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## Java, Unix, Silver Dollar Game

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### 1 Getting Started

During lab today, you will learn how to use the Java environment on the CS Lab Mac systems.

1. Go through the Unix tutorial handout. This will teach you how to log in and out of the machines, use basic Unix commands, and edit files with Emacs.
2. Identify the function of and experiment with these Unix Commands:

ls	cd	cp	mv	rm	mkdir	pwd
man	history	cat	more	grep	head	tail

Identify the function of and experiment with these Emacs Commands:

C-x C-s	C-x C-c	C-x C-f	C-x C-w	C-g	C-a	C-e
C-d	C-_	C-v	M-v	C-s	C-r	M-%

Learn these commands- you will use them often. Hints can be found in the Unix and Emacs web pages on the course website.

3. Make a directory in your Unix account for CS 136 work (perhaps “136” or “cs136” might be reasonable). Make a subdirectory lab1 in this new directory for files related to this lab.
4. Write, compile, and run a Java program under Unix that prints the first ten odd numbers. Call it Odd.java. Turn in your source code for Odd.java using the turnin utility. To hand in the file Odd.java, type “turnin -c 136 Odd.java” at the Unix prompt.

### 2 Lab Program

This week, we will write the Silver Dollar Game at the end of Chapter 3. **Hand in a written design for your program Wednesday morning.**

For your design, you should first decide on an internal representation of the coin strip. Make sure your representation supports all of the operations necessary, ie. testing for a legal move, printing the board, testing for a win, moving pieces easily, etc. You should think about alternative designs and be able to justify your decisions. You may read ahead a little to Vectors if you like, but the lab can be implemented just as easily with arrays.

Once you have decided on a representation, write down the set of operations supported by your data structure. In other words, what are the public methods of CoinStrip, what parameters do they take, what do they return, and what do they do? This initial design will constitute a fraction of your grade on the lab assignment.

The main method of your class should create a CoinStrip object and then prompt each of two players to make their moves. A move will be of the form:

```
cn ns
```

where cn is the coin to be moved and ns is the number of spaces it should be moved. The program should prompt the user for another input if the move is illegal.

To read input from a terminal window, you should use the class Scanner class, as we have seen in lecture. Consult the on line documentation or examples web page for details.

### 3 Submitting Your Program

When you are finished with the program, answer the thought questions at the end of the lab. Put your answers in a comment at the top of your file, which you should name `CoinStrip.java`.

Turn in `CoinStrip.java` using the `turnin` utility by typing the command

```
turnin -c 136 CoinStrip.java
```

As in all labs, you will be graded on design, documentation, style, and correctness. Be sure to document your program with appropriate comments, including a general description at the top of the file. Also use comments and descriptive variable names to clarify sections of the code which may not be clear to someone trying to understand it.

**This program is due by midnight next Monday.**