Department of Mechanical Engineering



CS-114 - Fundamental of Programing

Home Tasks - 5 (Lab Manual 5)

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Department of Mechanical Engineering

HOME TASK 1:

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

Code:

```
#include <iostream>
       using namespace std;
       int main()
5 = {
6 | //
            HOME TASK 1
            int x;
            int y;
int hcf;
cout<<"Please enter the two numbers, and make sure the second number is the lower: "<<endl;</pre>
10
            cin>>x>>y;
            if(x>y){hcf=y;}
if(y>x){cout<<"Please follow the instructions"<<endl;return 0;}</pre>
14 —
15
16
                  if(x%hcf == 0 && y%hcf == 0 && hcf<=y){break;}
                 else{hcf-=1;}
            }while(x>1);
cout<<"hcf check: "<<hcf<<endl;
cout<<"The LCM is: "<<(x*y)/hcf<<endl;</pre>
18
19
20
            return 0;
```



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HOME TASK 2:

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

Code:

```
#include <iostream>
      using namespace std;
      int main()
 4
5 -
          HOME TASK 2
          int a;
          int n;
          int d;
          int sum;
10
          int t;
          cout<<"Please enter the first term: "<<endl;</pre>
13
          cin>>a;
          cout<<"Please enter the number of terms: "<<endl;</pre>
14
15
          cin>>n;
          cout<<"Please enter the common difference: "<<endl;</pre>
16
          cin>>d;
          for(int i = 1; i <= n; i+=1){
18 -
19
              t = a + (i-1)*d;
20
              sum = sum+t;
          cout<<"The sum is :"<<sum<<endl;</pre>
23
          return 0;
24
25
```

```
Please enter the first term:

1

Please enter the number of terms:

10

Please enter the common difference:

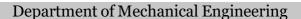
2

The sum is :100

------

Process exited after 9.133 seconds with return value 0

Press any key to continue . . .
```





HOME TASK 3:

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

Code:

```
#include <iostream>
      using namespace std;
      int main()
 5 = {
6 | //
          HOME TASK 3
           int rows;
           int x;
          cout<<"Please enter the rows of the pyramid (only odd numbers):"<<endl;</pre>
10
           if(rows % 2 == 0 || rows <1){cout<<"Please enter a valid number"<<endl; return 0;}
11
12
13
               for(int k=0; k<=rows/2; k+=1){
                   for(int i=rows/2-k; i>0; i-=1){
14
                        cout<<" ";}
15
16 —
17
18 —
                    for(int z=1; z<=4*k+2; z+=2){
                       if(z%2==0){continue;}
cout<<"*";}
                    cout<<endl;}
19
20
21
22 _____
               for(int k=0; k<rows/2; k+=1){
                   for(int i=-1; i<k; i+=1){
    cout<<" ";}
24
25
26
                    for(int z=rows-2*k-2; z>0; z-=1){
                       cout<<"*";}
27
28
                   cout<<endl;}
29
30
           return 0;
```

```
Please enter the rows of the pyramid (only odd numbers):

*

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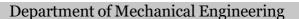
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```





HOME TASK 4:

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

Code:

```
1
      #include <iostream>
 2
      using namespace std;
      int main()
 5 -
     {
// HOME TASK 4
 6
          int num;
8
          int bin;
9
          int rem;
          int t = 1;
cout<<"Please enter the number: "<<endl;</pre>
10
11
          cin>>num;
12
13 -
          do{
14
              rem = num % 2;
15
              num = (num-rem)/2;
16
              bin = bin + rem*t;
              t=t*10;
          }while(num >= 1);
18
          cout<<"The number in binary is: "<<bin<<endl;</pre>
19
20
          return 0;
```