NUST SCHOOL OF MECHANICAL &MANUFACTURING ENGINEERING

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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

```cpp
#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

```cpp
#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.

```cpp
#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;
}
```

```
C:\Users\HP\Desktop\Fop hor
please enter the size of the diamond according to your need
: 5
    *
   ***
  *****
 *******
*********
 *******
  *****
   ***
    *

--------------------------------
Process exited after 3.578 seconds with return value 0
Press any key to continue . . .
```

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

```cpp
#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;
}
```

```
C:\Users\HP\Desktop\Fop hor
please enetr the decimal number for thsi code56666666
the binary equivalent is for the following input: 101010
--------------------------------
Process exited after 8.232 seconds with return value 0
Press any key to continue . . .
```