

# CMPUT 275 Wi18 - INTRO TO TANGIBLE COMPUT II

## Combined LBL Wi18

### Exercise 6: Divide and Conquer

Download the included file "exercise6.py" and complete both functions.

#### Part 1

The function `findValley()` should run in  $O(\log(n))$  time where  $n$  is the size of the list (hint: divide and conquer, i.e., what underlies merge sort and many other recursive algorithms).

Trivial solutions that run linear time will not receive any marks.

**Warning:** if your code performs a list slice (something like `l[:k]` or `l[k:]`) then it is probably taking linear time! In particular, list slice unfortunately makes a full copy of the sliced portion of the list.

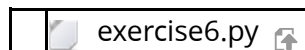
#### Part 2

For full marks, the function `climbing()` should run in  $O(n * \log(\text{limit}))$  time where `limit` is the last parameter of the function and  $n$  is the length of the list.

(hint: can you at least check if a proposed value for the value of 'burst' is sufficient to reach the top in the given time limit?)

Feel free to change the docstring comments for both functions if you want. They are very long. You do not need docstring tests.

Submit your completed implementation of both functions (along with any helper functions you want) in a single file `exercise6.py` and upload it. Do not zip it. Remember to adhere to the code submission guidelines, including helpful comments describing your solution with useful variable names.



#### Submission status

Attempt number	This is attempt 1.
Submission status	Submitted for grading
Grading status	Not graded
Due date	Monday, 19 March 2018, 11:55 PM
Time remaining	Assignment was submitted 12 hours 47 mins early
Last modified	Monday, 19 March 2018, 11:07 AM

 exercise6.py 

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Submission comments

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