Assignment 9: Generating Permutations with Recursive Backtracking Due **in class** *Thursday, 11/29*

November 26, 2018
CS: DS&A
Proof School

This is a very short assignment. The weekend's assignment will be longer.

Write a function `generate_permutation(n, candidate=None)` that takes a positive integer n and prints out all $n!$ permutations of 0 through $n-1$ (in any order). Use the paradigm of recursive backtracking discussed in class.

For instance, `generate_permutation(3)` prints:

```
012
021
102
120
201
210
```

Bonus points if each run through the function (not counting the recursive calls it makes) is $O(n)$ in the length of the candidate, not $O(n^2)$. (Note that the `in` function with Python lists is linear in the length of the list.)