Lab 1

Introduction to VisuAlgo
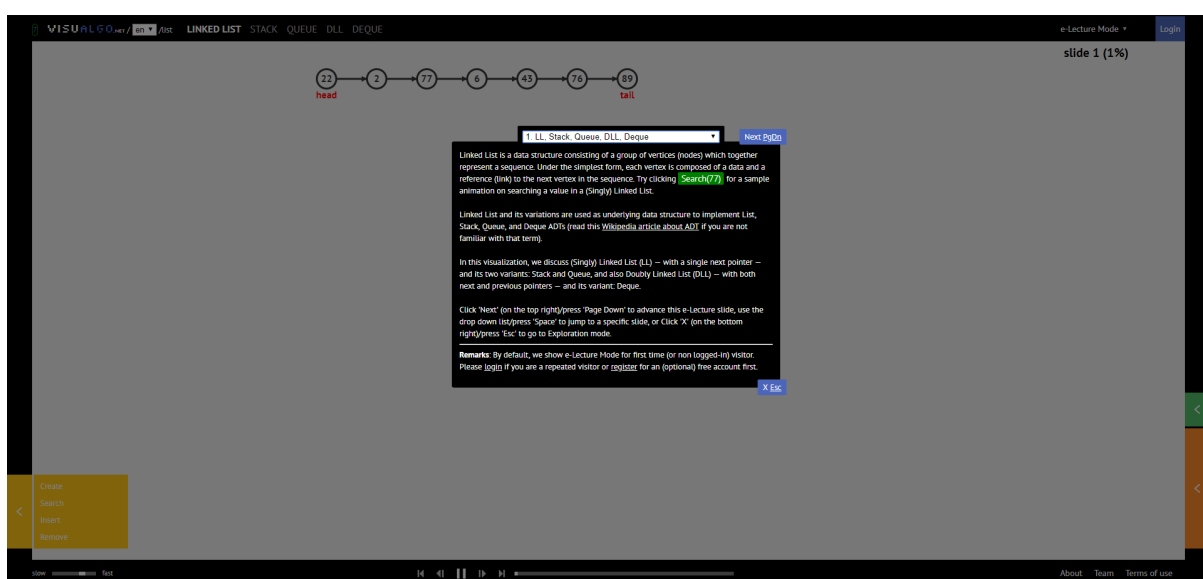
Navigating VisuAlgo

In this course, we will be using VisuAlgo, a visualization tool for data structures and algorithms.

1. Open the internet browser of your choice. VisuAlgo works best with Google Chrome.

2. Go to https://visualgo.net/en. You should see the webpage as below.

There are various topics you can choose from, which will provide you with visualizations and eLectures to reinforce your learning. In this lab, we will be looking at the Linked List module.
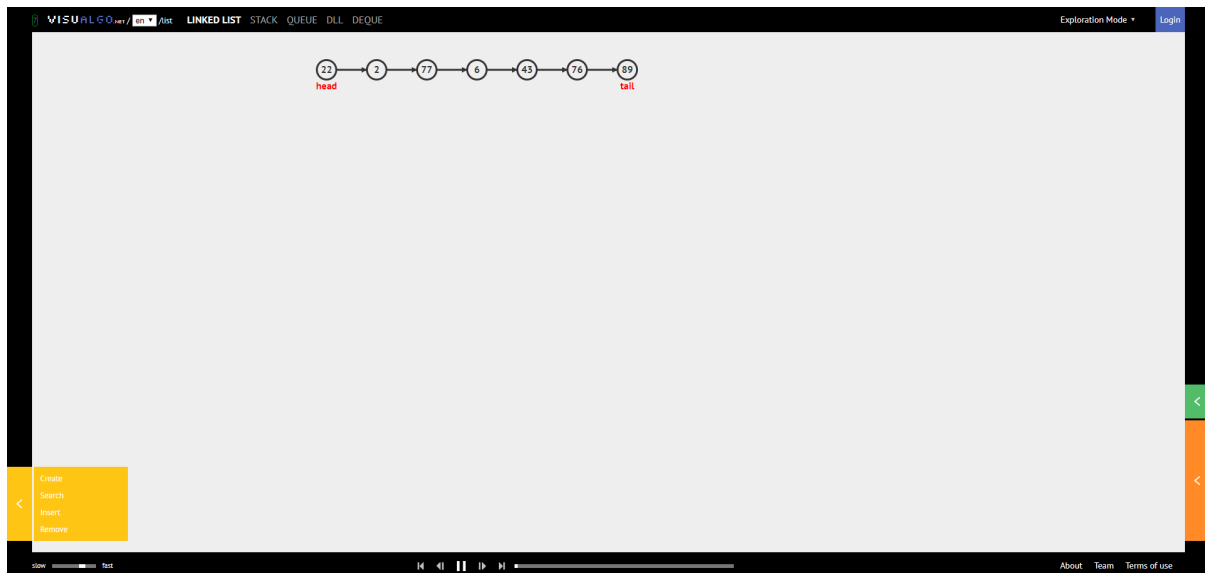
3. Click on the Linked List module in the red box shown above. You should see the page as below.

4. Go through the eLecture if you want to or press Esc to skip the lecture.

To play around with the visualization for Linked List using the controls in the bottom left corner and control the speed of the visualization using the controls at the bottom of the page. The pseudo code and the walkthrough can be found in the bottom right of the page.

To look at the visualization of the different types of Linked List using the menu at the top left corner of the page.

To restart the eLecture mode, click on the Exploration Mode button at the top right corner of the page.
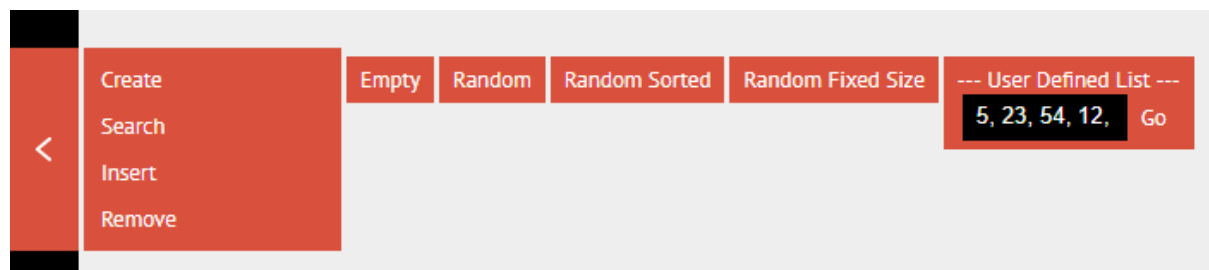
Linked List Module

Linked List is a type of data structure that uses pointers to allow items/data to be non-contiguous in memory, as compared to a simple 1D array. The items are ordered from index **0** to index **N−1** by associating item **i** with its neighbour item **i+1** through a pointer.

Upon entering the module, you will see a sample linked list.

VisuAlgo allows you to create a linked list using the controls in the bottom right hand corner. Let's create a user defined linked list with elements {5, 23, 54, 12, 94}.

5. Click on Create > --- User Defined List --- > Type in the elements > Click on Go.

Then, try to insert the element 69 at the end of the list.

6. Click on Insert > I = N (After Tail), specify v > Enter 69 > Click on Go.

You should be able to see the visualization for adding a node to the end of the list (tail) with the value 69.
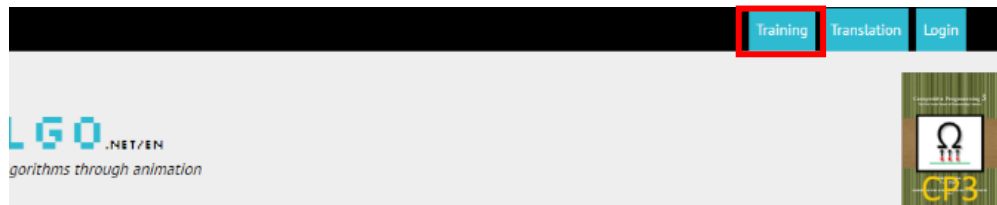

Now, try to remove the element 54, and search for the element 23 using the menu.
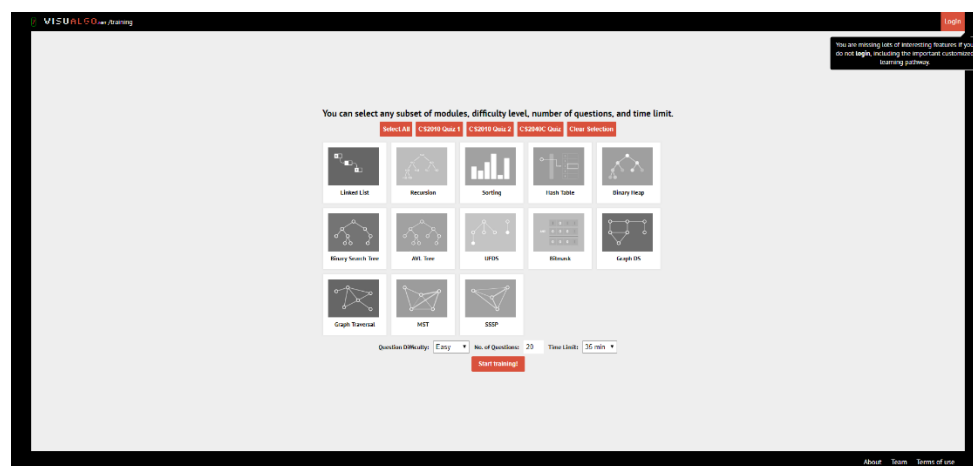
VisuAlgo Training Mode

VisuAlgo do have a training mode that can test your understanding of certain topics.

7.   Click on the VisuAlgo logo on the top left of the page.

8.   Click on the Training button on the top right of the page.

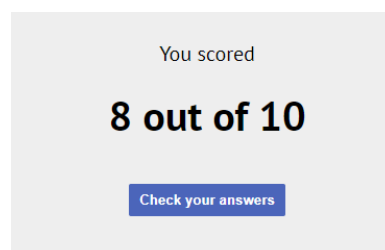Alternatively, you can go to https://visualgo.net/training.

You should be able to see the webpage as below.

9.   Click on Linked List module, and set the Question Difficulty to **Medium**, No. of Questions to **10** and Time Limit to **10 min**.

10. Click on **Start training!**

You will see questions that are generated from scripts with randomized parameters. We will use this testing mode to see if you have grasp the basic concepts. After you have completed, you should see your score of the quiz.

You scored

8 out of 10

Check your answers

You are encouraged to try out the more difficult questions in your free time!