Monkey Business - https://dmcommunity.wordpress.com/challenge/challenge-nov-2015/

Implementation using JSR-331:

```
package org.jcp.jsr331.samples;

import javax.constraints.Problem;
import javax.constraints.ProblemFactory;
import javax.constraints.Solution;
import javax.constraints.VarString;

public class Monkeys {

	static final String[] names = { "Mike", "Sam", "Anna", "Harriet" };
	static final String[] fruits = { "Banana", "Pear", "Orange", "Apple" };
	static final String[] restingPlaces =
				{ "Grass", "Rock", "Stream", "Tree Branch" };

	class Monkey {
		String name;
		VarString fruit;
		VarString restingPlace;

		public Monkey(String name) {
			this.name = name;
			fruit = p.variableString(name + "'s fruit", fruits);
			restingPlace = p.variableString(name +
					"'s restingPlace", restingPlaces);
		}

		public String toString() {
			return "Monkey [name=" + name + ", fruit=" + fruit
				+ ", restingPlace=" + restingPlace + "]";
		}
	}

	Problem p = ProblemFactory.newProblem("Monkeys");
	Monkey[] monkeys = new Monkey[names.length];

	public void define() {
		try {
			// Variables
			VarString[] fruitVariables = new VarString[monkeys.length];
			VarString[] restingPlaceVariables =
					new VarString[monkeys.length];
			for (int i = 0; i < monkeys.length; i++) {
				Monkey m = new Monkey(names[i]);
				monkeys[i] = m;
				fruitVariables[i] = m.fruit;
				restingPlaceVariables[i] = m.restingPlace;
				p.postIfThen(p.linear(m.restingPlace, "=", "Rock"),
						p.linear(m.fruit, "=", "Apple"));
				p.postIfThen(p.linear(m.fruit, "=", "Pear"),
					p.linear(m.restingPlace, "!=", "Tree Branch"));
```

```
                        if (m.name.equals("Sam")) {
                              p.post(m.fruit, "!=", "Banana");
                              p.post(m.restingPlace, "=", "Grass");
                        }
                        if (m.name.equals("Anna")) {
                              p.post(m.fruit, "!=", "Pear");
                              p.post(m.restingPlace, "=", "Stream");
                        }
                        if (m.name.equals("Mike")) {
                              p.post(m.fruit, "!=", "Orange");
                        }
                        if (m.name.equals("Harriet")) {
                              p.post(m.restingPlace, "!=", "Tree Branch");
                        }
                  }

                  p.postAllDiff(fruitVariables);
                  p.postAllDiff(restingPlaceVariables);

            } catch (Exception ex) {
                  ex.printStackTrace();
            }
      }

      public Solution solve() {
            return p.getSolver().findSolution();
      }

      public void print(Solution solution) {
            p.log("SOLUTION:");
            for (int i = 0; i < p.getVarStrings().length; i++) {
                  VarString var = p.getVarStrings()[i];
                  String value = solution.getValueString(var.getName());
                  p.log(var.getName() + " = " + value);
            }
      }

      public static void main(String[] args) {
            Monkeys p = new Monkeys();
            p.define();
            Solution solution = p.solve();
            p.print(solution);
      }
}
```

```
SOLUTION:

Mike's fruit = Banana
Mike's restingPlace = Tree Branch
Sam's fruit = Pear
Sam's restingPlace = Grass
Anna's fruit = Orange
Anna's restingPlace = Stream
Harriet's fruit = Apple
Harriet's restingPlace = Rock
```