



## **NUST SCHOOL OF MECHANICAL & MANUFACTURING ENGINEERING**

### **ASSIGNMENT NO:5**

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**Section: A**

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**Course: Computer systems and  
programming**

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**SMME** 

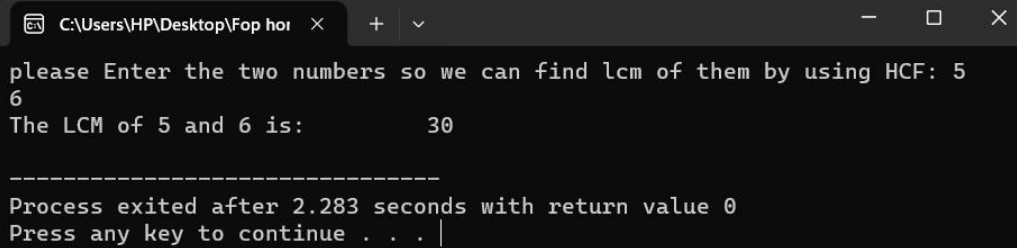
1. Write a program in C++ to find the LCM of any two numbers using HCF

```
#include<iostream>
using namespace std;
int main() {
    int number1, number2, hcf = 1, lcm;

    cout << "please Enter the two numbers so we can find lcm of them by using HCF: ";
    cin >> number1 >> number2;
    for (int p = 1; p <= min(number1, number2); p++) {

        if (number1 % p==0 && number2 % p==0) {
            hcf = p;
        }
    }
    lcm = (number1 *number2) / hcf;

    cout << "The LCM of " << number1 << " and " << number2 << " is: " << lcm << endl;
    return 0;
}
```

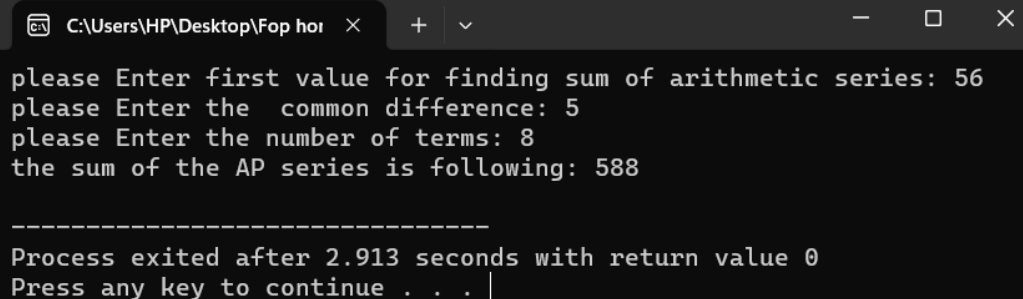


```
C:\Users\HP\Desktop\Fop hor
please Enter the two numbers so we can find lcm of them by using HCF: 5
6
The LCM of 5 and 6 is: 30

-----
Process exited after 2.283 seconds with return value 0
Press any key to continue . . .
```

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

```
#include<iostream>
using namespace std;
int main() {
    // first initialize by letting the sum equal to zero
    int x, y, z, sum = 0;
    cout << "please Enter first value for finding sum of arithmetic series: ";
    cin >> x;
    cout << "please Enter the common difference: ";
    cin >> y;
    cout << "please Enter the number of terms: ";
    cin >> z;
    for (int p = 1; p <= z; p++) {
        sum += x+(p - 1)*y;
    }
    cout << "the sum of the AP series is following: " << sum << endl;
    return 0;
}
```

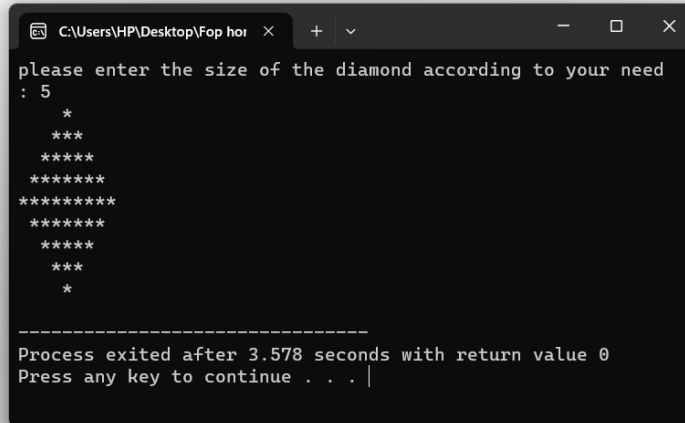


```
C:\Users\HP\Desktop\Fop hor
please Enter first value for finding sum of arithmetic series: 56
please Enter the common difference: 5
please Enter the number of terms: 8
the sum of the AP series is following: 588

-----
Process exited after 2.913 seconds with return value 0
Press any key to continue . . .
```

3. Write a program in C++ to create a diamond.

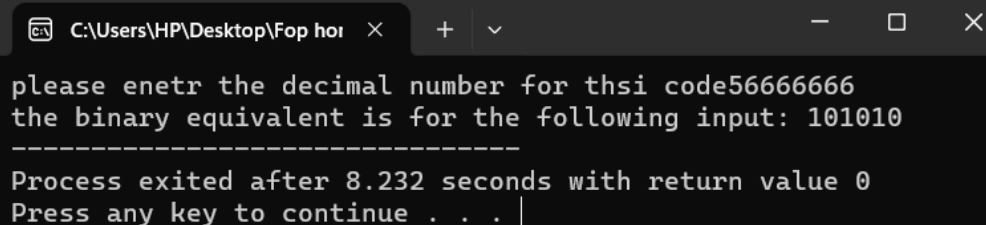
```
#include <iostream>
using namespace std;
int main() {
    // in this code we will use loops to print the diamond of our own size.
    int s;
    cout << "please enter the size of the diamond according to your need: ";
    cin >> s;
    // following code is for the upper half of the diamond
    for (int f = 1; f <= s; f++) {
        // now this will Print spaces
        for (int d = 1; d <= s - f; d++) {
            cout << " ";
        }
        // this will print stars
        for (int d = 1; d <= 2 * f - 1; d++) {
            cout << "*";
        }
        cout << endl;
    }
    // this will print the Lower half of the diamond
    for (int f = s - 1; f >= 1; f--) {
        for (int d = 1; d <= s - f; d++) {
            cout << " ";
        }
        for (int d = 1; d <= 2 * f - 1; d++) {
            cout << "*";
        }
        cout << endl;
    }
    return 0;
}
```



A screenshot of a Windows command prompt window titled "C:\Users\HP\Desktop\Fop hor". The prompt shows the output of the C++ program for a diamond size of 5. The output is a diamond shape made of asterisks, with 5 rows of increasing width (1, 3, 5, 7, 5 asterisks) and 5 rows of decreasing width. Below the diamond, the text "Process exited after 3.578 seconds with return value 0" and "Press any key to continue . . ." are visible.

4. Write a program in C++ to convert a decimal to a binary number:

```
#include<iostream>
using namespace std;
int main()
{
    int decimalnumber;
    cout<<"please enetr the decimal number for thsi code";
    cin>> decimalnumber;
    int binarynumber[8] = {0,0,0,0,0,0,0,0};
    //taking p = zero
    int p= 0;
    while(decimalnumber>0){
        int temp = decimalnumber%2;
        binarynumber [p] =temp;
        decimalnumber/=2;
        p++;
    }
    cout<<"the binary equivalent is for the following input: ";
    for(int p=5; p>=0; p--){
        cout<< binarynumber[p];
    }
    return 0;
}
```



A screenshot of a Windows command prompt window titled "C:\Users\HP\Desktop\Fop hor". The prompt shows the output of the C++ program for converting the decimal number 56666666 to binary. The output is "the binary equivalent is for the following input: 101010". Below this, the text "Process exited after 8.232 seconds with return value 0" and "Press any key to continue . . ." are visible.