Practice Exercises for Lists

Solve each of the practice exercises below. Each problem includes three CodeSkulptor links: one for a template that you should use as a starting point for your solution, one to our solution to the exercise, and one to a tool that automatically checks your solution.

1. Create a list that contains first 6 prime numbers in ascending order. (This list should be created manually.) Print out the 2nd, 4th, and 6th numbers in this list. Prime list template --- Prime list solution --- Prime list (Checker)
2. Given the list `a` in the template, make a new reference `b` to `a`. Update the first entry in `b` to be zero. What happened to the first entry in `a`? Explain your answer (in a comment). List reference template --- List reference solution --- List reference (Checker)
3. Given the list `a` in the template, make a new copy `b` of the list `a` using the function `list`. Update the first entry in `b` to be zero. What happened to the first entry in `a`? Explain your answer (in a comment). List copy template ---List copy solution --- List copy (Checker)
4. Write a function `add_vector(v, w)` that takes two 2D vectors `v` and `w` (represented as lists) and returns a new 2D vector (represented as a list) that is the sum of the two vectors. Remember that vector addition is performed independently on each corresponding element of the lists. Hint: returning `v + w` does **not** work. Vector addition template --- Vector addition solution --- Vector addition (Checker)
5. **Challenge:** The program template below is a program designed to run two independent timers with their own start and stop buttons. In particular, each timer should be controlled by its own buttons independent of the other timer's buttons. The current version has an error that causes both timers to work in unison. Find and fix this error. Debugging test template --- Debugging test solution --- Debugging test (Checker)