

# iList Tutorial

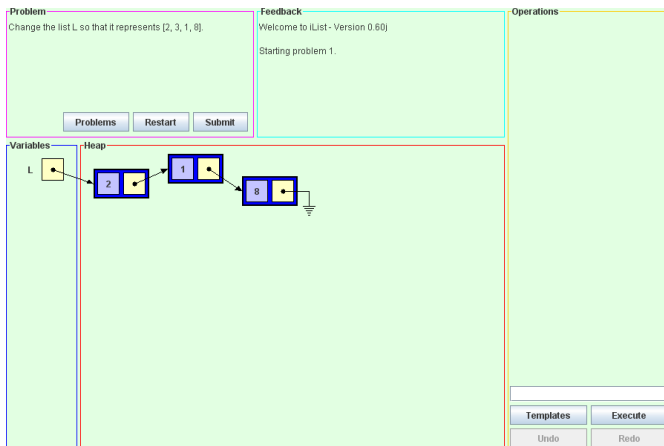
Welcome to iList! This tutorial is designed to help you start using iList. There will be many screenshots to show you several things: how to solve problem 1, and the difference in solving problems 1 through 5 versus problems 6 and 7.

Before we start, let's talk about the iList interface.

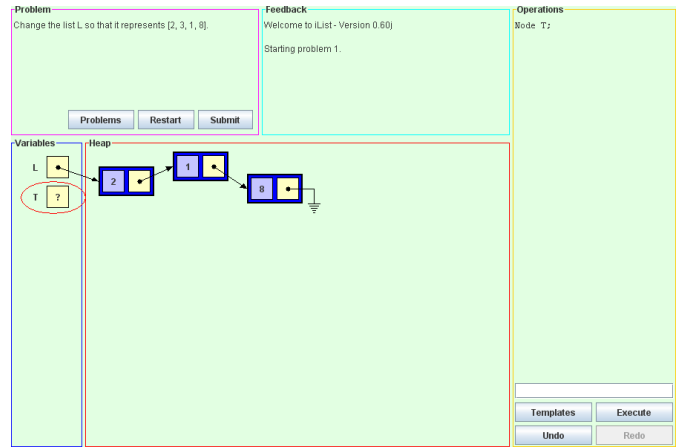
- The **'Problems'** button shows the problems you can work on.
- The **'Restart'** button allows you to start a problem from scratch.
- The **'Submit'** button finalizes your answer, so iList can tell you if you solved the problem correctly or not.
- The **'Templates'** button shows you several commands that you can use for solving problems. Note that you should replace the "question marks" with appropriate variable names.
- The **'Execute'** button carries out your command. It is similar to pressing the 'Enter' key after typing in a command.
- Lastly, there are the **'Undo'** and **'Redo'** buttons.

## How to solve Problem 1

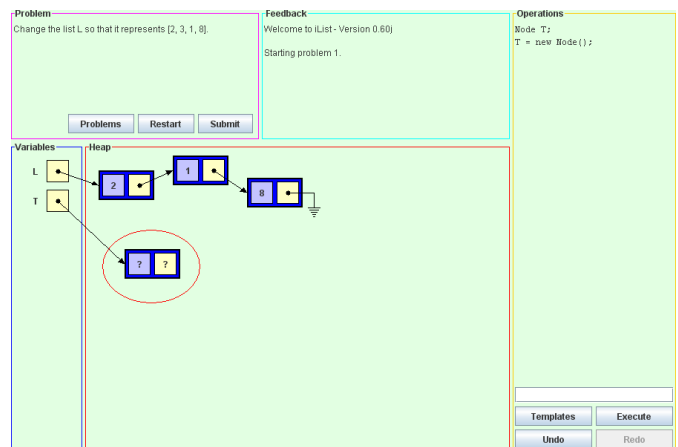
Click on the **'Problems'** button; then, click on **'1'**. Problem 1 will appear.



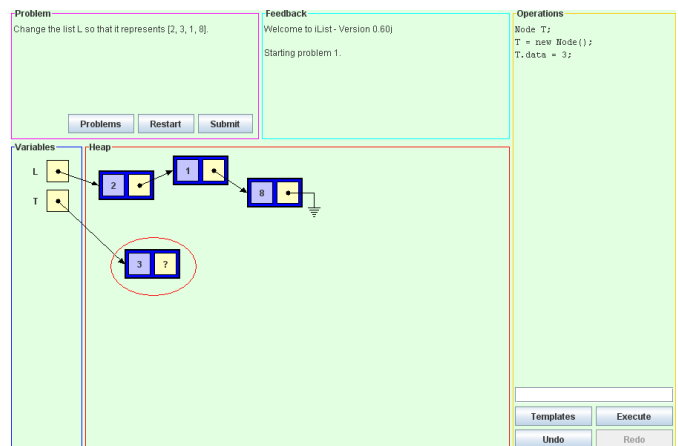
Type in **'Node \*T'** into the text box. A new variable **'T'** will be declared.



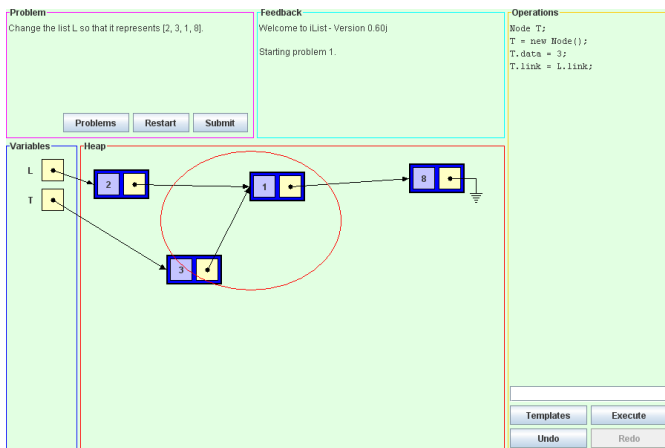
Now, type in **'T=new Node'**. You will see that **T** points to a new node.



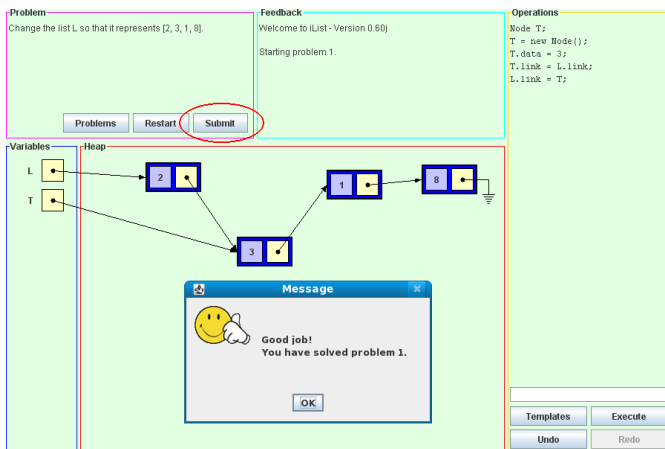
Then, type in **'T->data=3'** (**'T->info=3'** would also work). You should then see that **T** points to the node that contains 3.



Next, **'T->link=L->link'** (**'T->next=L->next'** would work, too). Node 3 is now pointing to node 1.



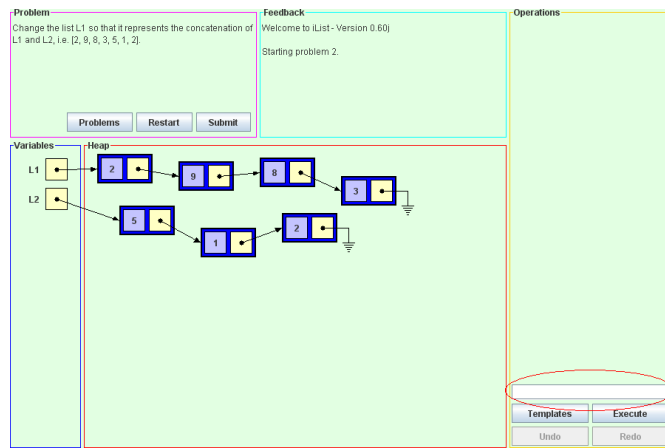
We now want to type in 'L->link=T'. We can now see that L represents 2, 3, 1, and 8. You can now press the "Submit" button, and... Great job!! You did it!!



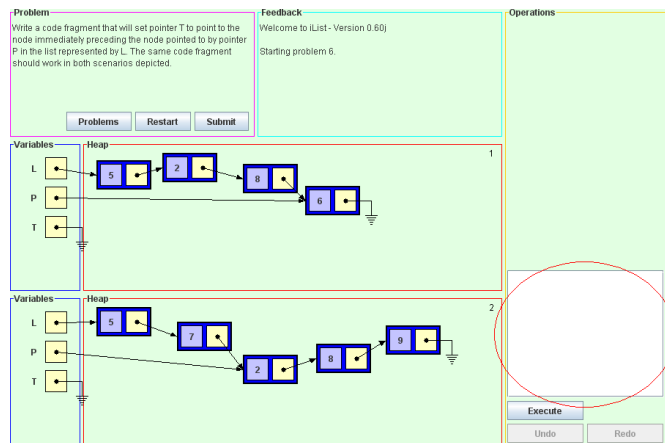
## Single-step vs. Block problems

Next, we will talk about the difference in solving problems 1 through 5 versus problems 6 and 7. The main difference is that, in order to solve 1 through 5, you have to type in one command at a time. Whereas, with 6 and 7, you have to type in an entire block of commands at one time to solve the problem successfully. Let's take a look.

This is Problem 2. Similar to Problem 1, you have to type in a single command at a time in order to solve the problem. This also applies to Problems 3, 4, and 5.



Below, we see Problem 6, where you have to write in an entire block of commands at one time to solve the problem. In this type of problems, your block of code will be executed *simultaneously* on all the scenarios presented. If your code is correct, all the scenarios will reach a correct state.



Notice that now you can use 'while' loops in addition to the commands already available to you in the previous problems. Other control flow statements, such as 'if' and 'for', are not needed here and iList does not recognize them. In the condition of a 'while' loop, you can use relational operators to test for equality ('==' and '!=') and logical operators for conjunction ('&&') and disjunction ('||').

Good luck!