

Lab Manual #05

“Home Tasks”



Course: **Fundamentals of Programming (CS 114)**

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Task 1

Input:

```
vscode > h1.cpp
1  #include<iostream>
2  using namespace std;
3  int main()
4  {
5      int number1,number2,x,y,HCF,LCM,temp;
6      cout <<"enter any two number:";
7      cin>>number1>>number2;
8      x=number1;
9      y=number2;
10     while(y!=0){
11         temp=y;
12         y=x%y;
13         x=temp;}
14     HCF=x;
15     LCM=(number1*number2)/HCF;
16     cout<<"HCF="<<HCF<<endl;
17     cout<<"LCM"<<LCM<<endl;
18     return 0;
19 }
20
21
22
```

Output:

```
OUTPUT  DEBUG CONSOLE  TERMINAL 3  PORTS
> TERMINAL
PS C:\Users\muham\Documents\Fundamentals of Programming\FOP-Lab-Abdullah> cd "c:\Users\muham\Documents\Fundamentals of Programming\FOP-Lab-Abdullah\.vscode\" ; if
($?) { g++ ht1.cpp -o ht1 } ; if ($?) { .\ht1 }
enter any two number:3
5
HCF=1
LCM15
PS C:\Users\muham\Documents\Fundamentals of Programming\FOP-Lab-Abdullah\.vscode> cd "c:\Users\muham\Documents\Fundamentals of Programming\FOP-Lab-Abdullah\.vscode\" ; if
($?) { g++ ht1.cpp -o ht1 } ; if ($?) { .\ht1 }
enter any two number:
```

Task 2

Input:

```
vscode > g++ ht2.cpp
1  #include <iostream>
2  using namespace std;
3
4  int main()
5  {
6      int n,x,d;
7
8      cout<< "enter the number of terms in the series: ";
9      cin>> n;
10     cout<< "enter the first term of the series: ";
11     cin>> x;
12     cout<< "enter the common difference between terms: ";
13     cin>> d;
14     int sum = (n*(2*x+(n-1)*d))/2;
15     cout<< "The sum of the Arithmetic Progression series is: "<< sum << endl;
16
17     return 0;
18 }
19
```

***Output:

```
PS C:\Users\muham\Documents\Fundamentals of Programming\FOP-Lab-Abdullah> cd "c:\Users\muham\Documents\Fundamentals of Programming\FOP-Lab-Abdullah\.vscode\"
($?) { g++ ht2.cpp -o ht2 } ; if ($?) { .\ht2 }
enter the number of terms in the series: 4
enter the first term of the series: 1
enter the common difference between terms: 1
The sum of the Arithmetic Progression series is: 10
PS C:\Users\muham\Documents\Fundamentals of Programming\FOP-Lab-Abdullah\.vscode>
```

*** (Series taken is 1,2,3,4)

Task 3

Input:

```
.vscode> C:\ht3.cpp
1  #include <iostream>
2  using namespace std;
3
4  int main()
5  {
6      int row,space,col;
7
8      for(row=1;row<=4;row++){
9          for(space=1;space<=4-row;space++){
10             cout<<" ";
11             for(col=1;col<=row*2-1;col++){
12                 cout<<"*";
13             }
14             cout<<endl;
15         }
16         for(row=3;row>=1;row--){
17             for(space=1;space<=4-row;space++){
18                 cout<<" ";
19                 for(col=1;col<=2*row-1;col++){
20                     cout<<"*";
21                 }
22                 cout<<endl;
23             }
24         }
25     }
26 }
```

Output:

```
> TERMINAL
PS C:\Users\muham\Documents\Fundamentals of Programming\FOP-Lab-Abdullah> cd "c:\Users\muham\Documents\Fundamentals of Programming\FOP-Lab-Abdullah\.vscode"
($?) { g++ ht3.cpp -o ht3 } ; if ($?) { .\ht3 }
*
***
*****
*****
***
*
PS C:\Users\muham\Documents\Fundamentals of Programming\FOP-Lab-Abdullah\.vscode>
```

Task 4

Input:

```
.vscode > G+ ht4.cpp
1  #include<iostream>
2  using namespace std;
3  int main()
4  {
5      int num,bn=0,rem,n=1;
6      cout<<"enter a decimal number: ";
7      cin>>num;
8      while(num!=0){
9          rem=num%2;
10         bn=bn+rem*n;
11         num=num/2;
12         n=n*10;
13     }
14     cout<<"binary number is= "<<bn;
15
16     return 0;
17
18 }
```

Output:

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
>  TERMINAL
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\muham\Documents\Fundamentals of Programming\FOP-Lab-Abdullah> & 'c:\Users\muham\.vscode\extensions\ms-vscode.cpptools\bin\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-sbdi5ivo.vlp' '--stdout=err=Microsoft-MIEngine-Error-34wnei4q.cjv' '--pid=Microsoft-MIEngine-Pid-4d0s2rpk.slv' '--dbgExe=C:\msys64\bin\gdb.exe'
enter a decimal number: 100
binary number is= 1100100
PS C:\Users\muham\Documents\Fundamentals of Programming\FOP-Lab-Abdullah> |
```