



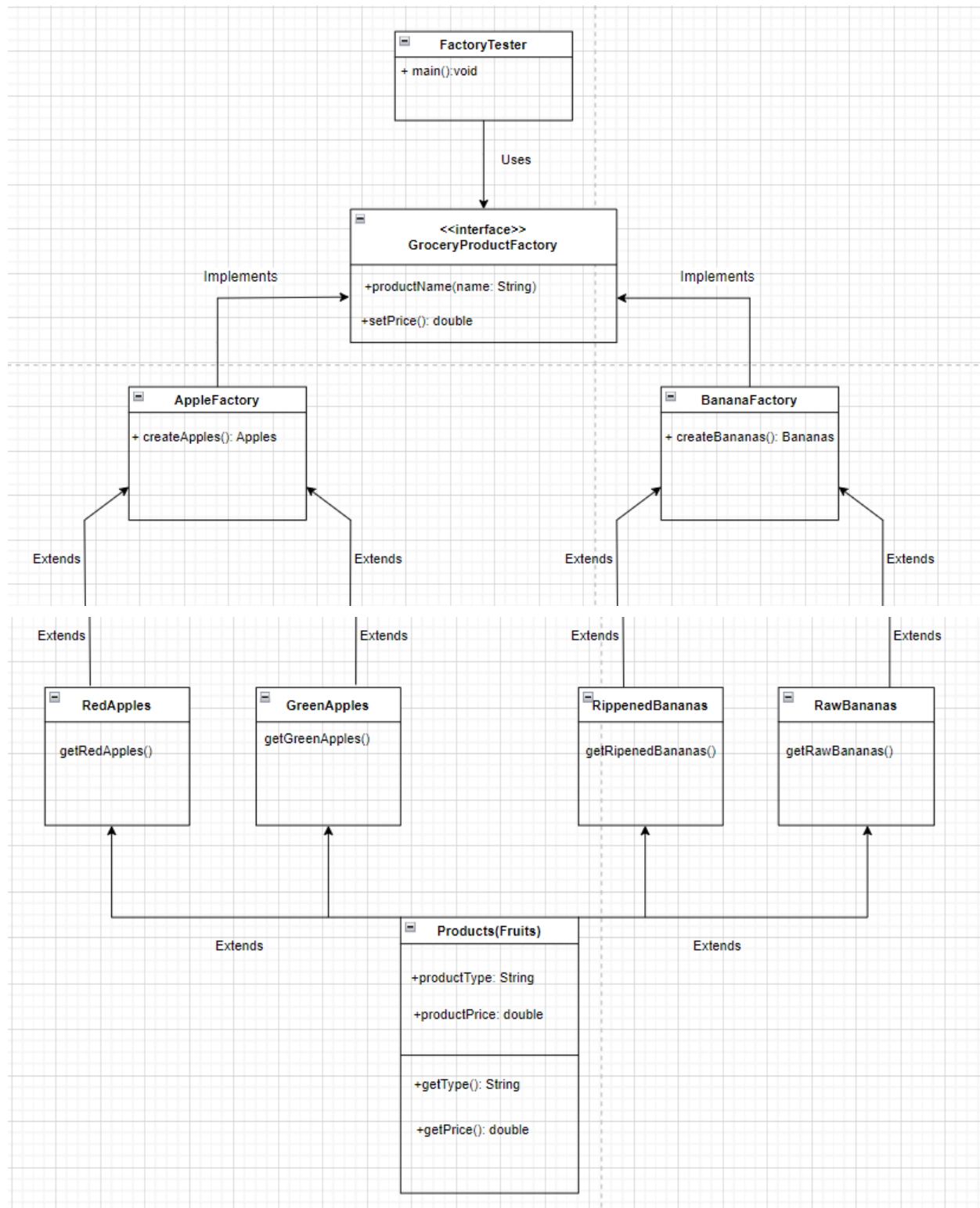
Software Design & Architecture  
Assignment#1 – Design Patterns

Due - October 6, 2022

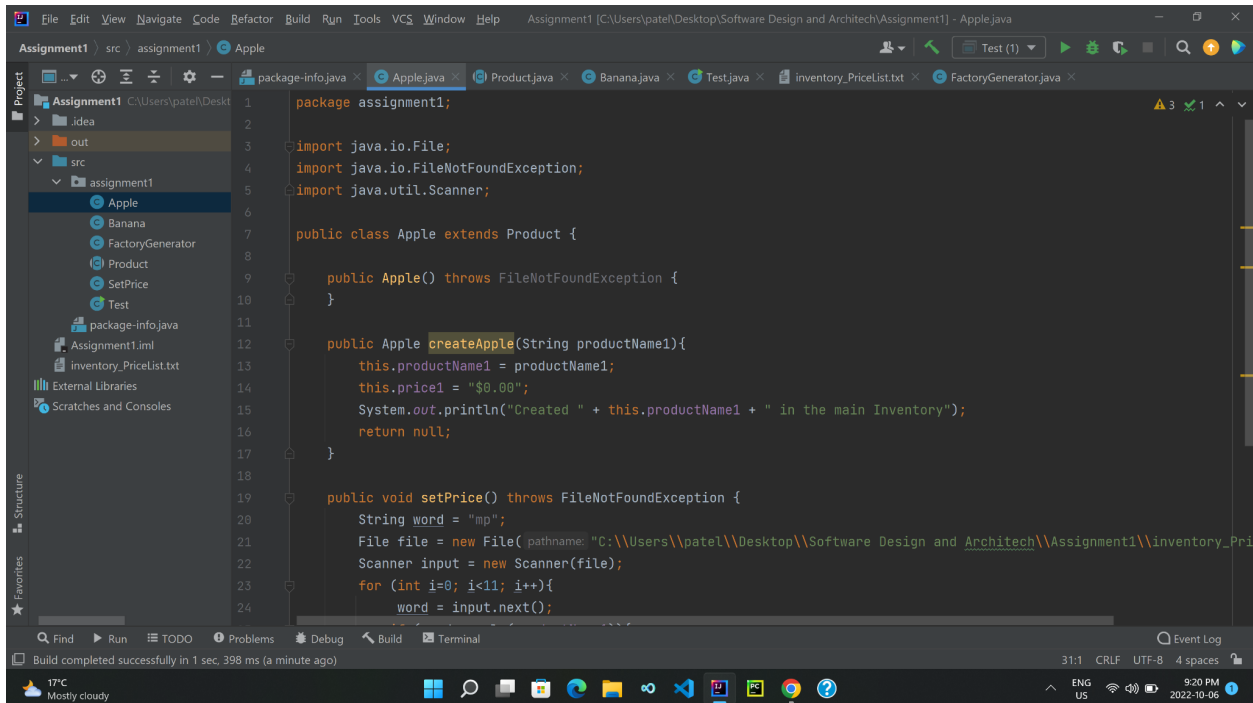
Group 30

Aqsa Asif  
Meet Patel  
Shahab Zafar

# Q1 - UML Diagram



## Q2 - Java Code:



```
package assignment1;

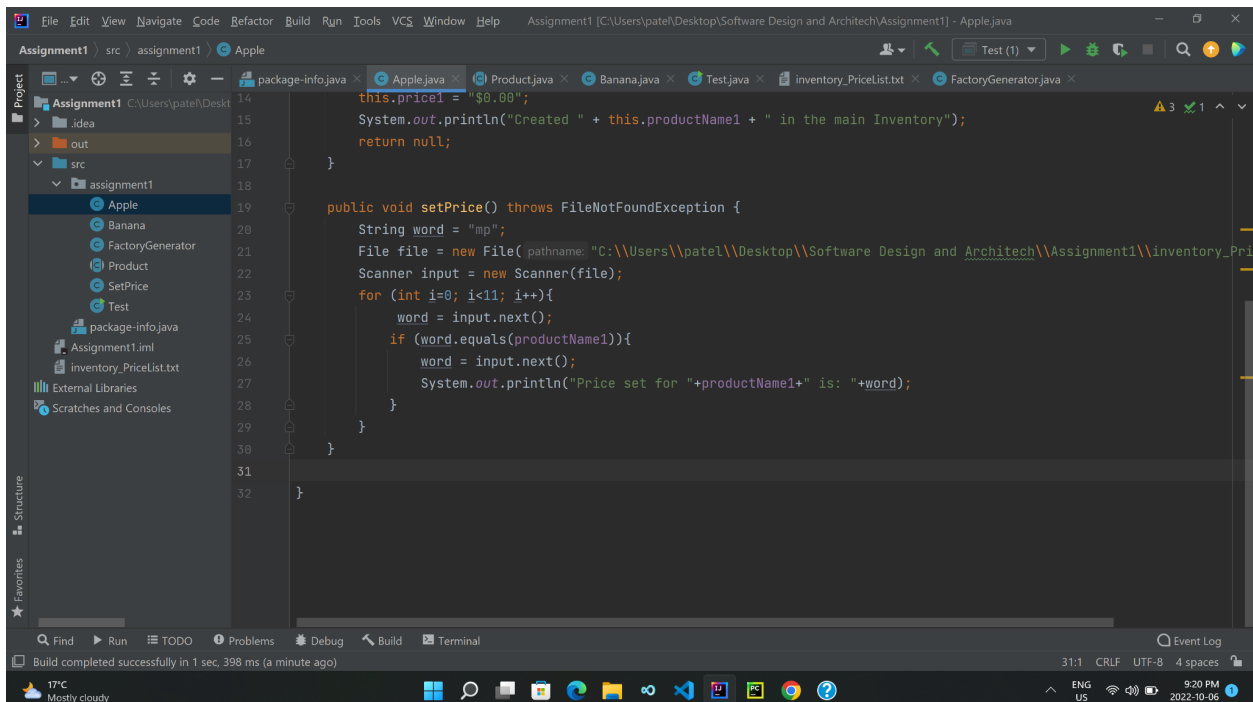
import java.io.File;
import java.io.FileNotFoundException;
import java.util.Scanner;

public class Apple extends Product {

    public Apple() throws FileNotFoundException {
    }

    public Apple createApple(String productName1){
        this.productName1 = productName1;
        this.price1 = "$0.00";
        System.out.println("Created " + this.productName1 + " in the main Inventory");
        return null;
    }

    public void setPrice() throws FileNotFoundException {
        String word = "mp";
        File file = new File( pathname: "C:\\Users\\patel\\Desktop\\Software Design and Architech\\Assignment1\\inventory_Pri
        Scanner input = new Scanner(file);
        for (int i=0; i<11; i++){
            word = input.next();
        }
    }
}
```



```
package assignment1;

import java.io.File;
import java.io.FileNotFoundException;
import java.util.Scanner;

public class Apple extends Product {

    public Apple() throws FileNotFoundException {
    }

    public Apple createApple(String productName1){
        this.productName1 = productName1;
        this.price1 = "$0.00";
        System.out.println("Created " + this.productName1 + " in the main Inventory");
        return null;
    }

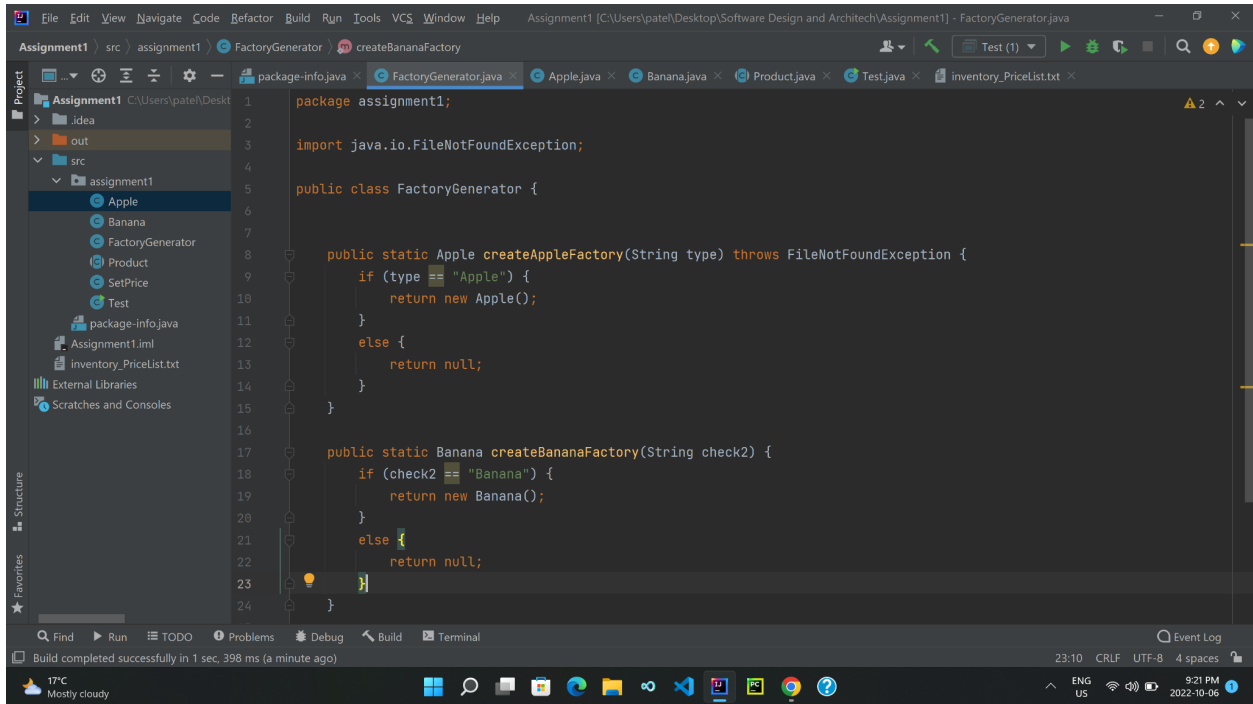
    public void setPrice() throws FileNotFoundException {
        String word = "mp";
        File file = new File( pathname: "C:\\Users\\patel\\Desktop\\Software Design and Architech\\Assignment1\\inventory_Pri
        Scanner input = new Scanner(file);
        for (int i=0; i<11; i++){
            word = input.next();
            if (word.equals(productName1)){
                word = input.next();
                System.out.println("Price set for "+productName1+" is: "+word);
            }
        }
    }
}
```

This screenshot shows the IntelliJ IDEA IDE with the `Banana.java` file open. The file is part of the `assignment1` package and extends the `Product` class. It contains two methods: `createBanana` and `setPrice`. The `createBanana` method takes a `String productName2` and sets the `productName2` and `price2` attributes, then prints a message. The `setPrice` method reads from a file named `inventory_PriceList.txt` and sets the `price2` attribute based on the input.

```
1 package assignment1;
2
3 import java.io.File;
4 import java.io.FileNotFoundException;
5 import java.util.Scanner;
6
7 public class Banana extends Product{
8
9     public Banana createBanana(String productName2){
10         this.productName2 = productName2;
11         this.price2 = price2;
12         System.out.println("Created " + this.productName2 + " in the main Inventory");
13         return null;
14     }
15
16     public void setPrice() throws FileNotFoundException {
17         String word = "mp";
18         File file = new File( pathname: "C:\\Users\\pate1\\Desktop\\Software Design and Architech\\Assignment1\\inventory_Pr
19         Scanner input = new Scanner(file);
20         for (int i=0; i<11; i++){
21             word = input.next();
22             if (word.equals(productName2)){
23                 word = input.next();
24                 System.out.println("Price set for "+productName2+" is: "+word);
25             }
26         }
27     }
28 }
```

This screenshot shows the IntelliJ IDEA IDE with the `Product.java` file open. The file is part of the `assignment1` package and defines an abstract class `Product`. It contains two attributes: `price1` and `price2`, and two methods: `getPrice1` and `getPrice2`.

```
1 package assignment1;
2
3 abstract class Product{
4
5     String price1;
6     String price2;
7     String productName1;
8     String productName2;
9
10 }
11 }
```

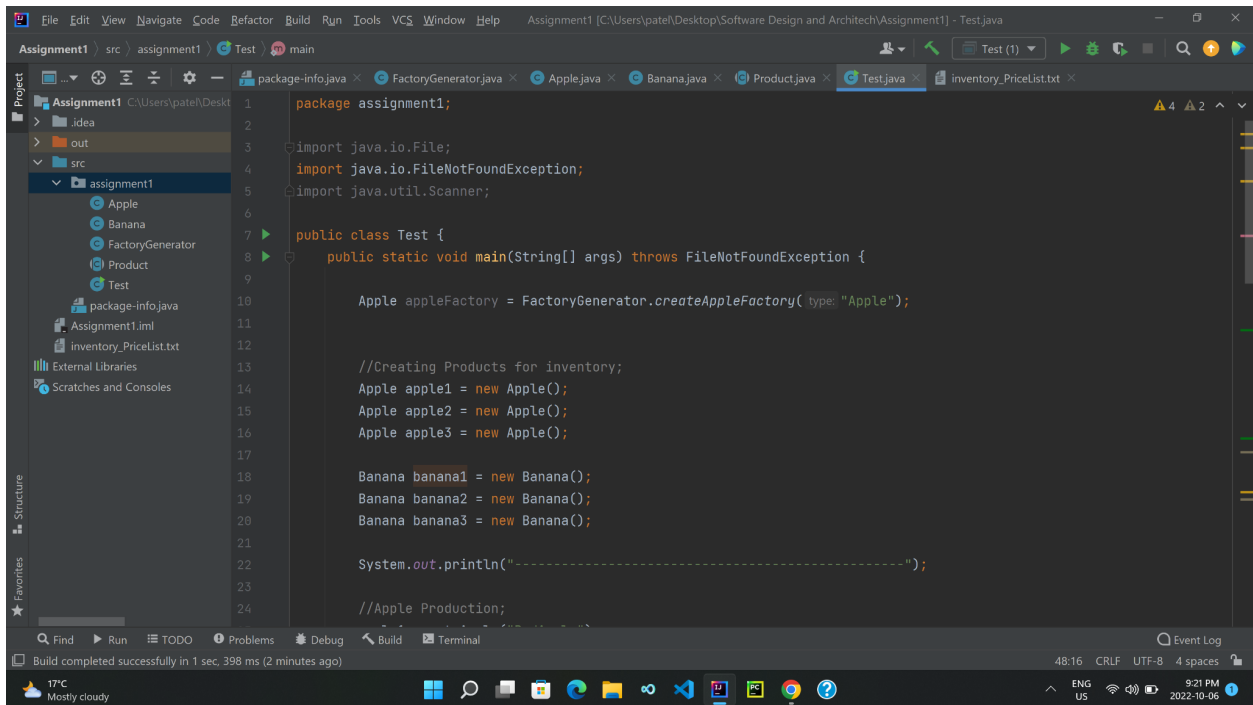


```
1 package assignment1;
2
3 import java.io.FileNotFoundException;
4
5 public class FactoryGenerator {
6
7     public static Apple createAppleFactory(String type) throws FileNotFoundException {
8         if (type == "Apple") {
9             return new Apple();
10        }
11        else {
12            return null;
13        }
14    }
15
16    public static Banana createBananaFactory(String check2) {
17        if (check2 == "Banana") {
18            return new Banana();
19        }
20        else {
21            return null;
22        }
23    }
24 }
```

Build completed successfully in 1 sec, 398 ms (a minute ago)

23:10 CRLF UTF-8 4 spaces

17°C Mostly cloudy

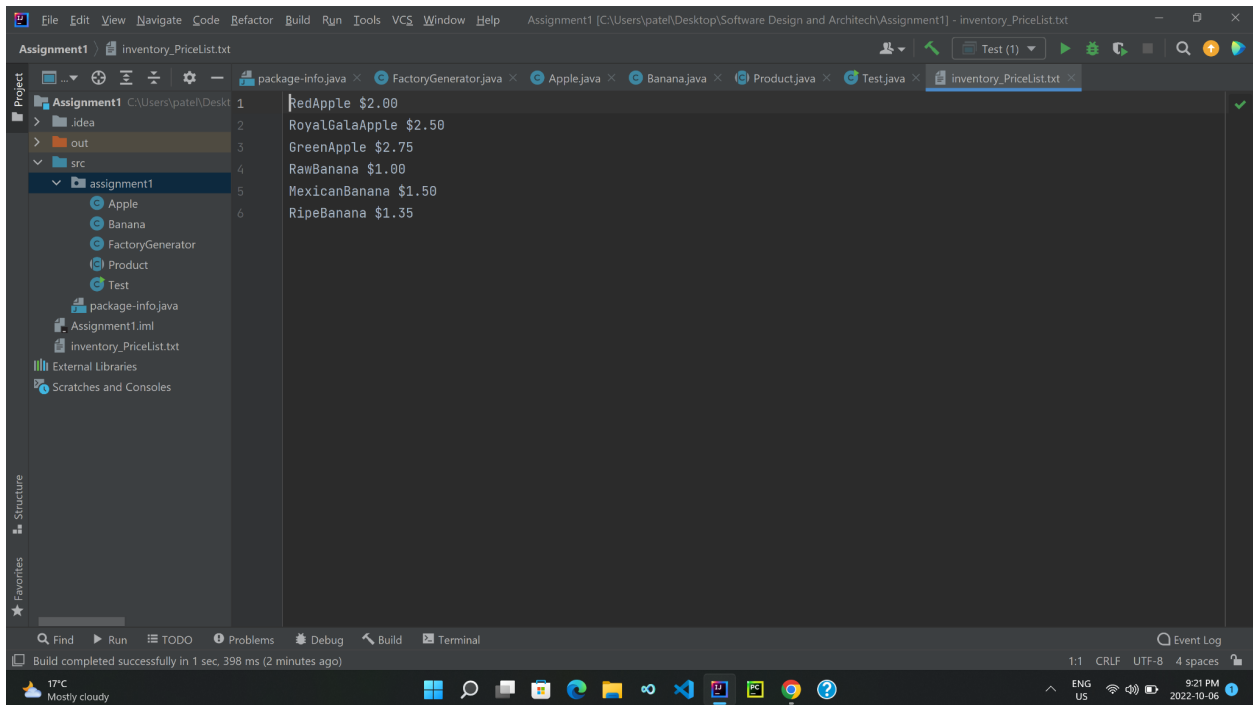
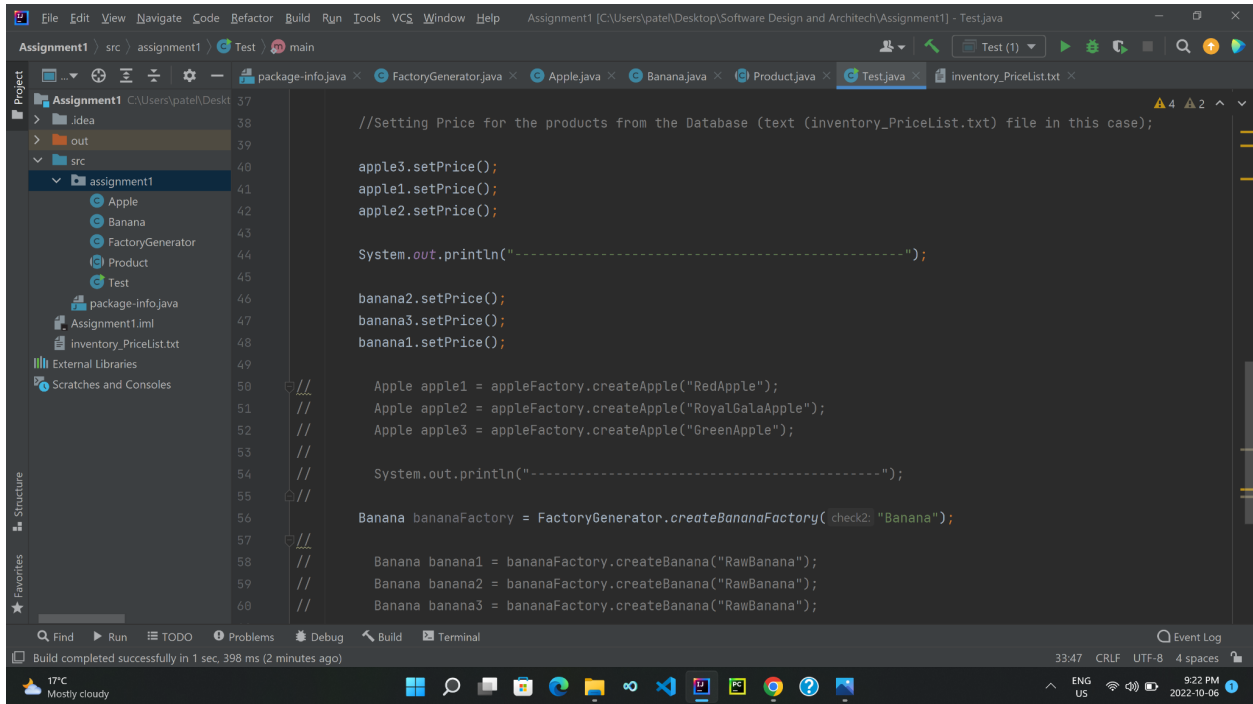


```
1 package assignment1;
2
3 import java.io.File;
4 import java.io.FileNotFoundException;
5 import java.util.Scanner;
6
7 public class Test {
8     public static void main(String[] args) throws FileNotFoundException {
9
10        Apple appleFactory = FactoryGenerator.createAppleFactory( type: "Apple");
11
12        //Creating Products for inventory;
13        Apple apple1 = new Apple();
14        Apple apple2 = new Apple();
15        Apple apple3 = new Apple();
16
17        Banana banana1 = new Banana();
18        Banana banana2 = new Banana();
19        Banana banana3 = new Banana();
20
21        System.out.println("-----");
22
23        //Apple Production;
24    }
```

Build completed successfully in 1 sec, 398 ms (2 minutes ago)

48:16 CRLF UTF-8 4 spaces

17°C Mostly cloudy



The screenshot shows the IntelliJ IDEA IDE with a project named "Assignment1". The "Run" window displays the output of a Java program. The program creates several objects in the main inventory and then sets their prices. Handwritten notes in yellow and blue provide context for the execution flow.

```
"C:\Program Files\Eclipse Foundation\jdk-11.0.12.7-hotspot\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021..."

Created RedApple in the main Inventory
Created RoyalGalaApple in the main Inventory
Created GreenApple in the main Inventory
-----
Created RawBanana in the main Inventory
Created MexicanBanana in the main Inventory
Created RipeBanana in the main Inventory
-----

Price set for GreenApple is: $2.75
Price set for RedApple is: $2.00
Price set for RoyalGalaApple is: $2.50
-----
Price set for MexicanBanana is: $1.50
Price set for RipeBanana is: $1.35
Price set for RawBanana is: $1.00

Process finished with exit code 0
```

*Handwritten notes:*

- first products / were created* (Yellow)
- later price for them was set which was read from a text file* (Blue)

Build completed successfully in 1 sec (moments ago)

17°C Mostly cloudy 19:34 CRLF UTF-8 4 spaces 9:22 PM 2022-10-06