TASK 01

Compile all sample programs.

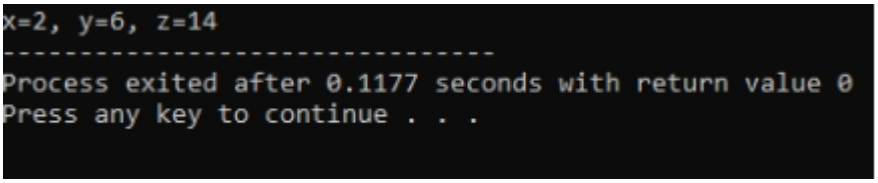
Sample 1:

Code:

```
#include<iostream>
using namespace std;
void duplicate (int& a, int& b, int& c)
{
  a=a*2;
  b=b*2;
  c=c*2;
}

int main()
{
        int x=1, y=3, z=7;
         duplicate (x, y, z);
```

```
    cout << "x=" << x << ", y=" << y << ", z=" << z;

    return 0;

}
```

Output:



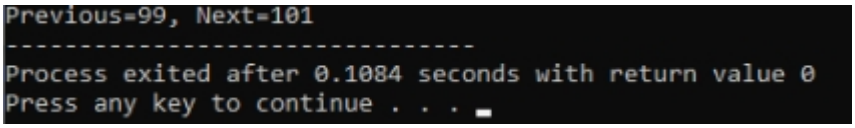
Sample 2:

Code:

```
#include "stdafx.h"

#include<iostream>

using namespace std;

void prevnext (int x, int& prev, int& next)

{

  prev = x-1;

  next = x+1;

}
```

```
int _tmain(int argc, _TCHAR* argv[])
{
        int x=100, y, z;
  prevnext (x, y, z);
  cout << "Previous=" << y << ", Next=" << z;

        system("pause");
        return 0;
}
```

Output:



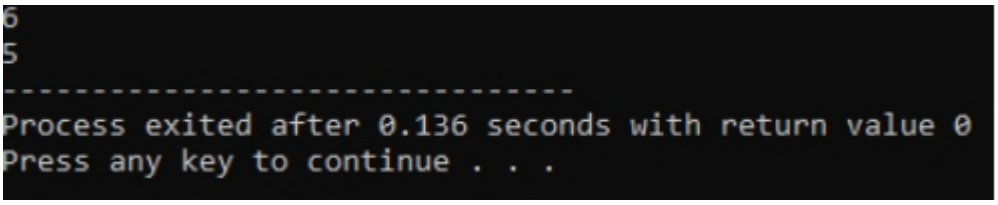
Sample 3:

Code:

```
#include<iostream>
using namespace std;
int divide (int a, int b=2)
{
  int r;
```

```
  r=a/b;
  return r;
            }

int main()
{
            cout << divide (12);
            cout << endl;
            cout << divide (20,4);
            return 0;
}
```

Output:



Sample 4:

Code:

```
#include<iostream>
using namespace std;
```

```
int operate (int a, int b)
{
  return a*b;
}

float operate (float a, float b)
{
  return a/b;
}

int main()
{
        int x=5,y=2;
        float n=5.0,m=2.0;
        cout << operate (x,y);
        cout << "\n";
        cout << operate (n,m);
        cout << "\n";
        return 0;
}
```

Output:

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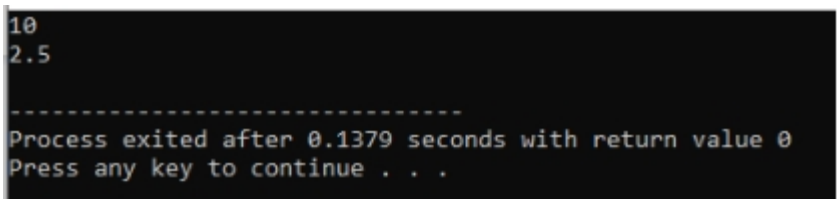

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Sample 5:

Code:

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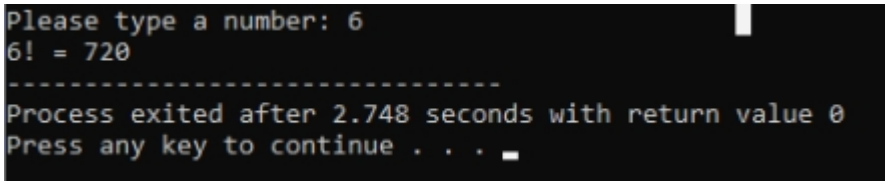
```
#include<iostream>

using namespace std;

int fact (int a)

{

  if (a==0)

   return 1;

  else

   return a*fact(a-1);

}


int main()

{

  int n;

  cout << "Please type a number: ";

  cin >> n;

  cout << n << "! = " << fact (n);
```

```
  return 0;
}
```

Output:



TASK 02

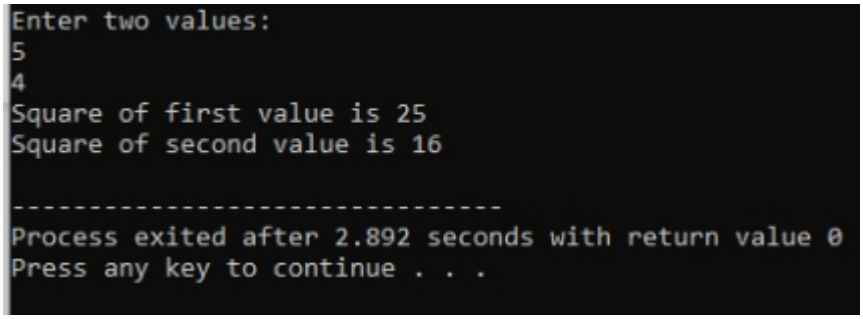
Create a program with a function which calculate the square of both the values entered by user. (Using call be reference)

Code:

```
#include<iostream>
using namespace std;
void func (int &a, int &b)
{
    cout<<"Square of first value is "<<a*a<<endl;
    cout<<"Square of second value is "<<b*b<<endl;
}
```

```
int main()

{

        int a,b;

  cout<<"Enter two values: \n";

  cin>>a>>b;

  func(a,b);

        return 0;

}
```

Output:



TASK 03

Write a program with a function volume( ) to calculate the volume of a cube. Use Function Overloading concept .Call this function with zero, one, two and three arguments and display the volume returned in the main( ). Use length of side =1 for definition with no arguments.

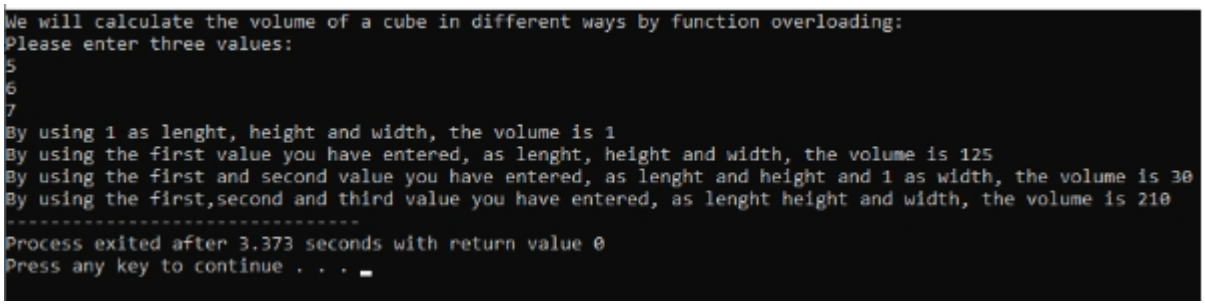
v= 〖sxsxs=s〗 ^3 ,s = length of side

Code:

```
#include<iostream>
using namespace std;
int volume ()
{
   int a=1;
   return a*a*a;
}
int volume (int a)
{
   return a*a*a;
}
int volume (int a, int b)
{
            int c=1;
   return a*b*c;
}
int volume (int a, int b,int c)
{
   return a*b*c;
}
int main()
{
            int a,b,c;
```

```
    cout<<"We will calculate the volume of a cube in different ways by function overloading: \n";

    cout<<"Please enter three values: \n";

    cin>>a>>b>>c;

    cout<<"By using 1 as lenght, height and width, the volume is "<<volume()<<endl;

    cout<<"By using the first value you have entered, as lenght, height and width, the volume is
"<<volume(a)<<endl;

    cout<<"By using the first and second value you have entered, as lenght and height and 1 as width, the
volume is "<<volume(a,b)<<endl;

    cout<<"By using the first,second and third value you have entered, as lenght height and width, the
volume is "<<volume(a,b,c);

            return 0;

}
```

Output:



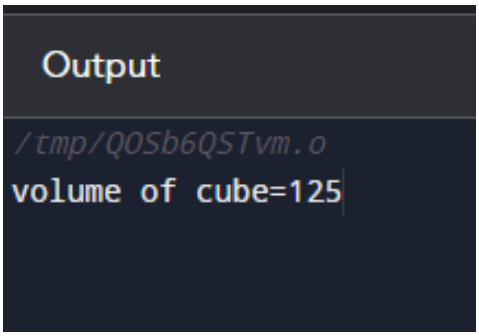
TASK 04

Perform Task # 03 by using Default value concept call the function with 0,1, 2 and 3 Arguments.

Code:

```
#include<iostream>

using namespace std;

int vol(int s=5){

    int c=s*s*s;

            return c;

}

int main(){

    int s;

     cout<<"volume of cube="<<vol();/*we are not passing any value so it will take the default value to perform function.*/

            return 0;

}
```

Output:



TASK 05

Create a program with a function which calculate the power of a number, both number and power should be entered by user at run time. (Note : Use Recursion for this program)

Code:

```
#include<iostream>
```

```
using namespace std;
int power(){
	int a,b,mul=1;char yn;
	cout<<"Enter a number: \n";
	cin>>a;
	cout<<"Enter the power: \n";
	cin>>b;
	for(int i=1;i<=b;i++){
		mul*=a;
	}
	cout<<"Power = "<<mul<<endl<<endl;
	cout<<"Do you want to calculate the power of any other number?\n";
	cout<<"If 'yes' type 'y' , if 'no' type 'n' \n";
	cin>>yn;
	if(yn=='y'){
		cout<<endl;
		power();
	}
	else if (yn=='n'){
		cout<<"\nThank you! \n";
	}
	else
	   cout<<"\nInvalid";
}
main(){
```

```
    power();
}
```

Output: