CPW 143 Fall 2017, Programming Assignment 8: Maps

Purpose:

The purpose of this exercise is to gain experience in using a **Map**. **Map**s can make code faster to write, easier to read, and easier to maintain.

Description:

This assignment will make use of **Map**s.

The starter code for this assignment, **StateCapitals.java**, is a program that prompts the user to enter the name of a U.S. state. The program then displays the capital of that state. The states and their capitals are stored in a two-dimensional array. After the user enters a state name, the program has to search the array to find the capital. The starter code needs a **boolean** variable to keep track of whether the state was found so the program knows if it should print a "not found" message.

Your job is to modify the program so the states and their capitals are pairs in a Java **Map** with a pair's key being a state and the value associated with that key being the capital of that state. That way, the program won't have to search the array to look for a capital. You can keep the arrays in your program; just use those array values to make the key-value pairs for the map.

Use the features and methods of a Java Map to determine if the state entered by the user is a valid U.S. state. If not, print an error message. If the state is a key in the map, print the associated capital as shown below.

Expected Output:

Here are three sample runs of the program (user input has been underlined):

```
This program will find a state's capital

Which state do you want? Iowa
Iowa's capital is Des Moines


This program will find a state's capital

Which state do you want? Washington
Washington's capital is Olympia


This program will find a state's capital

Which state do you want? nirvana
The state of nirvana is not in our state list.
```

Submit:

Submit your updated **StateCapitals.java** file.