

Exercise

CSC140 Foundations of Computer Science

18 February 2015

Write a program that contains...

- a method that creates an array of n floating point numbers, assigns to each element of the array a random number in the interval $[0.0, 1.0)$, where each random number is drawn from a uniform distribution, and returns the array to its caller.
- a method that receives an array of floating point numbers from its caller and prints the numbers on the computer's display screen.
- a method that returns the sum of the elements in an array of floating point numbers.
- a method that receives an array of floating point numbers from its caller, computes the sum of the numbers in the array, and then returns to its caller a new array whose i^{th} element's value is the value of the i^{th} element of the given array divided by the sum of all of the elements in the given array.
- a method that receives an array of floating point numbers from its caller and returns to its caller a new array whose i^{th} element's value is the sum of the first i elements in the given array.
- a method that receives an array of floating point numbers named *data* and a floating point number r from its caller, and returns to its caller the index of the first element in *data* that is greater than r —you may assume that the elements of *data* are sorted in ascending order, that all elements lie in the interval $[0.0, 1.0]$, that the value of the last element in the array is 1.0, and that r has a value in the interval $[0.0, 1.0)$.
- a `main()` method that contains code that tests all of the other methods.