

## WareHouse.java

```
/**
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 * Assignment#2
 * CISC 3130
 */

import java.io.BufferedReader;
import java.io.File;
import java.io.FileReader;
import java.io.IOException;
import java.util.HashMap;
import java.util.Map;
import java.util.Scanner;

public class WareHouse {
    public static void main(String[] args) throws IOException {

        Scanner master = new Scanner(new File("src/data.txt"));
        String input;
        Map<String, int[]>stock=new HashMap<String, int[]>();
        while ((input=master.nextLine()) !=null) {
            String[] line=input.split("\\s+");
            String city;
            int[] p=new int[3];
            if(line.length==6) {
                city=line[1]+line[2];
                p[0]=Integer.valueOf(line[3]);
                p[1]=Integer.valueOf(line[4]);
                p[2]=Integer.valueOf(line[5]);
            }
            else {
                city=line[1];
                p[0]=Integer.valueOf(line[2]);
                p[1]=Integer.valueOf(line[3]);
                p[2]=Integer.valueOf(line[4]);
            }
            if("s".equals(line[0])) {
                if(stock.containsKey(city)) {
                    int[] t=stock.get(city);
                    for(int i=0;
                        i<3;
                        i++) t[i]+=p[i];
                }
            }
        }
    }
}
```

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    }
    else {
        stock.put(city, p);
    }
    System.out.println(city+" "+stock.get(city)[0]+" "+stock.get(city)
[1]+" "+stock.get(city)[2]);
}
else if("o".equals(line[0])) {
    double price=0.0;
    boolean x=true;
    int[] t=stock.get(city);
    if(t[0] >=p[0] && t[1] >=p[1] && t[2] >=p[2]) {
        for(int i=0;
            i<3;
            i++) {
                t[i] -=p[i];
                if(i==0) price+=(2*p[i]);
                if(i==1) price+=(7*p[i]);
                if(i==2) price+=(8.5*p[i]);
            }
        }
    }
    else {
        if(t[0] >=p[0]) {
            t[0] -=p[0];
            price+=(2*p[0]);
        }
        else {
            String cityTemp=findMaximum(stock, city,
p[0]-t[0], 0);
            if(null !=cityTemp) {
                System.out.println(p[0]-t[0] +"amount
of Item1 shipped from "+cityTemp+" to "+city);
                t[0]=0;
                int[]
cityTempstock=stock.get(cityTemp);
                price+=(2*p[0])+(0.1 * p[0]-t[0]);
                cityTempstock[0]--(p[0]-t[0]);
                stock.put(cityTemp, cityTempstock);
                System.out.println(cityTemp+"
"+stock.get(cityTemp)[0]+" "+stock.get(cityTemp)[1]+"
"+stock.get(cityTemp)[2]);
            }
            else x=false;
        }
    }
}

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        if(t[1] >=p[1]) {
            t[1] -=p[1];
            price+=(7*p[1]);
        }
        else {
            String cityTemp=findMaximum(stock, city,
p[1]-t[1], 1);
            if(null !=cityTemp) {
                System.out.println(p[1]-t[1] +"amount
of Item2 shipped from "+cityTemp+" to "+city);
                t[1]=0;
                int[]
cityTempstock=stock.get(cityTemp);
                price+=(7*p[1])+(0.1 * p[1]-t[1]);
                cityTempstock[1]-=(p[1]-t[1]);
                stock.put(cityTemp, cityTempstock);
                System.out.println(cityTemp+"
"+stock.get(cityTemp)[0]+" "+stock.get(cityTemp)[1]+"
"+stock.get(cityTemp)[2]);
            }
            else x=false;
        }
        if(t[2] >=p[2]) {
            t[2] -=p[2];
            price+=(8.5*p[2]);
        }
        else {
            String cityTemp=findMaximum(stock, city,
p[2]-t[2], 2);
            if(null !=cityTemp) {
                System.out.println(p[2]-t[2] +"amount
of Item3 shipped from "+cityTemp+" to "+city);
                t[2]=0;
                int[]
cityTempstock=stock.get(cityTemp);
                price+=(2*p[2])+(0.1 * p[2]-t[2]);
                cityTempstock[2]-=(p[2]-t[2]);
                stock.put(cityTemp, cityTempstock);
                System.out.println(cityTemp+"
"+stock.get(cityTemp)[0]+" "+stock.get(cityTemp)[1]+"
"+stock.get(cityTemp)[2]);
            }
            else x=false;
        }
    }

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        }
        System.out.println(city+" "+stock.get(city)[0]+"
"+stock.get(city)[1]+" "+stock.get(city)[2]);
        System.out.println("Price is "+price);
        if(!x) System.out.println("Order Unfilled for some
items");
    }
}
}

```

```

    static String findMaximum(Map<String, int[]> stock, String city,
int excess, int index) {
        int max=-1;
        String maxCity=null;
        for( String c: stock.keySet()) {
            if(!c.equals(city)) {
                int[] temp=stock.get(c);
                if(temp[index] >=max) {
                    max=temp[index];
                    maxCity=c;
                }
            }
        }
        if(max > excess) return maxCity;
        else return null;
    }
}

```

#### **Data.txt**

```

s NewYork 23 14 1
s Miami 25 25 25
s LosAngeles 40 13 17
s Houston 100 30 10
s Chicago 42 23 19
s New York 0 0 15
s Miami 13 17 21
o LosAngeles 15 10 15
o NewYork 12 24 8
o Houston 75 45 10
o Chicago 20 15 15
o NewYork 15 0 0
s LosAngeles 10 20 10
s Houston 0 30 40

```

o NewYork 15 15 25  
o Chicago 75 30 40  
s NewYork 20 15 20  
o Houston 10 20 10

### OUTPUT:

NewYork 23 14 1

Miami 25 25 25

LosAngeles 40 13 17

Houston 100 30 10

Chicago 42 23 19

NewYork 23 14 16

Miami 38 42 46

LosAngeles 25 3 2

Price is 227.5

10 amount of Item

2 shipped from Miami to NewYork

Miami 38 18 46

NewYork 11 0 8

Price is 262.4

15 amount of Item

2 shipped from Chicago to Houston

Chicago 42 -22 19

Houston 25 0 0

Price is 554.5

Chicago 22 -22 4

Price is 167.5

Order Unfilled for some items

4 amount of Item

1 shipped from Miami to NewYork

Miami 23 18 46

NewYork 0 0 8

Price is 31.5

LosAngeles 35 23 12

Houston 25 30 40

15 amount of Item

1 shipped from LosAngeles to NewYork

LosAngeles 20 23 12

15 amount of Item

2 shipped from Houston to NewYork

Houston 25 15 40

17 amount of Item

3 shipped from Miami to NewYork

Miami 23 18 21

NewYork 0 0 0

Price is 190.5

36 amount of Item

3 shipped from Houston to Chicago

Houston 25 15 0

Chicago 22 -22 0

Price is 84.0

Order Unfilled for some items

NewYork 20 15 20

5 amount of Item

2 shipped from LosAngeles to Houston

LosAngeles 20 3 12

10 amount of Item

3 shipped from Miami to Houston

Miami 23 18 11

Houston 15 0 0

Price is 183.0