Scala Assignment 1

Due Nov 16 23:55

1. Write a function fahrenheitToCelsius converts Fahrenheit to Celsius. The input is a float representing a Fahrenheit tempurature, the return value is the equivalent Celsius. In case you have forgotten we have:

$$C = \frac{5}{9} * (F - 32)$$

2. Write a script, in a file called convert.scala, that converts all its command line arguments from Fahrenheit to Celsius and prints out the result. Do not use any if statements or loops (for while, do in the script. Assume that all the arguments are valid Fahrenheit values. Here is a sample run of the script:

```
scala convert.scala 32.0 212.0 100
0.0
100.0
37.77778
```

3. Write a function sum that returns the sum of the elements of its one argument. So sum(Array(1,2,3)) returns 6 and sum(List(4,5)) returns 9. No loops are needed in sum.

4. Write a function standardDeviation that has one argument, an array of doubles, that returns the standard deviation of the elements in the array. That is return the value:

$$\sqrt{\frac{\sum_{k=0}^{N-1}\left(A(k) - \overline{A}\right)^2}{N}} \quad \text{where} \quad \overline{A} = \frac{\sum_{K=0}^{N-1}A(k)}{N}$$

and N is the size of the array and A(k) is the k'th element of the array. Do not use any loops in the function(s) you write to compute the value. For example standardDeviation(Array(0,2,4)) returns 1.632993161855452