INTRODUCTION TO COMPLEX SYSTEMS, JAVA, MVN, AND GIT

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1 Introduction

With the help of Maven and Git, a mean and standard deviation calculator was developed. For this program the input was read from a file with n real numbers.

2 Content

- **Mean**: The mean or average consists of the result obtained by creating a division between the sum of the different quantities by the number that represents the total amount of quantities in the set. [1]
- **Standard Deviation** The standard deviation allow us to understand how close the numbers of a set are to the mean. [2]

3 Design

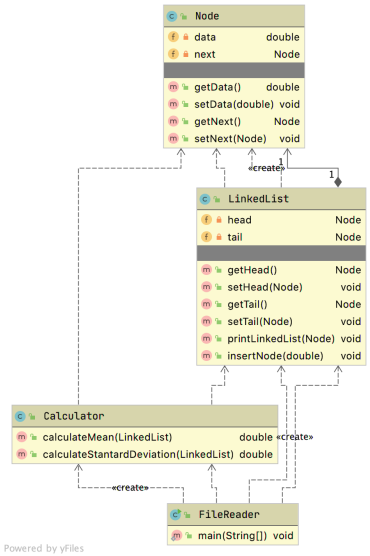

Figure 1: Class Diagram

4 Execution and Tests

In order to successfully execute the program and tests, follow the next step by step:

1. First, download the project from GitHub executing the following command:

   ```
   git clone https://github.com/srubianof/AREP-LAB-1.git
   ```

2. Second, built the project using maven:

   mvn **package**

3. Third, execute the project with java, keep in mind to put the right file name where the data sets are located:

   ```
   java -cp target/ComplexSystems-1.0-SNAPSHOT.jar
   edu.escuelaing.arem.ASE.app.FileReader "data.txt"
   ```

4. Fourth, execute the tests, the idea of each test is to verify right behaviour of each class

   ```
   mvn test
   ```

References

[1] Statistics intro: Mean, median, amp; mode (video). (n.d.). Retrieved August 08, 2020, from https://www.khanacademy.org/math/ap-statistics/summarizing-quantitative-data-ap/measuring-center-quantitative/v/statistics-intro-mean-median-and-mode

[2] ¿Qué es la desviación estándar? (n.d.). Retrieved August 08, 2020, from https://support.minitab.com/es-mx/minitab/18/help-and-how-to/statistics/basic-statistics/supporting-topics/data-concepts/what-is-the-standard-deviation/