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// ----- Java Simulation.java

// License information missing ...

/**
 * AP&reg; Computer Science Marine Biology Simulation:<br>
 * A <code>Simulation</code> object controls a simulation of fish
 * movement in an <code>Environment</code>.
 *
 * <p>
 * The <code>Simulation</code> class is
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 *
 * @author Alyce Brady
 * @version 1 July 2002
 * @see Environment
 * @see EnvDisplay
 * @see Fish
 */

public class Simulation
{
    // Instance Variables: Encapsulated data for each simulation object
    private Environment theEnv;
    private EnvDisplay theDisplay;

    /** Constructs a <code>Simulation</code> object for a particular
     * environment.
     * @param env the environment on which the simulation will run
     * @param display an object that knows how to display the environment
     */
    public Simulation(Environment env, EnvDisplay display)
    {
        theEnv = env;
        theDisplay = display;

        // Display the initial state of the simulation.
        theDisplay.showEnv();
        Debug.println("----- Initial Configuration -----");
        Debug.println(theEnv.toString());
        Debug.println("-----");
    }

    /** Runs through a single step of this simulation. */
    public void step()
    {
        // Get all the fish in the environment and ask each
        // one to perform the actions it does in a timestep.
        Locatable[] theFishes = theEnv.allObjects();
        for ( int index = 0; index < theFishes.length; index++ )
        {
            ((Fish)theFishes[index]).act();
        }

        // Display the state of the simulation after this timestep.
        theDisplay.showEnv();
        Debug.println(theEnv.toString());
        Debug.println("----- End of Timestep -----");
    }
}
}
```