# 1   Hot Dog Stand Problem*

*For a history of the hot dog, watch this video: https://www.youtube.com/watch?vQ̄Qd_BVrMXV0

Bratty Buns Hot Dog Stand just opened for the summer season. You have been hired to produce menu of all possible combinations of their ingredients and price.

Bratty Buns always come with a dog in a bun at a base price of 99¢

There are six topping choices:

- ketchup, 15¢

- mustard, 17¢

- chopped onions, 20¢

- tomato wedge, 25¢

- sweet relish, 30¢

- sport peppers, 35¢

- sauerkraut, 45¢

Each dog can have any possible combination of toppings (including no toppings.)

# 2   Code Template

Use the following code template.

```
public class HotDog {
   // returns the number of combinations
   public long printMenu( ) {
      // YOUR CODE HERE
   }

   public static void main( String [ ] args ) {
      HotDog obj = new HotDog( );
      long count = obj.printMenu( );
      assert count == 24;
   }
}
```

# 3  Hot Dog Stand Problem Output

In the following output, the first entry is a dog in a bun with no toppings (the weight watcher special) and costs 99¢. The program proceeds through all combinations of dogs with toppings.

```
 0 Dog in Bun                                              $0.99
 1 Dog in Bun with Ketchup                                 $1.14
 2 Dog in Bun with Mustard                                 $1.16
 3 Dog in Bun with Chopped Onions                          $1.19
 4 Dog in Bun with Tomato Wedge                            $1.24
 5 Dog in Bun with Sweet Relish                            $1.29
 6 Dog in Bun with Sport Peppers                           $1.34
 7 Dog in Bun with Sauerkraut                              $1.44
 8 Dog in Bun with Ketchup, Mustard                        $1.31
 9 Dog in Bun with Ketchup, Chopped Onions                 $1.34
10 Dog in Bun with Ketchup, Tomato Wedge                   $1.39
11 Dog in Bun with Ketchup, Sweet Relish                   $1.44
12 Dog in Bun with Ketchup, Sport Peppers                  $1.49
13 Dog in Bun with Ketchup, Sauerkraut                     $1.59
14 Dog in Bun with Ketchup, Mustard, Chopped Onions        $1.51
15 Dog in Bun with Ketchup, Mustard, Tomato Wedge          $1.56
16 Dog in Bun with Ketchup, Mustard, Sweet Relish          $1.61
16 Dog in Bun with Ketchup, Mustard, Sport Peppers         $1.66
...
```

# 4  Hot Dog Stand Problem Hints

The presence of an ingredient in a combination can be represented by a No/Yes decision. That's a binary choice, which means we can represent it using the numbers 0 and 1.

- No = 0

- Yes = 1

This gives us something to count in our loops.