

1 Linked List

Here is a description of what you need to do:

Create the linked list class as we did during our lecture. All the operations should be implemented. Make sure

your code is bug free – even if we had a bug in the code we discussed in class!

After that, add methods in the class to support the following new operations:

1.1 Length

Add a function called `len` that returns the length of the list i.e. the number of elements in the list. The logic is

simple: loop over the whole list and keep track of a counter. At the end, return the counter.

1.2 Index-based Retrieval

Add a function called `get` that takes one parameter – an index – and returns the value at that index. For instance, if

we have a list `lst`:

`[1, 2, 5, 4, 2]`

and we call `lst.get(2)`, it should return 5. If the function is given an index that does not exist (i.e. is beyond

the limit of the list), the function should raise an `IndexError` type exception. For instance, calling `get(10)` on the

list above should result in an `IndexError` exception with a meaningful message.

The logic for the retrieval is again quite simple: loop over the whole list and keep track of a counter. When the

counter reaches the desired value, simply return the value at that position. If we reach the end of the list, it means

we have an `IndexError`.