

Hooked on Template Method...

A hook is a method that is declared in the abstract class, but only given an empty or default implementation. This gives subclasses the ability to “hook into” the algorithm at various points, if they wish; a subclass is also free to ignore the hook.

There are several uses of hooks; let’s take a look at one now. We’ll talk about a few other uses later:

```
public abstract class CaffeineBeverageWithHook {
```

```
    final void prepareRecipe() {  
        boilWater();  
        brew();  
        pourInCup();  
        if (customerWantsCondiments()) {  
            addCondiments();  
        }  
    }
```

```
    abstract void brew();
```

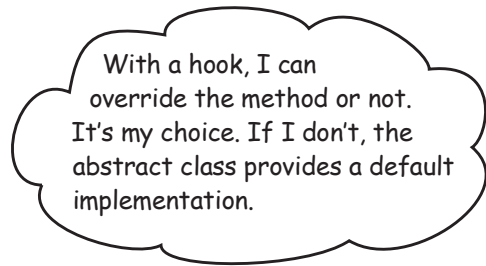
```
    abstract void addCondiments();
```

```
    void boilWater() {  
        System.out.println("Boiling water");  
    }
```

```
    void pourInCup() {  
        System.out.println("Pouring into cup");  
    }
```

```
    boolean customerWantsCondiments() {  
        return true;  
    }
```

```
}
```



We've added a little conditional statement that bases its success on a concrete method, `customerWantsCondiments()`. If the customer **WANTS** condiments, only then do we call `addCondiments()`.

Here we've defined a method with a (mostly) empty default implementation. This method just returns true and does nothing else.

This is a hook because the subclass can override this method, but doesn't have to.

Using the hook

To use the hook, we override it in our subclass. Here, the hook controls whether the `CaffeineBeverage` class evaluates a certain part of the algorithm—that is, whether it adds a condiment to the beverage.

How do we know whether the customer wants the condiment? Just ask!

```
public class CoffeeWithHook extends CaffeineBeverageWithHook {

    public void brew() {
        System.out.println("Dripping Coffee through filter");
    }

    public void addCondiments() {
        System.out.println("Adding Sugar and Milk");
    }

    public boolean customerWantsCondiments() {

        String answer = getUserInput();

        if (answer.toLowerCase().startsWith("y")) {
            return true;
        } else {
            return false;
        }
    }

    private String getUserInput() {
        String answer = null;

        System.out.print("Would you like milk and sugar with your coffee (y/n)? ");

        BufferedReader in = new BufferedReader(new InputStreamReader(System.in));
        try {
            answer = in.readLine();
        } catch (IOException ioe) {
            System.err.println("IO error trying to read your answer");
        }
        if (answer == null) {
            return "no";
        }
        return answer;
    }
}
```

Here's where you override the hook and provide your own functionality.

Get the user's input on the condiment decision and return true or false, depending on the input.

This code asks if the user would like milk and sugar and gets the input from the command line.