

W16:Homework:H15 Handout

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H15

CS56 W16

The program for problem 2:

```
/** Exercise based on p. 266 in HFJ, for H15, W16, CS56, UCSB, P. Conrad
 */
public class Dog {

    private static Dog dogOfTheWeek = null;

    private String name;

    public void setAsDogOfTheWeek() {
        dogOfTheWeek = this;
    }

    public static Dog getDogOfTheWeek() {
        return dogOfTheWeek;
    }

    public Dog(String name) { this.name = name;}

    public static void main(String [] args) {

        Dog d1 = new Dog("Fido");
        Dog d2 = new Dog("Rover");
        Dog d3 = new Dog("Princess");
        Dog d4 = new Dog("Spot");
        Dog d5 = new Dog("Snoopy");

        d1.setAsDogOfTheWeek();    /* 1 */
        d1 = d2;                   /* 2 */
        Dog d6 = d3;               /* 3 */
        Dog temp = d4;             /* 4 */
        d4 = d3;                   /* 5 */
        d3 = temp;                 /* 6 */
        d2 = getDogOfTheWeek();    /* 7 */
        d4.setAsDogOfTheWeek();    /* 8 */
        d5 = null;                 /* 9 */
        d4 = null;                 /* 10 */
        d3 = null;                 /* 11 */
        d2 = null;                 /* 12 */
        d1 = null;                 /* 13 */
        temp = null;               /* 14 */
    }                               /* 15 */
}
```

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Code for Problem 3:

Product.java

```
1  /** something that can be sold */
2  public abstract class Product {
3
4  /** get the price (in cents) */
5  public abstract int getPrice();
6
7  }
```

Shippable.java

```
1  /** something that can be shipped */
2  public interface Shippable {
3
4  /** get the shipping weight in pounds */
5  public double getWeight();
6  }
```

Book.java

```
1  /** A Book */
2  public class Book extends Product implements Shippable {
3
4  private int price;
5  private double weight;
6  private String author;
7  private String title;
8
9  public Book(String author, String title, int price,
10 double weight) {
11 this.author = author;
12 this.title = title;
13 this.price = price;
14 this.weight = weight;
15 }
16
17 public int getPrice() {return this.price;}
18 public String getTitle() {return this.title;}
19 public String getAuthor() {return this.author;}
20 public double getWeight() {return this.weight;}
21
22 }
```

Song.java

```
1  /** A downloadable Song */
2  public class Song extends Product {
3
4  private int price;
5  private String artist;
6  private String title;
7
8  public Song(String artist, String title, int price) {
9  this.artist = artist;
10 this.title = title;
11 this.price = price;
12 }
13
14 public Song(String artist, String title) {
15 this(artist,title,99);
16 }
17
18 public int getPrice() {return this.price;}
19 public String getTitle() {return this.title;}
20 public String getArtist() {return this.artist;}
21
22 }
```