

## NextClass-2: Functional Abstraction

CS173: Intermediate Computer Science  
Instructor: Thomas Bressoud

Spring 2014  
Due 2013-01-24

Give *complete* pre- and post-conditions for each of the following functions

1. `min(L)`: A function to compute the smallest number in the list L  
**pre:**  
  
**post:**
2. `mean(L)`: A function to compute the average (mean) of numbers in the list L  
**pre:**  
  
**post:**
3. `find(L, x)`: A function to find the index of the first occurrence of x in the list L.  
**pre:**  
  
**post:**
4. `grade(N)`: A function to convert a numeric grade N to a letter grade (i.e., 90-100 is an A, 80-89 is a B, 70-79 is a C, 60-69 is a D, and 59 or below is an F)  
**pre:**  
  
**post:**

5. `centeredAverage(L)`: A function to compute the average of a list of numbers after the smallest and largest numbers have been taken out.

**pre:**

**post:**

6. `winner(s1, s2)`: A function that takes the scores of two players as parameters and prints out if Player 1 or Player 2 has the higher score.

**pre:**

**post:**

7. `removeN(L, n)`: A function that returns the list `L` with the `n`th element removed.

**pre:**

**post:**

8. `replace(s, old, new)`: A function that returns the string `s` with all occurrences of the string `old` replaced with the string `new`.

**pre:**

**post:**