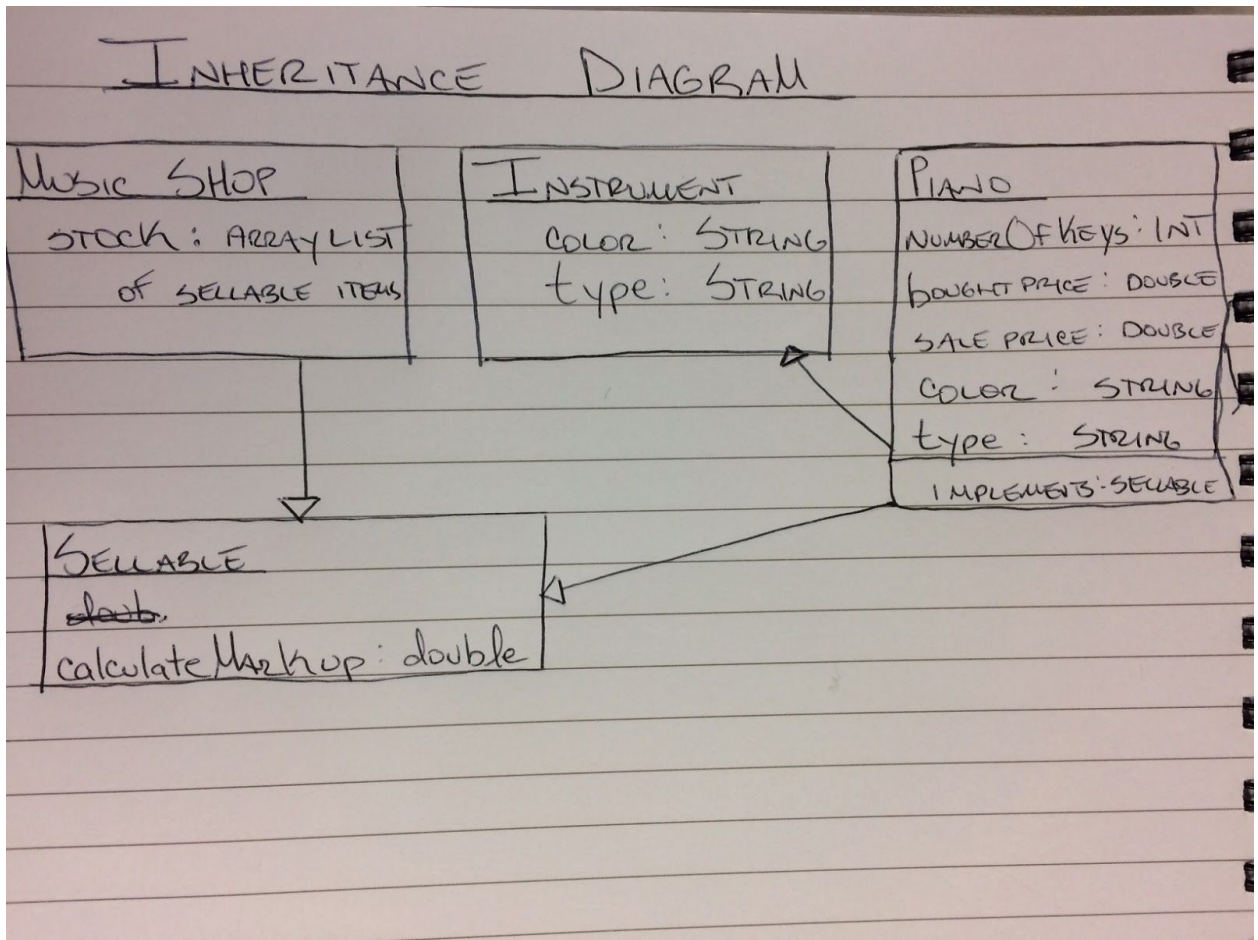


```

1  Piano Piano()
2  package com.example.raysmusicexchange;
3
4  /**
5   * Created by allysonwilson on 9/8/17.
6   */
7  /**
8   public class Piano
9       extends Instrument
10      implements Playable , Sellable {
11
12      private int numberOfKeys;
13      private double boughtPrice;
14      private double salePrice;
15
16      public Piano(String color, String type, int numberOfKeys, double boughtPrice, double
17      salePrice){
18          super(color, type);
19          this.numberOfKeys = numberOfKeys;
20          this.boughtPrice = 10.00;
21          this.salePrice = 12.00;
22      }

```

## I.T 1 Encapsulation



## A.D 5 Inheritance Diagram

```
Instrument
1  package com.example.raysmusicexchange;
2
3  /**
4   * Created by allysonwilson on 9/8/17.
5   */
6
7  public abstract class Instrument implements Playable {
8      public String color;
9      public String type;
10
11
12      public Instrument(String color, String type) {
13          this.color = color;
14          this.type = type;
15      }
16
17      public String getColor() { return color; }
18
19      public String getType() { return type; }
20
21      public void setColor(String color) { this.color = color; }
22
23      public void setType(String type) { this.type = type; }
24
25  }
26
27
28
29
30
31
32
33
34
```

## I.T 2 Superclass

```

Piano
4  /**
5   // * Created by allysonwilson on 9/8/17.
6   // */
7   //
8   public class Piano
9       extends Instrument
10      implements Playable , Sellable {
11
12      private int numberOfKeys;
13      private double boughtPrice;
14      private double salePrice;
15
16      public Piano(String color, String type, int numberOfKeys, double boughtPrice, double
17      salePrice){
18          super(color, type);
19          this.numberOfKeys = numberOfKeys;
20          this.boughtPrice = 10.00;
21          this.salePrice = 12.00;
22      }
23
24      public int getNumberOfKeys(){ return numberOfKeys; }
25
26
27      public String soundOfInstrument() { return "tinkley"; }
28
29
30
31      public double calculateMarkUp() {
32          return (0.20 * boughtPrice) ;
33      }
34
35
36      public double getSalePrice() {
37
38          return (boughtPrice += calculateMarkUp()) ;
39      }
40
41      public double profit(){ return (salePrice - boughtPrice); }

```

I.T 2 Class inherits from previous class

```

import ...
/**
 * Created by allysonwilson on 9/9/17.
 */

public class PianoTest {

    Piano piano;

    @Before
    public void before() { piano = new Piano( "white", "string instrument", 88, 10.00, 12.00); }

    @Test
    public void testHasColor() { assertEquals( "white", piano.getColor() ); }

    @Test
    public void testHasType() { assertEquals( "string instrument" , piano.getType() ); }

    @Test
    public void testHasNumberOfKeys() { assertEquals( 88, piano.getNumberOfKeys() ); }

    @Test
    public void testSoundOfInstrument() { assertEquals( "tinkley" , piano.soundOfInstrument()); }

    @Test
    public void testCalculateMarkUp() { assertEquals( 2.00, .01, piano.calculateMarkUp() ); }

    @Test
    public void testHasSalePrice() { assertEquals(12.00, 0.1, piano.getSalePrice() ); }

    @Test
    public void testHasProfit() { assertEquals( 2.00, 0.01, piano.profit() ); }

}

```

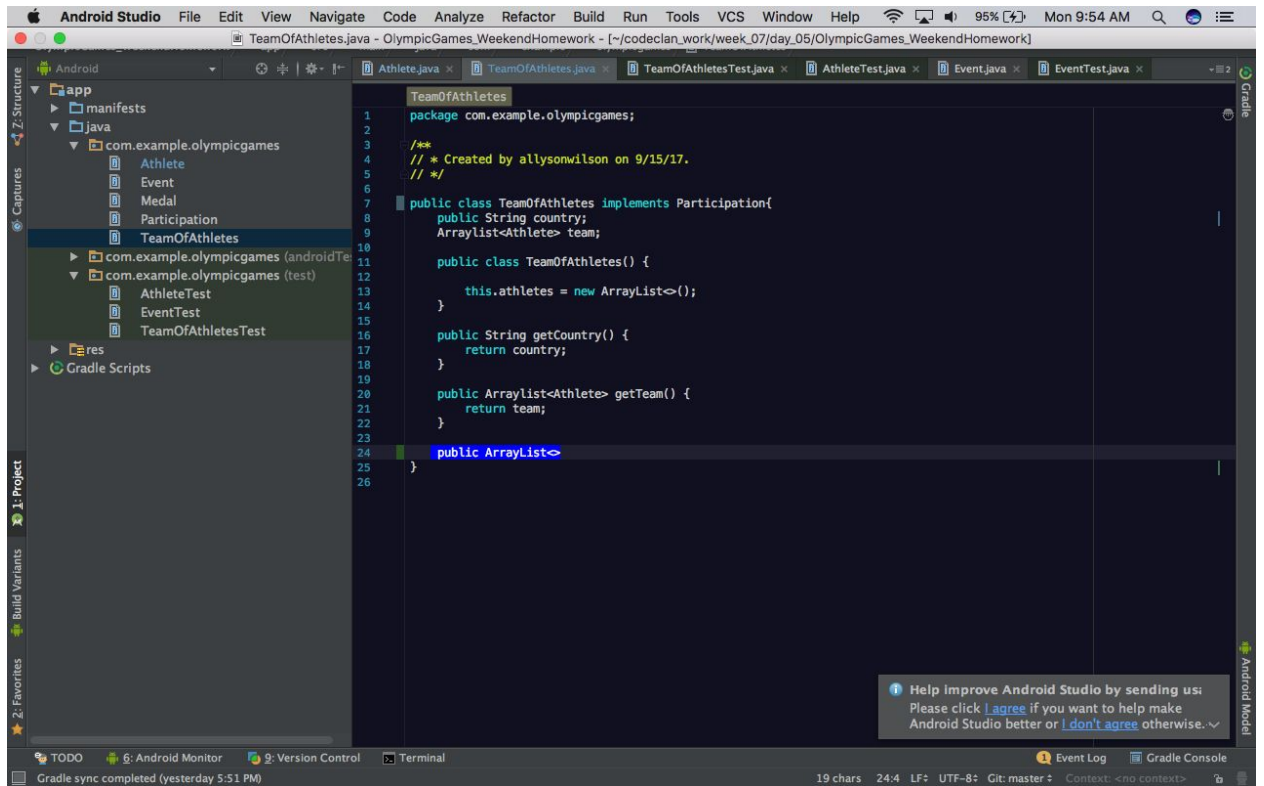
## I.T 2 Object in Inherited Class

```

    public double calculateMarkUp() {
        return (0.20 * boughtPrice) ;
    }

```

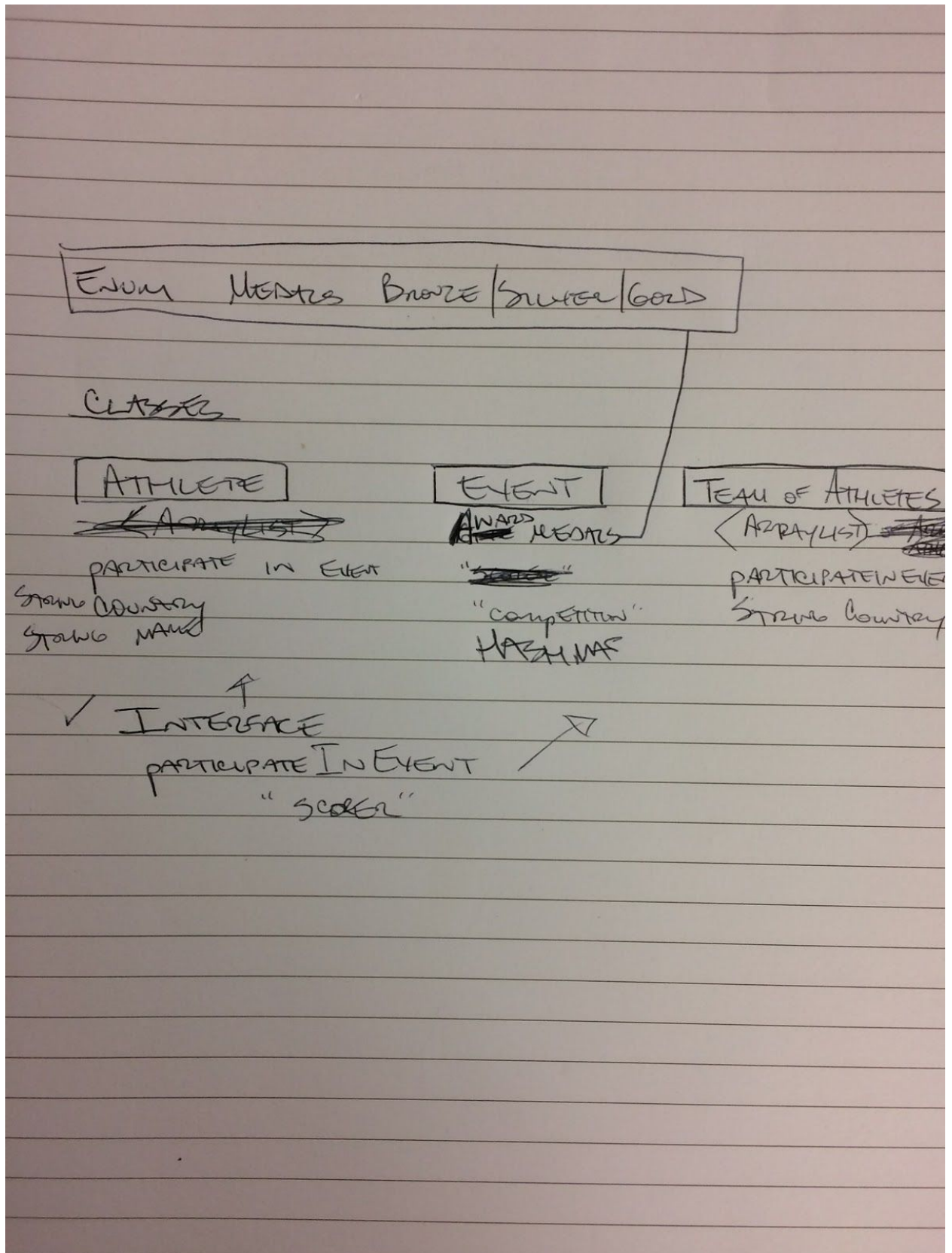
## I.T 2 Method from inherited class of Sellable



## P 11 Screenshot of solo project

[https://github.com/allysonwilson/Olympic\\_Games\\_Week7\\_Java\\_WKND\\_HW](https://github.com/allysonwilson/Olympic_Games_Week7_Java_WKND_HW)





P 12 photo of planning