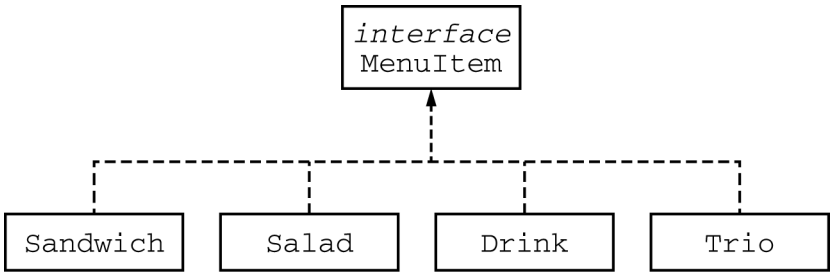
4. The menu at a lunch counter includes a variety of sandwiches, salads, and drinks. The menu also allows a customer to create a "trio," which consists of three menu items: a sandwich, a salad, and a drink. The price of the trio is the sum of the two highest-priced menu items in the trio; one item with the lowest price is free.

Each menu item has a name and a price. The four types of menu items are represented by the four classes `Sandwich`, `Salad`, `Drink`, and `Trio`. All four classes implement the following `MenuItem` interface.

```
public interface MenuItem
{
  /** @return the name of the menu item */
  String getName();

  /** @return the price of the menu item */
  double getPrice();
}
```

The following diagram shows the relationship between the `MenuItem` interface and the `Sandwich`, `Salad`, `Drink`, and `Trio` classes.



For example, assume that the menu includes the following items. The objects listed under each heading are instances of the class indicated by the heading.

Sandwich	Salad	Drink
"Cheeseburger" 2.75	"Spinach Salad" 1.25	"Orange Soda" 1.25
"Club Sandwich" 2.75	"Coleslaw" 1.25	"Cappuccino" 3.50

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The menu allows customers to create `Trio` menu items, each of which includes a sandwich, a salad, and a drink. The name of the `Trio` consists of the names of the sandwich, salad, and drink, in that order, each separated by `"/"` and followed by a space and then `"Trio"`. The price of the `Trio` is the sum of the two highest-priced items in the `Trio`; one item with the lowest price is free.

A trio consisting of a cheeseburger, spinach salad, and an orange soda would have the name `"Cheeseburger/Spinach Salad/Orange Soda Trio"` and a price of $4.00 (the two highest prices are $2.75 and $1.25). Similarly, a trio consisting of a club sandwich, coleslaw, and a cappuccino would have the name `"Club Sandwich/Coleslaw/Cappuccino Trio"` and a price of $6.25 (the two highest prices are $2.75 and $3.50).

Write the `Trio` class that implements the `MenuItem` interface. Your implementation must include a constructor that takes three parameters representing a sandwich, salad, and drink. The following code segment should have the indicated behavior.

```
Sandwich sandwich;
Salad salad;
Drink drink;
/* Code that initializes sandwich, salad, and drink */

Trio trio = new Trio(sandwich, salad, drink);   // Compiles without error

Trio trio1 = new Trio(salad, sandwich, drink); // Compile-time error
Trio trio2 = new Trio(sandwich, salad, salad); // Compile-time error
```

WRITE YOUR SOLUTION ON THE NEXT PAGE.

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Question 4: Trio

Class: `Trio`	**9 points**

Intent: *Define implementation of* `MenuItem` *interface that consists of sandwich, salad, and drink*

+1 `public class Trio implements MenuItem`

+1 Declares appropriate `private` instance variables

+2 Implements constructor

- **+1** `public Trio(Sandwich sandwich, Salad salad, Drink drink)`
- **+1** Initializes appropriate instance variables using parameters

+1 Implements interface methods
(`public String getName(){...}`, `public double getPrice(){...}`)

+1 Constructs correct name string and makes available for return in `getName`

+1 Returns constructed name string in `getName`

+1 Computes correct price and makes available for return in `getPrice`

+1 Returns computed price in `getPrice`

Question-Specific Penalties

-0 Missing or extra spaces in name string, "trio"

-1 (w) Extraneous default constructor that causes side effect

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