASK 03

Write a program in C++ to create a diamond

SOL:-

```
#include <iostream>
using namespace std;
int main()
{
  int i,j,r;
   cout << " Input number of rows: ";
   cin >> r;
  for(i=0;i<=r;i++)
  {
    for(j=1;j<=r-i;j++)
    cout<< " ";
    for(j=1;j<=2*i-1;j++)
      cout<<"*";
    cout<<endl;
  }
  for(i=r-1;i>=1;i--)
  {
    for(j=1;j<=r-i;j++)
    cout<<" ";
    for(j=1;j<=2*i-1;j++)
      cout<<"*";
    cout<<endl;;
  }
  return 0;
}
```

```
/tmp/gS0tUjCRde.o
Input number of rows (half of the diamond): 5
*
   ***
  *****
 *******
*********
 *******
  *****
   ***
    *
```

TASK 04

Write a program in C++ to convert a decimal number to binary number

SOL:-

```
#include <iostream>
using namespace std;
int main() {
   int n;
   cout << "Enter the number to convert: ";
   cin >> n;
 int a[10], i = 0;
   while (n > 0) {
      a[i] = n % 2;
      n = n / 2;
      i++;
   }
  cout << "Binary of the given number = ";
   for (int j = i - 1; j >= 0; j--) {
      cout << a[j];
   }
 cout << endl;
}
```

```
/tmp/31lBb9z6B4.o
Enter the number to convert: 723
Binary of the given number = 1011010011
```