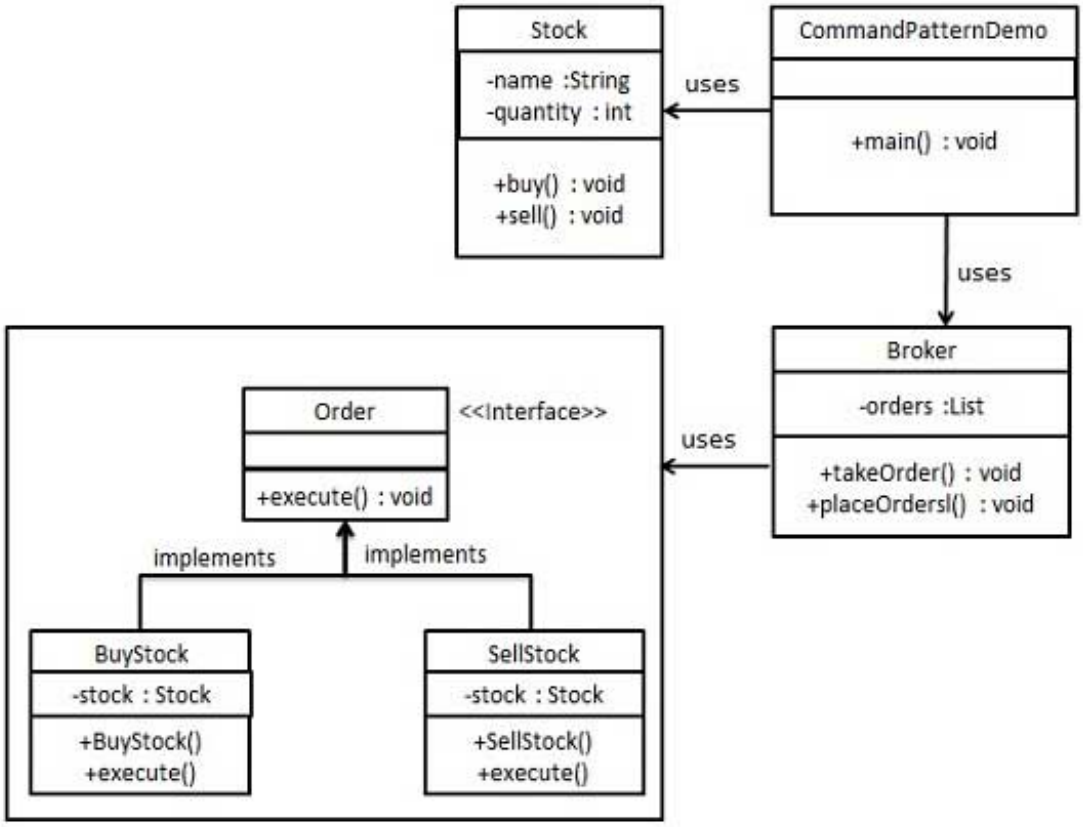
COMMAND PATTERN

Command pattern is a data driven design pattern and falls under behavioral pattern category. A request is wrapped under a object as command and passed to invoker object. Invoker object looks for the appropriate object which can handle this command and pass the command to the corresponding object and that object executes the command.

Implementation

We've created an interface *Order* which is acting as a command. We've created a *Stock* class which acts as a request. We've concrete command classes *BuyStock* and *SellStock* implementing *Order* interface which will do actual command processing. A class *Broker* is created which acts as a invoker object. It can take order and place orders.

Broker object uses command pattern to identify which object will execute which command based on type of command. *CommandPatternDemo*, our demo class will use *Broker* class to demonstrate command pattern.



Step 1

Create a command interface.

Order.java

```
public interface Order {
   void execute();
}
```

Step 2

Create a request class.

Stock.java

```
public class Stock {

   private String name = "ABC";
   private int quantity = 10;

   public void buy(){
      System.out.println("Stock [ Name: "+name+",
         Quantity: " + quantity +" ] bought");
   }
   public void sell(){
      System.out.println("Stock [ Name: "+name+",
         Quantity: " + quantity +" ] sold");
   }
}
```

Step 3

Create concrete classes implementing the *Order* interface.

BuyStock.java

```
public class BuyStock implements Order {
   private Stock abcStock;

   public BuyStock(Stock abcStock){
      this.abcStock = abcStock;
   }

   public void execute() {
      abcStock.buy();
   }
}
```

SellStock.java

```
public class SellStock implements Order {
   private Stock abcStock;

   public SellStock(Stock abcStock){
      this.abcStock = abcStock;
   }

   public void execute() {
      abcStock.sell();
   }
}
```

Step 4

Create command invoker class.

Broker.java

```
import java.util.ArrayList;
import java.util.List;

   public class Broker {
   private List<Order> orderList = new ArrayList<Order>();

   public void takeOrder(Order order){
      orderList.add(order);
   }

   public void placeOrders(){
      for (Order order : orderList) {
         order.execute();
      }
      orderList.clear();
```

```
    }
}
```

Step 5

Use the Broker class to take and execute commands.

CommandPatternDemo.java

```
public class CommandPatternDemo {
   public static void main(String[] args) {
      Stock abcStock = new Stock();

      BuyStock buyStockOrder = new BuyStock(abcStock);
      SellStock sellStockOrder = new SellStock(abcStock);

      Broker broker = new Broker();
      broker.takeOrder(buyStockOrder);
      broker.takeOrder(sellStockOrder);

      broker.placeOrders();
   }
}
```

Step 6

Verify the output.

```
Stock [ Name: ABC, Quantity: 10 ] bought
Stock [ Name: ABC, Quantity: 10 ] sold
```