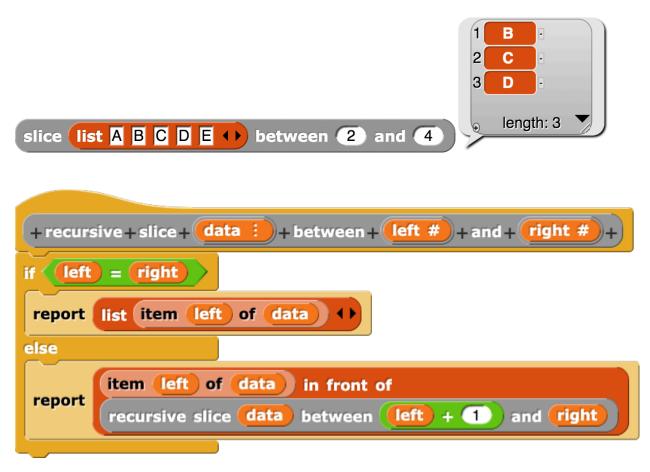
CS10 With-Computer Final (Fall 2017) Solutions

Snap! Questions: (use this starter file: http://bit.ly/2zzzxA5)

You want to replicate Python's list "slice" in Snap!. However, it should follow Snap!'s convention to index lists starting from 1 and include the rightmost element. You don't have to handle the case when the inputs are blank or do any error checking. That is, assume the left number ≤ the right number, and that both numbers are between 1 and the list length. If the numbers are equal, it returns a list of the element at that index.

a) Write it recursively. You may not use any iteration (**repeat, repeat until, for, for each**) or higher- order functions in this solution.



b) Write it using higher-order functions (only **map**, **keep** and **combine**). One helper you might find handy is the "**numbers between** () **and** ()" block.



Python Question:

Write a function that returns the *first duplicate word* of an essay whose words are all in lowercase (with no punctuation). If there are no duplicates, return the empty string. You *must* use a dictionary in your solution; if you forget any commands, remember there's **help**(*type*)and **dir**(*type*), as in **help**(**dict**) or **dir**(**str**). To split a string into a list of words, you might find string's **split** command helpful.

first_duplicate("ask not what your country can do for you ask what")→"ask" first_duplicate("cs ten is the best class at cal")→""

```
def first_duplicate(essay):
dict = {}
for word in essay.split():
    if word in dict:
        return word
    else:
        dict[word] = 1
    return ""
```