CS111 - Recitation 12

Exercise 0: Project
Your peer leader will go over any questions you have about the project.

Exercise 1: Insertion Sort
- What is the algorithm for insertion sort?
- Trace insertion sort over the following array: [15, 2, 8, 1, 17, 5]
- What is the best case, worst case, and big O?

Exercise 2: Mergesort
- Discuss how the merge-sort algorithm works.
- Now trace mergesort on the following array:
  [11, 13, 9, 101, 13, 45, 46, 21, 7, 18, 2, 33, 76, 25, 21, 2, 44]

Exercise 3: Recursion Warm-up
Write a recursive method for finding the factorial of a given number: **public int factorial(int n)**
- What is the base case?
- What is the recursive step?

Exercise 4: Recursive Binary Search
Implement a recursive version of the binary search algorithm.

Exercise 5: Recursion
- Write a recursive method to reverse a String: **public String reverse(String s)**
- Write a recursive method to determine if a String is a palindrome:
  public boolean isPalindrome(String s)