1. Write a recursive algorithm to compute the nth fibonacci number
   1. Implement this algorithm in python
   2. What is the runtime of this function?
2. Write an algorithm to compute n-factorial recursively
   1. Implement this algorithm in python
   2. What is the runtime of this function?
3. Write an algorithm to recursively reverse a string
   1. Implement this algorithm in python
   2. What is the runtime of this function?
   3. How can I change it to reverse a list instead
4. Write your own pseudocode for a recursive binary search.
   1. Implement this algorithm in python
5. You were asked on your midterm practice to recursively calculate nk
   1. Write pseudocode for this algorithm
   2. Implement it in python
6. Write a recursive algorithm to check whether a string of parentheses, curly brackets and square brackets is balanced:
   1. “(([{}]))” should return true, “())” should return false
   2. Implement this algorithm in python
7. Write your own pseudocode for merge sort
   1. Implement this algorithm in python