# Java Koans (6 points)

A *koan* is a "teaching question" that is used in Buddhist discourse that seeks to provide deep insight into a problem. While the answer to a koan can be subtle, they are not meant to be tricky like a puzzle is. Koans have correct answers, but the intention of working through a koan is to understand its deeper meaning.

To gain a better understanding of the Java programming language, you will work through a series of Java koans at the beginning of this course. Each koan is a small piece of code (about the size of a unit test) that demonstrates a particular feature or aspect of the Java language or API. The koans were originally authored by Mat Bentley and can found in their original form at `https://github.com/matyb/java-koans`.

To ease the configuration of the koans and to get you accustomed to working with Maven, the "Getting Started" GitHub repository contains `createKoansProject.sh` script. After following the directions on

`https://github.com/JoyOfCodingPDX/GettingStarted`

to make your own GitHub repository for this course, run the `createKoansProject.sh` script. This will create a `koans` directory that contains the codebase for your koans project.

```
$ ./createKoansProject.sh
```

After the Maven project is created, open in IntelliJ and import the `pom.xml` file into a new project.

Next, start the koan application with Maven. The application will instruct you what to do next and will give you feedback as you complete the koans.

```
$ cd koans
$ ./mvnw exec:java
```

The objective of the koans is not complete them as fast as you can. In fact, it is pretty easy to reverse engineer the solutions. If you do that, though, you're missing the point. I recommend that you work on the koans a little bit every day along with your other assignments to gradually build up an understanding of the Java language. I also encourage you ask questions about the koans and share your insights with the rest of the class on the Slack channel.

When you have completed the Java koans, please submit your solutions using the `submit.sh` script.

```
$ ./submit.sh koans
```

I highly recommend that you run the koans on the CS Department's machines before submitting. In years past, we've seen that some Koans behave differently (ones that exercise Java's localization APIs, for instance) on the CS Department's machines than they do on people's home machines.

Be warned: the koans framework maintains a copy of all of the source `.java` files in the `app/data/src` directory. If you accidentally edit these `.java` files instead of the files in the `src` directory, you will see progress being made on the koans, but `git status` will not detect any modified files. When editing the `.java` files (especially in IntelliJ), be careful that you are editing the correct ones (in `src`, not `app/data/src`).