

6 Circularly Referential Data; Stateful World

Portfolio Problems

Design the classes that represent the transit system that consists of several train lines, with stations on each line.

Every line has a name (usually a color name) and a list of stations it serves. Every station has a name and a list of lines that go through the station.

1. Make an example of a transit system that looks like the MBTA *Green Line, Red Line Blue Line, and Orange Line* and include two terminal stops and at least two transit stations for each line.
2. Design the method `isTransfer` that determines whether a station is a transfer station between one or more lines.
3. Design the method `sameLine` in the class `Station` that determines whether this station is on the same line as the given station.
4. Design the method `oneChange` that determines whether we can travel from this station to the given station making exactly one change at a transfer station.

Pair Programming Assignment

6.1 Problem

Complete Parts D. E. F. and G. of the Lab 6, dealing with the friends (buddies).

6.2 Problem

Revise your *Shooting Star* game from Assignment 4 into **imperative style**. The library `idraw.jar` works just like the `draw.jar`, but the methods `onTick` and `onKeyEvent` change the state of the world and return `void`. Similarly, the draw methods just change the state of the Canvas also returning `void`.

You will have to rewrite the test cases to evaluate the desired change of state.

The `BlobWorld` example illustrates how the game would look in the imperative style.

6.3 Problem

Read the *javalib* website and turn your game into an applet.

One problem with running the applets in a web browser is that once you run it and want to make changes, the web browser remembers your previous version and typically has a hard time realizing that your code for the applet proper has changed. At times only quitting the browser application and starting it again reveals the changes in the program.

It is best to debug the applet in *Eclipse* and run it as *Java Applet* first, before running it within a web page.