

Fundamentals of Programming

MANUAL 05

11/2/2023

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;

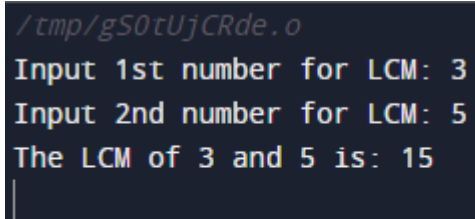
    cout << " Input 1st number for LCM: ";
    cin >> n1;

    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);

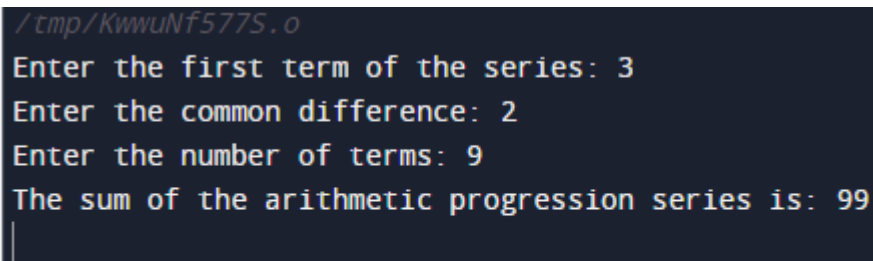
        sum += term;

    }

    cout << "The sum of the arithmetic progression series is: " << sum << endl;

    return 0;

}
```



```
/tmp/KwwwuNf577S.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 = ";

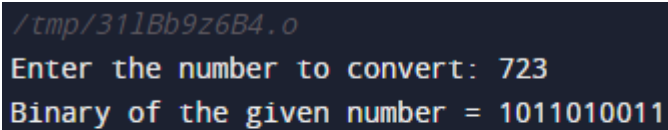
    for (int j = i - 1; j >= 0; j--) {

        cout << a[j];

    }

    cout << endl;

}
```



```
/tmp/311Bb9z6B4.o
Enter the number to convert: 723
Binary of the given number = 1011010011
```