



Fundamentals of Programming

ME-15

Section B

1st Semester

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```

int main(){
int num, num1, quotient, remainder;

cout<<"Enter a number:"<<endl;

cin>>num;

    if(num == 0){

        quotient = num / 2;

        remainder = num % 2;

        cout<<num<<"/2="<<quotient<<" Remainder:"<<remainder<<endl;

    }

while(num>0){

    quotient = num / 2;

    remainder = num % 2;

    cout<<num<<"/2="<<quotient<<" Remainder:"<<remainder<<endl;

    num = quotient; //num gets overwritten every time by the quotient

    /*order really matters apparently. i had initially put 'num=quotient' before the cout
statement. this kept printing the incorrect output (it would not show the original number being
divided by 2)

    placing 'num=quotient' after the cout statement actually fixed the code. The reason was
since the original number still hadn't been overwritten by the quotient, it actually showed the

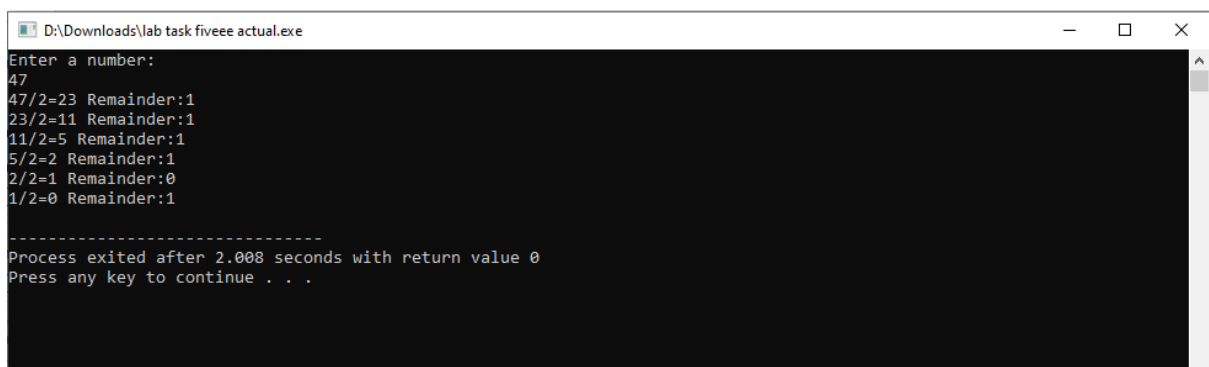
    original number being divided by 2 first. Once that is done, it starts to get overwritten by its
quotient.*/

    }

    return 0;

}

```



```

D:\Downloads\lab task fiveee actual.exe
Enter a number:
47
47/2=23 Remainder:1
23/2=11 Remainder:1
11/2=5 Remainder:1
5/2=2 Remainder:1
2/2=1 Remainder:0
1/2=0 Remainder:1
-----
Process exited after 2.008 seconds with return value 0
Press any key to continue . . .

```

```

int main(){

```

```

int x, y, high, low;

cout<<"Enter a number:"<<endl;

cin>>x;

cout<<"Enter another number:"<<endl;

cin>>y;

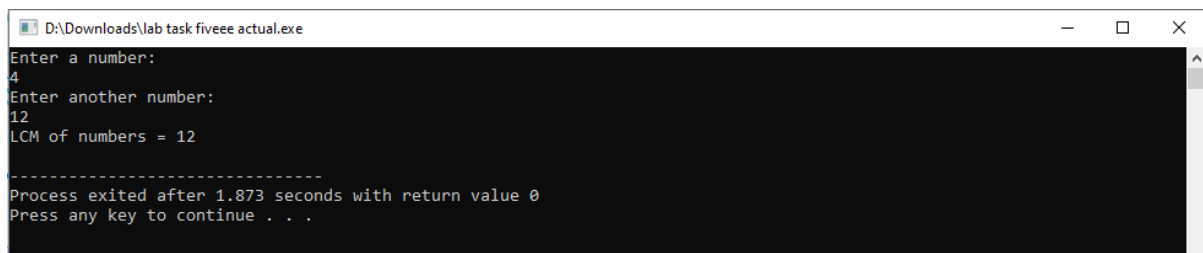
if(y!=0){    //if y equals to zero then the hcf cannot be found
    high=x%y;
}

low=(x*y)/high;

cout<<"LCM of numbers = "<<low<<endl;

return 0;
}

```



The screenshot shows a Windows command prompt window titled "D:\Downloads\lab task fiveee actual.exe". The program has been executed with the following input and output:

```

Enter a number:
4
Enter another number:
12
LCM of numbers = 12
-----
Process exited after 1.873 seconds with return value 0
Press any key to continue . . .

```

```

int main(){

    int a1, al, ter, sum;

    cout<<"Enter first term:"<<endl;

    cin>>a1;

    cout<<"Enter number of terms:"<<endl;

    cin>>ter;

    cout<<"Enter last term:"<<endl;

    cin>>al;

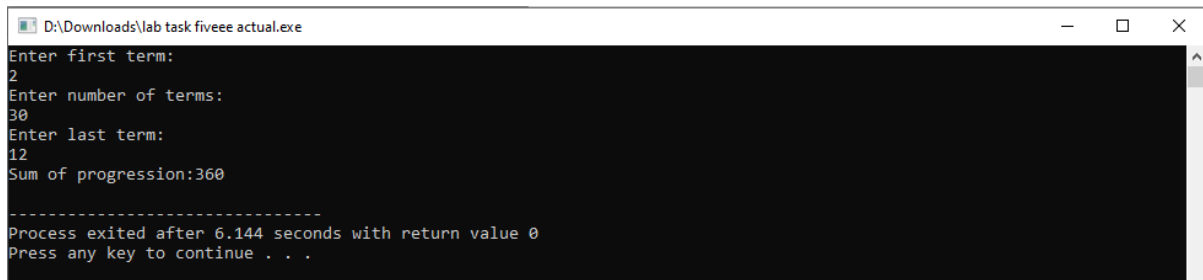
    sum=ter*((a1*al)/2); //formula for sum of arithmetic progression

```

```
cout<<"Sum of progression:"<<sum<<endl;
```

```
return 0;
```

```
}
```



```
D:\Downloads\lab task fiveee actual.exe
Enter first term:
2
Enter number of terms:
30
Enter last term:
12
Sum of progression:360
-----
Process exited after 6.144 seconds with return value 0
Press any key to continue . . .
```

```
int main() {
```

```
    int rows;
```

```
    cout << "Enter the rows of the top and bottom side of the diamond: ";
```

```
    cin >> rows;
```

```
    for(int x = 1; x <= rows; x++) {    //top side of diamond
```

```
        for(int y = 1; y <= rows-x; y++) {
```

```
            cout<<" ";                /*its important to give spaces, and place for statements in
other for statements because otherwise the shape of the diamond will be distorted*/
```

```
            for(int y=1;y<=2*x-1;y++){
```

```
                cout << "*";
```

```
            }
```

```
        cout << endl;
```

```
    }
```

```
    for(int x=rows-1;x>=1;x--){ //bottom side of diamond
```

```
        for(int y=1;y<=rows-x;y++){
```

```
            cout<<" ";
```

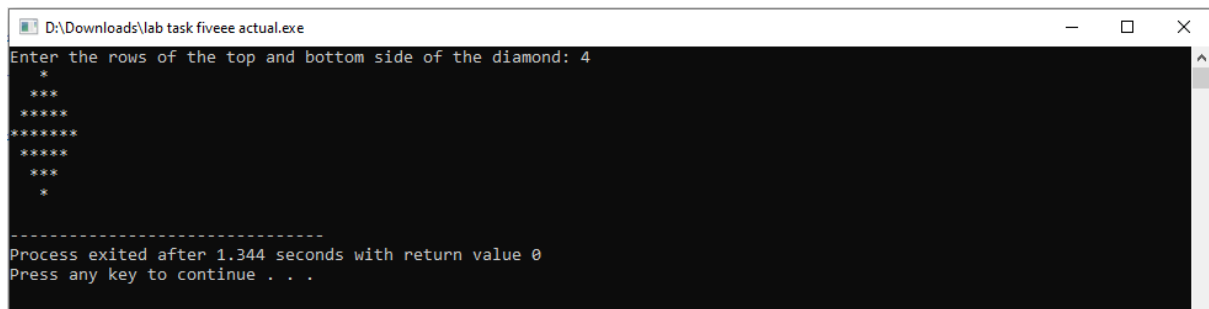
```
            for(int y=1;y<=2*x-1;y++){
```

```
                cout<<"*";
```

```
            }
```

```
        cout << endl;
    }

    return 0;
}
```



The screenshot shows a Windows command prompt window titled "D:\Downloads\lab task fiveee actual.exe". The prompt displays the text "Enter the rows of the top and bottom side of the diamond: 4". Below this, a diamond shape is printed using asterisks. The diamond consists of 4 rows of increasing width (1, 2, 3, 4 asterisks) followed by 4 rows of decreasing width (3, 2, 1, 0 asterisks). After the diamond, the program outputs "-----" followed by "Process exited after 1.344 seconds with return value 0" and "Press any key to continue . . .".

```
D:\Downloads\lab task fiveee actual.exe
Enter the rows of the top and bottom side of the diamond: 4
 *
 ***
 *****
 *****
 *****
 *****
 ***
 *
-----
Process exited after 1.344 seconds with return value 0
Press any key to continue . . .
```