Core | Deadline: Sunday of Week 3 | Difficulty Level: Intermediate | Est. Time: 1 - 2 hrs

Fruity Loops

For this assignment, we will practice using the `c:forEach` tag to dynamically render lists in our templates. We will also be brushing up a little on our OOP again. It may be helpful to keep your Order/Item Assignments, for reference on how to access member variables from an object instance, for example.

Learning Objectives:

- Practice setting up dependencies and imports for using JSP and the JSTL in a Spring project
- Review OOP concepts
- Access member variables of an object instance from within a JSP file
- Become familiar with the `c:forEach` JSTL tags
- Understand the correct syntax for using variables within JSTL tags e.g., when to use `${someVariable}` within c:out tags vs. a string literal

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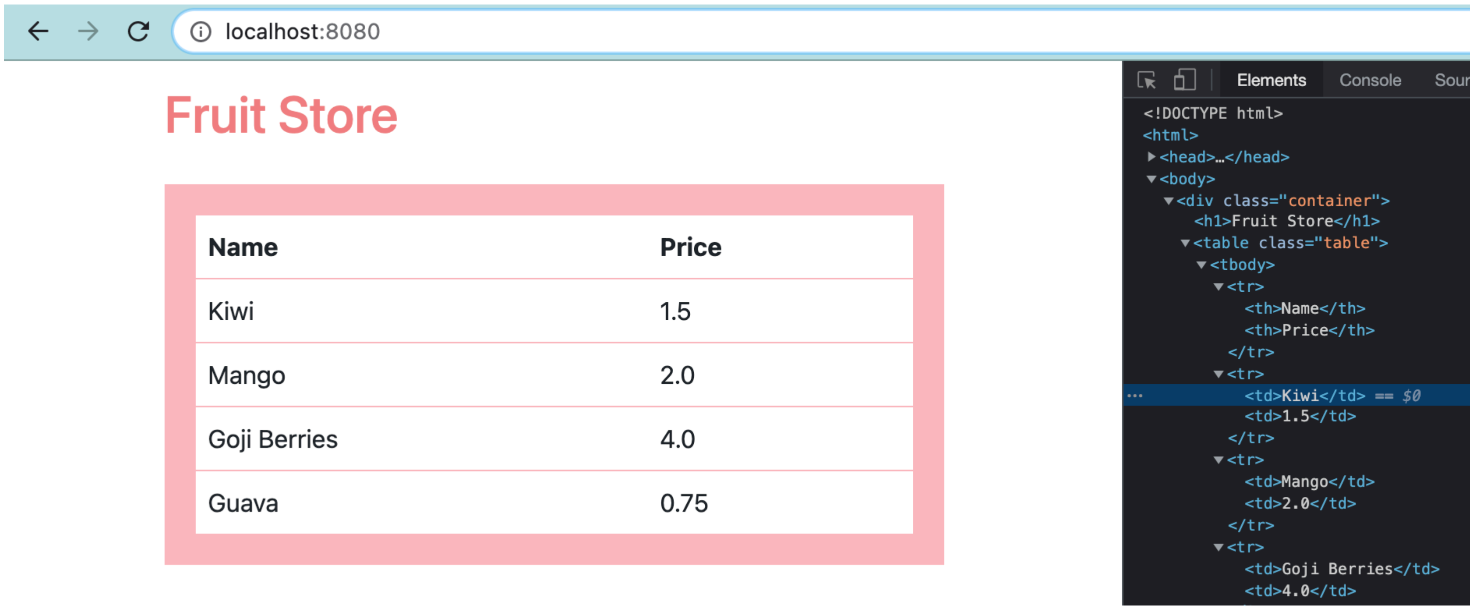
Assignment:

For this assignment you'll be building this wireframe, dynamically rendering a list from your controller.



Fruit Store

Name	Price
Kiwi	1.5
Mango	2.0
Goji Berries	4.0
Guava	0.75

```
<!DOCTYPE html>
<html>
 ▶<head>…</head>
 ▼<body>
   ▼<div class="container">
      <h1>Fruit Store</h1>
     ▼<table class="table">
       ▼<tbody>
         ▼<tr>
            <th>Name</th>
            <th>Price</th>
          </tr>
         ▼<tr>
            <td>Kiwi</td> == $0
            <td>1.5</td>
          </tr>
         ▼<tr>
            <td>Mango</td>
            <td>2.0</td>
          </tr>
         ▼<tr>
            <td>Goji Berries</td>
            <td>4.0</td>
```

We're going to start by making a new project. Don't forget to add all the dependencies! In addition to making a `controllers` package for our controllers, we will also be making a `models` package to house our models. A model is just another name for a class. In Model View Controller (MVC) design patterns, classes are called models, because they model the data from the database, in order to manipulate it. For now, we do not have a database yet, but that doesn't stop us from implementing classes anyway!

Item Class

Let's dust off our `Item` class from way back a million years ago in the Java Fundamentals section.

```
public class Item {
    // MEMBER VARIABLES
    private String name;
    private double price;
    // CONSTRUCTOR
    public Item(String name, double price) {
        this.name = name;
        this.price = price;
    }

    // As always, don't forget to generate Getters and Setters!
}
```

You should set member variables to private unless you have an explicit reason not to. Likewise, whether or not you set your variables to public or private, you should always generate getters and setters, for two important reasons.

1. It is convention.
2. Dependencies rely on your getters and setters.

Because it is convention, many dependencies and other parts of the framework, like the view engine used for rendering, will rely on your getters and setters, as part of what's called inversion of control.

Specifically, in this case, when dealing with the view model, that is, the `Model model` , the view engine will use your getters and setters when rendering them to the JSP page, which is why you don't need to explicitly call your getters in your JSP, but you DO need to include getters and setters in your model for it to be used properly. Thus, you can use `thisItem.name` instead of `thisItem.getName()` in your JSP file, even if you have access set to private.

Item Controller

Next, in your controllers package, create your controller as per usual. We'll start you off with some code, and you can take it from there.

```
// ... imports (Use shift+ctrl+O or shift+cmd+O to import as you code)
@Controller
public class ItemController {

    @RequestMapping("/")
    public String index(Model model) {

        ArrayList<Item> fruits = new ArrayList<Item>();
        fruits.add(new Item("Kiwi", 1.5));
        fruits.add(new Item("Mango", 2.0));
        fruits.add(new Item("Goji Berries", 4.0));
        fruits.add(new Item("Guava", .75));

        // Add fruits to your view model here

        return "index.jsp";
    }
}
```

Now, using the new-fangled `c:forEach` JSTL syntax you learned, and your expertise with OOP, recreate the wireframe above to display a list of fruits and their prices.

Note: It is NOT required to style it exactly as the wireframe but do add some of your own styling to flex those CSS muscles.

Ninja Bonus: For an extra challenge, change the font color of every fruit that starts with the letter 'G' to orange.

Hints (Spoilers)

Only watch this if you're struggling with the assignment already or are unclear about how to approach the assignment. Try it on your own first before watching this video.

- [ ] Create a 'Fruit Store' page that displays a list of fruits and their prices.
- [ ] Use an 'Item' class to create each fruit.
- [ ] Use 'Model' to pass item data to your JSP page.
- [ ] Make use of JSTL tags to display the data.