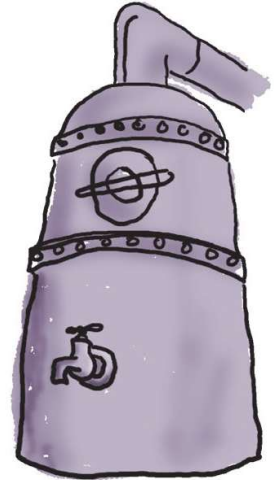


# The Chocolate Factory

Everyone knows that all modern chocolate factories have computer-controlled chocolate boilers. The job of the boiler is to take in chocolate and milk, bring them to a boil, and then pass them on to the next phase of making chocolate bars.

Here's the controller class for Choc-O-Holic, Inc.'s industrial strength Chocolate Boiler. Check out the code; you'll notice they've tried to be very careful to ensure that bad things don't happen, like draining 500 gallons of unboiled mixture, or filling the boiler when it's already full, or boiling an empty boiler!



```
public class ChocolateBoiler {
    private boolean empty;
    private boolean boiled;
```

```
    public ChocolateBoiler() {
        empty = true;
        boiled = false;
    }
```

This code is only started when the boiler is empty!

```
    public void fill() {
        if (isEmpty()) {
            empty = false;
            boiled = false;
            // fill the boiler with a milk/chocolate mixture
        }
    }
```

To fill the boiler it must be empty, and, once it's full, we set the empty and boiled flags.

```
    public void drain() {
        if (!isEmpty() && isBoiled()) {
            // drain the boiled milk and chocolate
            empty = true;
        }
    }
```

To drain the boiler, it must be full (non-empty) and also boiled. Once it is drained, we set empty back to true.

```
    public void boil() {
        if (!isEmpty() && !isBoiled()) {
            // bring the contents to a boil
            boiled = true;
        }
    }
```

To boil the mixture, the boiler has to be full and not already boiled. Once it's boiled, we set the boiled flag to true.

```
    public boolean isEmpty() {
        return empty;
    }
```

```
    public boolean isBoiled() {
        return boiled;
    }
}
```