

# PrimeFaces Exercises: Ajax

Make a new PrimeFaces project. Do all exercises with Ajax, with no page reloads or switching of pages.

1. Display the current time (i.e., the output of `new Date()`) in the page. Make a button that, when pressed, updates the time.
2. Make two spinners to collect numbers. Make a button that, when pressed, shows the sum of the numbers. This problem is simplest if you show the original sum (e.g., 0) when the page is first loaded.
3. Make a variation of the previous problem: remove the push button, and instead update the sum whenever either spinner changes value.

The core of this problem is simple, but what makes it tricky is that the simplest usage of `p:ajax` just sends *one* spinner value at a time (the one that the user changed). So, you have two choices:

- Send *both* spinner values when you change either one.
- Make the bean session scoped, so that it works fine to only send the spinner value that actually changed. But, now you have the tricky problem that the same underlying bean class was a request-scoped bean in the previous problem. Furthermore, you need two separate bean instances, so that interacting with the previous problem won't affect this problem, and vice versa. The right way to do this is to use `faces-config.xml` and declare the same bean class twice, once with request scope and once with session scope. If you were in the earlier “core” JSF class, we discussed this in the lecture on explicit page navigation and `faces-config`. But, if you weren't in that class or don't know how to declare beans in `faces-config`, just make a new class that extends your class of problem 2, and make the subclass session scoped.

4. Make a variation of the first problem, but use a version of the action controller (or `getTime` method) that takes one or two seconds to execute. Display a temporary message and an animated GIF in the page while you are waiting for the results. Feel free to steal `ajax-loader.gif` from the `WebContent/resources/images` folder of my “prime-faces-ajax” project, or make your own animated GIF at <http://ajaxload.info/>.