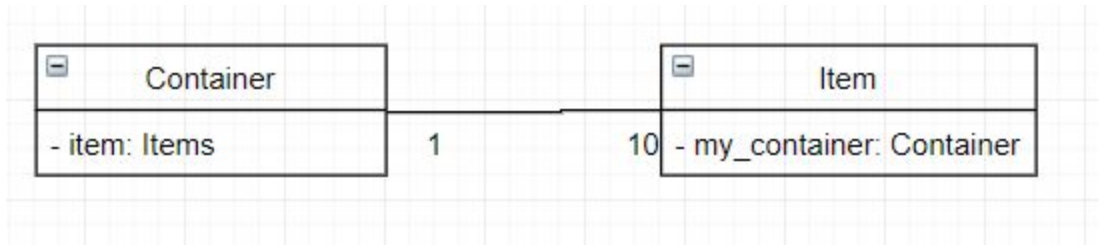


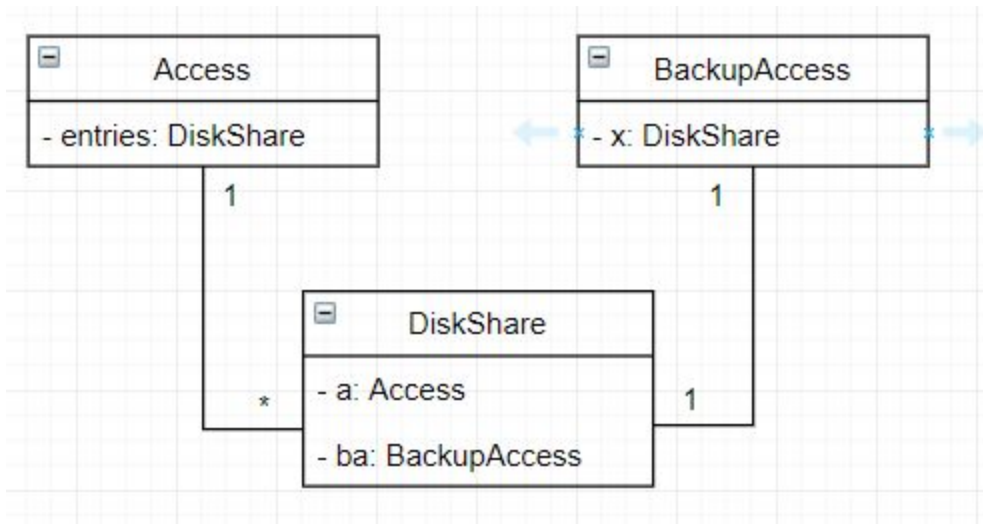
Software Engineering - Homework 1

Partners: Kevin Kleiman and Arynn Collins

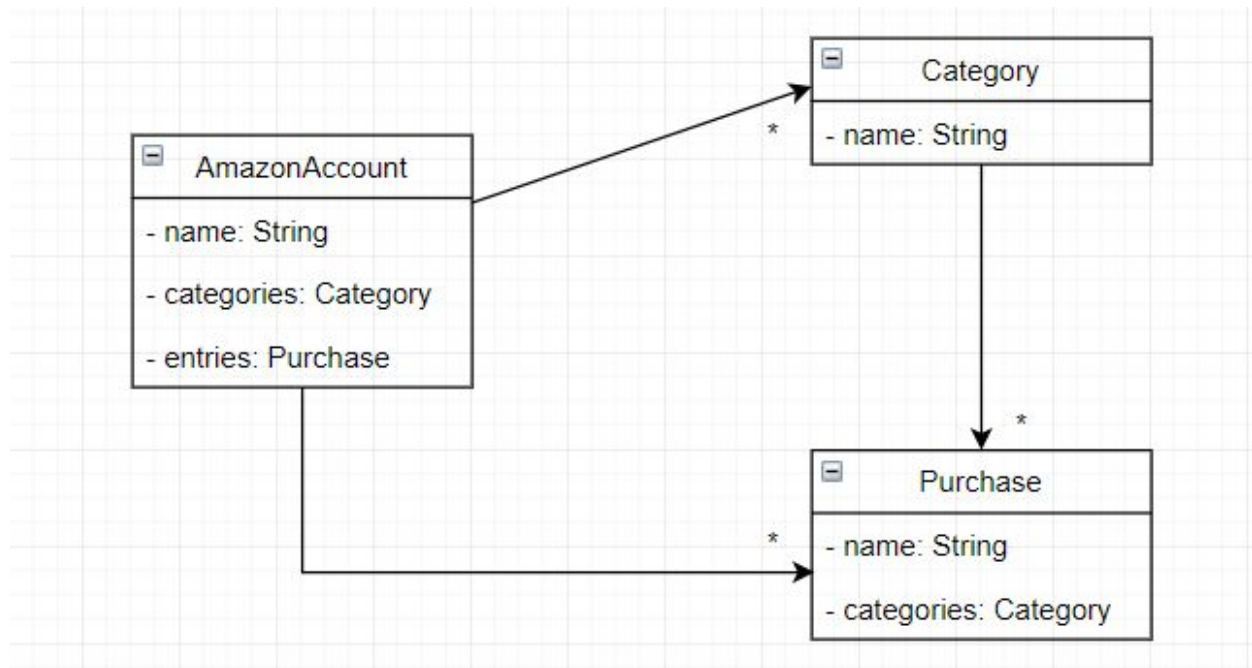
Question 1



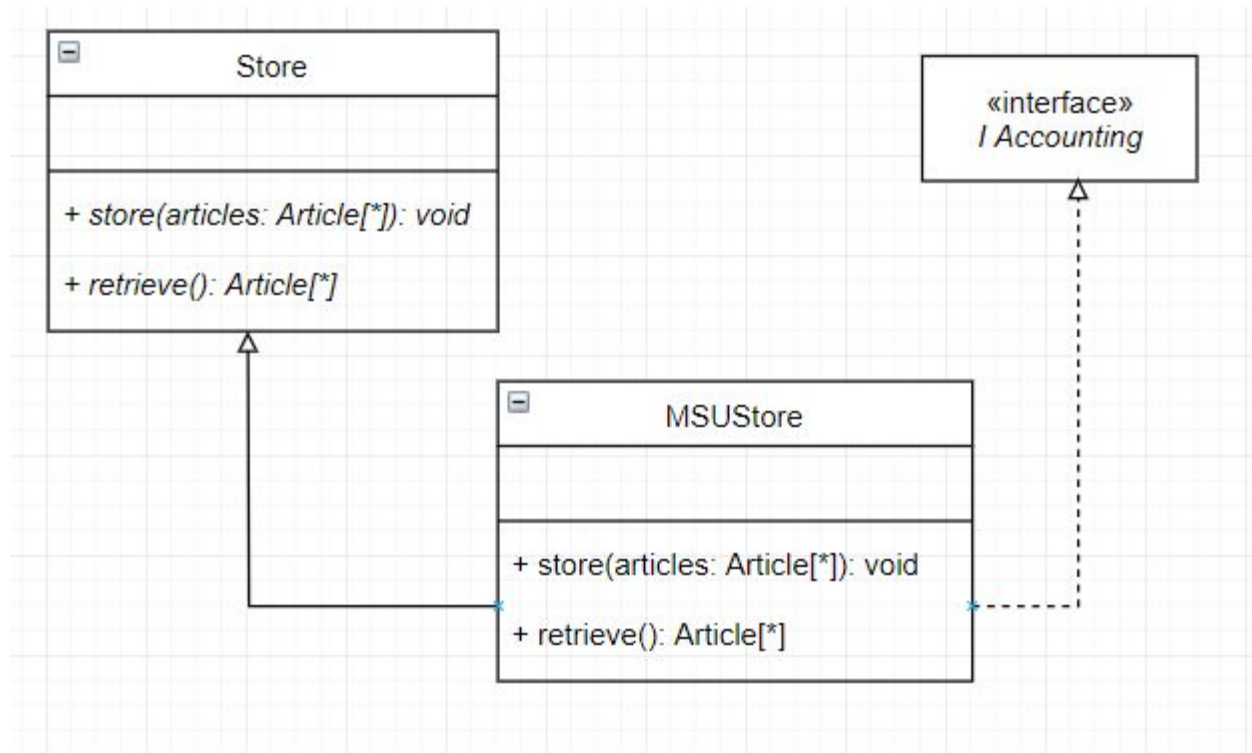
Question 2



Question 3



Question 4



Question 5

```
class Company {
    public String name;
    public Address headquarters;
    public Car[] car;
    public Truck[] truck;
    public Motorbike[] motorbike;
    public Employee[] employee;
    public Customer[] customer;
    public VehicleRentalService service; //composition variable

    //constructor for the Company class
    public Company() {
        service = new VehicleRentalService();
    }
}

interface IRentable {
    public abstract void rent();
}

class Vehicle implements IRentable { }

class Truck extends Vehicle {
    public UnlimitedNatural weight;
    public UnlimitedNatural power;
    public String manufacturer;
    public String regNo;
}

class Car extends Vehicle {
    public CarKind kind;
    public UnlimitedNatural noSeats;
    public UnlimitedNatural power;
    public String manufacturer;
    public String regNo;
}
```

```
class Motorbike extends Vehicle {
    public MbKind kind;
    public UnlimitedNatural cylinderCap;
    public UnlimitedNatural power;
    public String manufacturer;
    public String regNo;
}

class Service {
    public Customer customer;
}

class VehicleRentalService extends Service {
    public Vehicle vehicle;

    // methods for VehicleRentalService
    public void offerCar() { }
    public void offerMotorbike() { }
    public void offerTruck() { }
}

class Person {
    public String name;
    public String email;
    public Address address;
}

class Address {
    public Person[] person;
    public String street;
    public String postalCode;
    public String city;
}

class Employee extends Person { }
```

```
class Customer extends Person {  
    public BankAccount bankAccount; //composition variable  
  
    //constructor for Customer class  
    public Customer() {  
        bankAccount = new BankAccount();  
    }  
}
```

```
class BankAccount {  
    public UnlimitedNatural number;  
    public String depositor;  
    public String bank;  
}
```

```
class Subcontractor extends Employee extends Customer { }  
// This class can't implement double inheritance in Java but can in  
other languages, such as C++, but this is just pseudocode.
```