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1. Create a class named clsArea which has function named area(), used to calculate the area. Create appropriate derived classes and implement late binding to find the area of rectangle, triangle and circle.

1.
```
#include <iostream>
#define PI 3.14159
using namespace std;
class ClsArea
{
public:
    virtual void area()= 0;
};
class Rectangle : public
ClsArea
{
public:
    float length, breadth;
    void area()
    {
        cout << "Enter length & breadth : ";
        cin >> length >> breadth;
        cout << length * breadth << endl;
    }
};
class square : public
Cls Area
{
    float side;
    void area()
    {
        cout << "Enter side: ";
        cin >> side;
        cout << side * side << endl;
    }
};
```

```
class circle : public
ClsArea
{
    float radius;
    void area()
    {
        cout << "Enter Radius: ";
        cin >> radius;
        cout << PI * radius * radius << endl;
    }
};
int main()
{
    ClsArea *ptr;
    ptr = new Rectangle;
    ptr->area();
    ptr = new square;
    ptr->area();
    ptr = new circle;
    ptr->area();
    return 0;
}
```

Write a c++ program to perform complex numbers addition (+) using operator overloading.

```
#include <iostream>
#include <sstream>
#include <cmath>
using namespace std;
class complex{
    private:
        int real, imag;
    public:
    complex(){
        real = imag = 0;
    }
    complex (int r, int i){
        real= r;
        imag = i;
    }
    string to_string(){
        stringstream ss;
        if (imag >= 0)
            ss << "(" << real << "+" << imag << "i)";
        else
            ss << "(" << real << "-" << abs(imag) << "i)";
        return ss.str();
    }
    Complex operator + (complex c2){
        Complex ret;
        ret.real= real + c2.real;
        ret.imag = imag + c2.imag;
        return ret;
    }
};
```

```
int main(){
    complex c1 (8,-5), c2(2,3);
    complex res = c1 +c2;
    cout << res.to_string();
```

Input

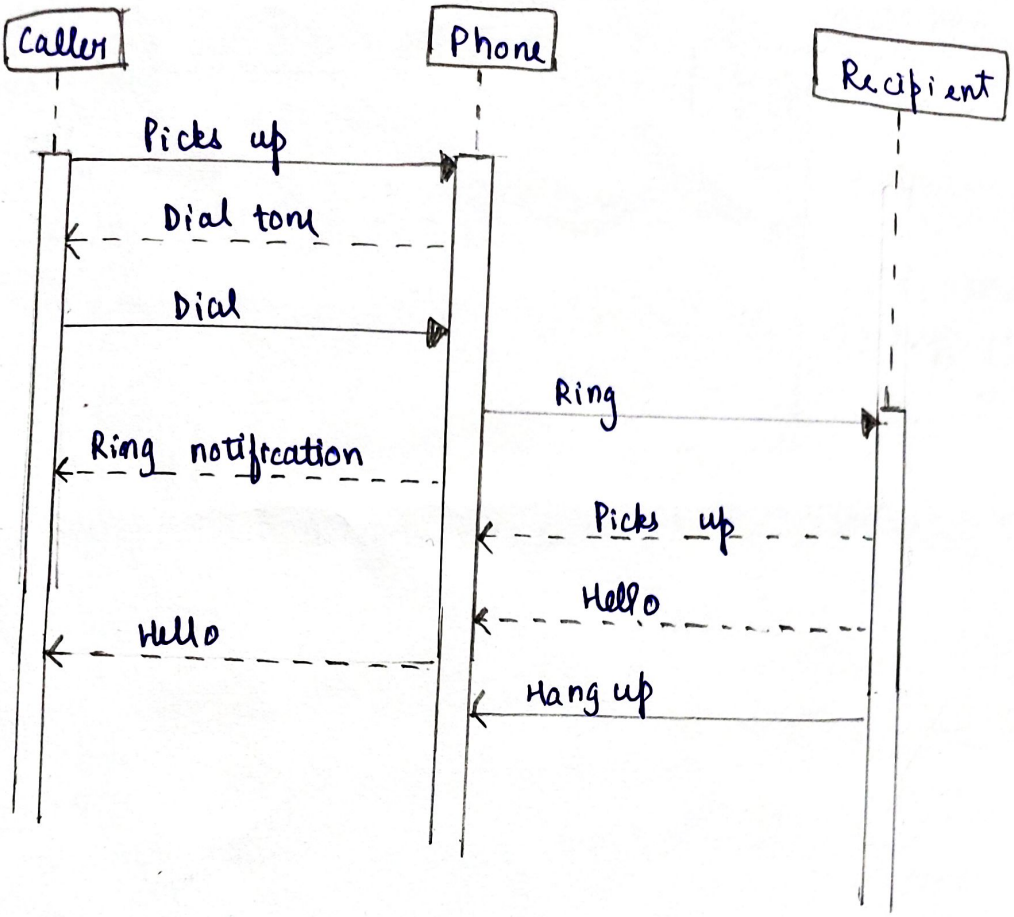
c1 (8,-5), c2 (2,3)

Output

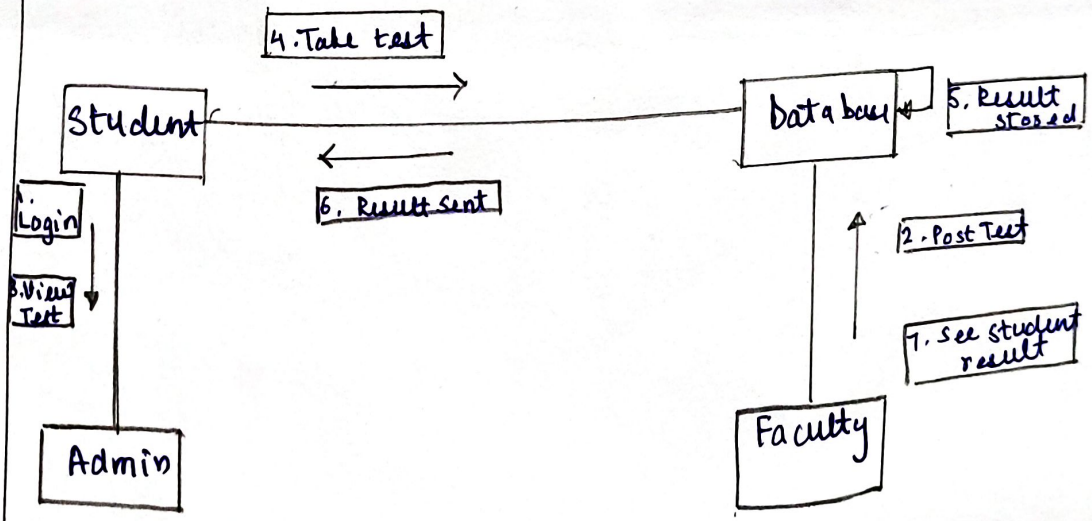
(10.-2i)

```
#include <iostream>
using namespace std;
class Shape {
        float width, height;
        public:
         set Dimension (float w, height h){
                    width = w;
                    height = h; }

};
class Rectangle : public Shape {
      public:
        float area (){
            return (width * height); }

}
int main(){
    int height , width ;
    cout << "Enter height and width";
    cin>> height >> width;
    Rectangle rectangle;
    rectangle.Setdimension (height, width);
    cout << "Area" << rectangle.area() << endl;
}
```

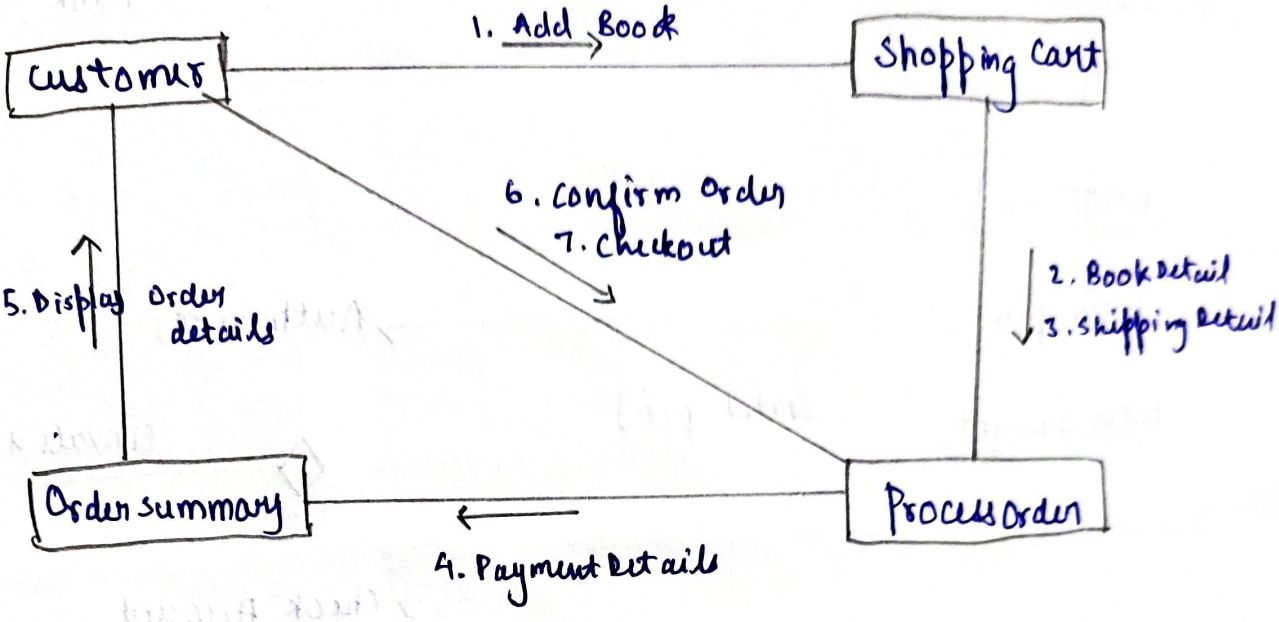
5.



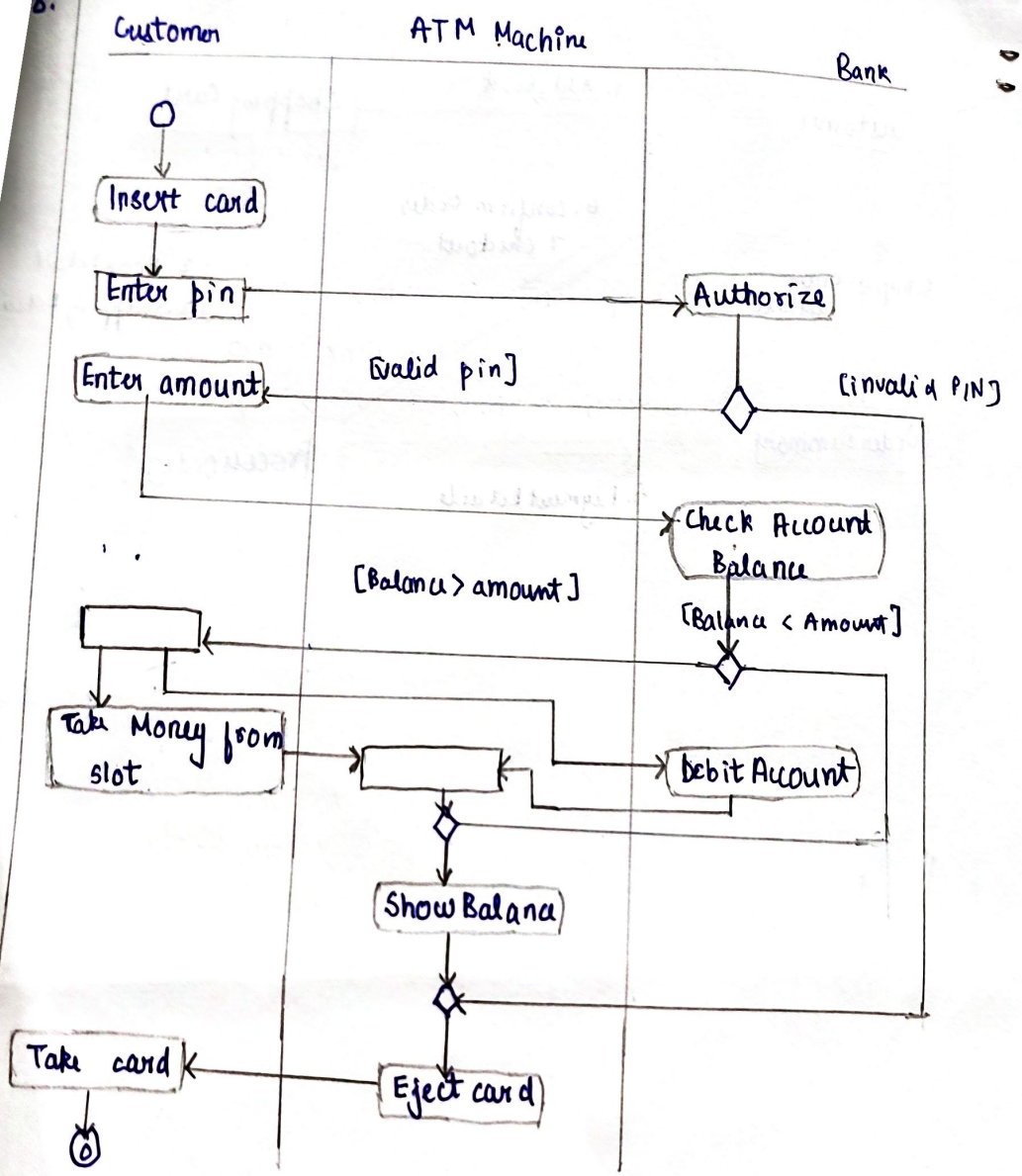
5.



reduce our ecological ... this has excited stock


Customer
1. Add Book
Shopping Cart
6. Confirm Order
7. Checkout
5. Display Order details
2. Book Detail
3. Shipping Detail
Order summary
Process Order
4. Payment Details

8.


Customer
ATM Machine
Bank
Insert card
Enter pin
Authorize
Enter amount
[valid pin]
[invalid PIN]
Check Account Balance
[Balance > amount]
[Balance < Amount]
Take Money from slot
Debit Account
Show Balance
Take card
Eject card