**Intro to TDD**

Objectives:

* Practice writing and running tests on an algorithm

Now that you've learned how to use unittest, let's have you do the following:

1. **reverseList** - Write a function that reverses the values in the list (without creating a temporary array).
   * Example: reverseList([1,3,5]) should return [5,3,1]
   * Example Test: assertEqual( reverseList([1,3,5]), [5,3,1] )
   * Add at least 3 other test cases
2. **isPalindrome** - Write a function that checks whether the given word is a palindrome (a word that spells the same backward).
   * Example: isPalindrome("racecar") should return True
   * Example Test: assertEqual( isPalindrome("racecar"), True ) or assertTrue( isPalindrome("racecar"))
   * Example Test: assertFalse( isPalindrome("rabcr") ).
   * Add at least 5 other test cases
3. **coins** - Write a function that determines how many quarters, dimes, nickels, and pennies to give to a customer for a change where you minimize the number of coins you give out.
   * Example: given 87 cents, result should be 3 quarters, 1 dime, 0 nickel and 2 pennies
   * Example Test: assertEqual( coin(87), [3,1,0,2] )
   * Add at least 5 other test cases
4. **BONUS - factorial** - Write a *recursive* function that returns the factorial of a given number. Remember that the factorial of a number is the product of all the numbers between 1 and the given number (eg. 4! = 4\*3\*2\*1).
   * Example: factorial(5) should return 120.
   * Add at least 3 test cases
5. **BONUS - fibonacci** - Write a *recursive* function that accepts a number, n, and returns the nth Fibonacci number from the sequence. The first two Fibonacci numbers are 0 and 1. Every number after that is calculated by adding the previous 2 numbers from the sequence. (i.e. 0, 1, 1, 2, 3, 5, 8, 13, 21 ...)
   * The sequence starts with fib(0) so fib(5) is actually 5 and fib(4) is 3. <https://en.wikipedia.org/wiki/Fibonacci_number>
   * Add at least 3 test cases

For the purpose of this assignment, do all of these in a single Python file.

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* Write a reverseList function and test it with at least 3 cases
* Write an isPalindrome function and test it with at least 5 cases
* Write a coins function and test it with at least 5 cases
* BONUS: Write a recursive factorial function and test it with at least 3 cases
* BONUS: Write a recursive fibonacci function and test it with at least 3 cases

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