ASSIGNMENT 6

// Assignment 6 program 1

/* Declare a class called logic_gate to represent logic gates.

The class has three data members - input1, input2 and input3 to represent three inputs to the logic gate.

The class also has a virtual function member called get_gate_output.

Derive two classes from the base class logic_gate, namely, and_gate and or_gate to represent 'logical and gate' and 'logical or gate' respectively.

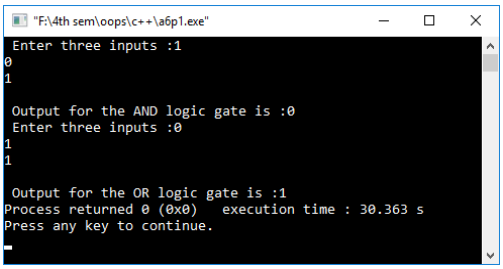
Define function get_gate_output in both of these classes to get the output of the gate.

Show use of above classes and functions to demonstrate dynamic polymorphism in function main. */

```
#include<iostream>
#include<stdio.h>
#include<conio.h>
using namespace std;
class logic_gate{

      public:
         int input1,input2,input3;
         void get_input(){
               cout << "\n Enter three inputs :";
                  cin >> input1 >> input2 >> input3;

         }
        virtual  void get_gate_output()=0;

};
class and_gate:public logic_gate{
```

```
public:
   void get_gate_output(){
          int o1;
          o1=input1 & input2 & input3;
           cout << "\n Output for the AND logic gate is :" << o1;
   }
};
class or_gate:public logic_gate{
   public:
      void get_gate_output(){
          int o2;
          o2=input1 | input2 | input3;
           cout << "\n Output for the OR logic gate is :" << o2;
}
};
int main()
{
      logic_gate *ptr;
      and_gate ag;
      or_gate og;
      ptr = &ag;
      ptr -> get_input();
      ptr -> get_gate_output();
   ptr = &og;
```

```
    ptr -> get_input();
    ptr -> get_gate_output();
                return 0;
}
```



```
/*Create class ITEM with item_code, item_rate and
quantity as data members.
Create an array of pointers to objects of class ITEM.
Write a member function which will calculate the
amount of item.
Print item_code and amount of item.*/
#include<iostream>
#include<conio.h>
using namespace std;
class item
{
int code;
float rate;
int quantity;
public:
void getdata(int c, float r, int q)
{
code = c; rate = r; quantity = q;
}
void calculate()
{
rate = quantity * rate;
}
void show()
{
```

```
cout << "\nCode : " << code << "\n";
cout << "Price: " << rate << "\n";
}
};
const int size = 2;
int main()
{
item *p = new item[size];
item *d = p;
int x,z,i;
float y;
//system("cls");
for(i=0; i<size; i++)
{

cout << "\nInput code for item " << i+1 << ": ";
cin >> x;
cout << "\nInput price for item " << i+1 << ": ";
cin >> y;
cout << "\nInput quantity for item " << i+1 << ": ";
cin >> z;
p -> getdata(x,y,z);
p++;
}
```

```
for(i=0; i<size; i++)
{
cout << "\nTotal price for item " << i+1 << ": ";
d -> calculate();
d -> show();
d++;
}
getch();
return 0;
}
```