



# Heroku: Interpreters, communication channels and memory

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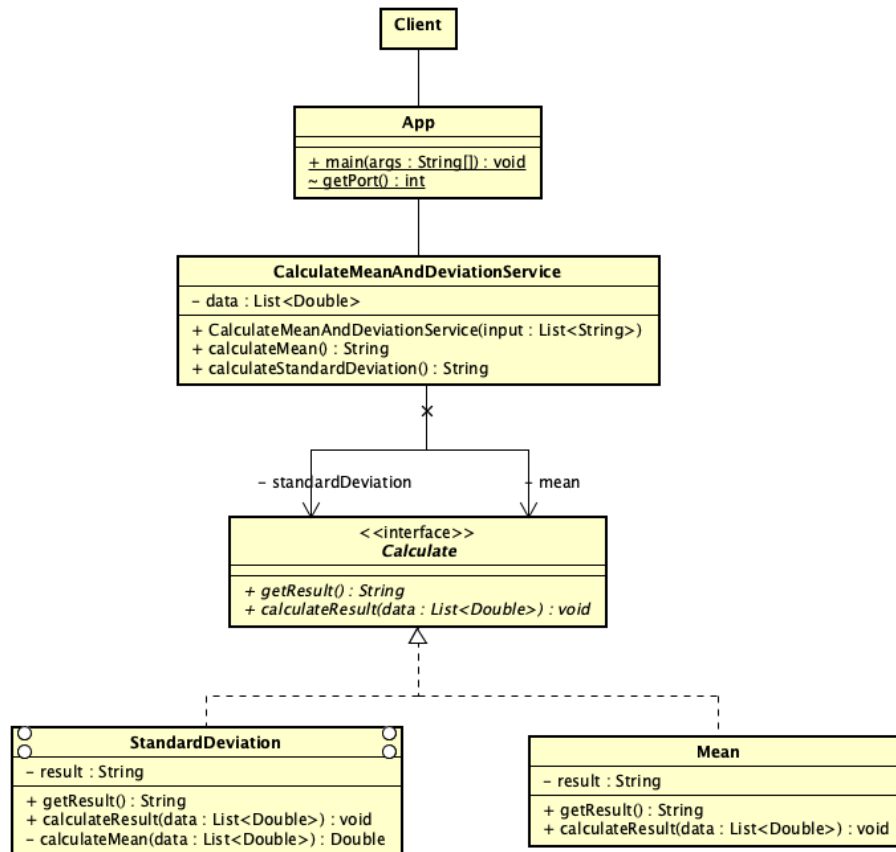
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## 1 Introduction

In this workshop, We use Spark as a framework that allows us to deploy a web server which is used to receive requests from the browser and respond to them, The data for this application will be used for the calculation calculation of the mean and the standard deviation. We proceed to read input and save it in a data structure that allows the corresponding iteration to obtain the appropriate results. linked list will be used to store the data that is read from input. The data structure will allow us to iterate over the data and make the respective calculation.

Interpreter is a computer program capable of analyzing and running other programs. Interpreters differ from compilers or assemblers in that while compilers translate a program from its description in a programming language into the system's machine code, interpreters only perform the translation as needed, typically instruction by instruction, and do not normally save the result of that translation. Currently, one of the most common environments in which interpreters are used is in web browsers, due to the possibility that they can run independently of the platform.

## 2 Desing



Everything starts with a request from the **client** from your browser, this request is received by our application in the **app** class, which using the service class called **CalculateMeanAndDeviationService** performs a change of type on the input entered by the user and stores it in a **linked list**, the linked list with the data is sent to the Calculate interface which is implemented by the **Mean** and **StandardDeviation** entities which perform the corresponding calculations, under the **calculateMean** and **calculateStandardDeviation** method the server obtains the results and sends them to the client's browser..

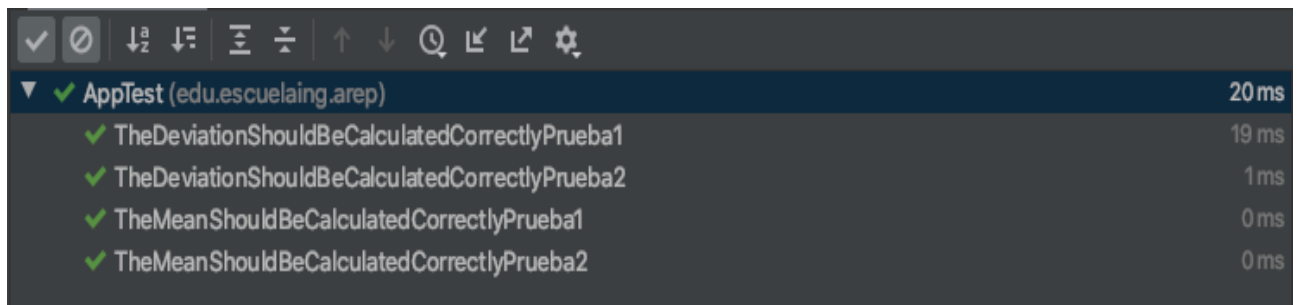
### 3 Conclusion

- The program makes the calculations corresponding to the average and standard deviation in a correct way, making the reading of files or directories containing files with the respective data sample.
- Spark facilitates communication between client and server using post and get requests.
- It was possible to obtain data from a client and show the results to the respective calculations

### 4 Test

A total of 4 tests have been performed where different scenarios are contemplated to show that the code is correct, among the tests the following events were tested

- Calculation of the average of a data sample.
- Calculation of the Standard Deviation of a data sample.



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▼	✓	AppTest (edu.escuelaing.arep)										20 ms
	✓	TheDeviationShouldBeCalculatedCorrectlyPrueba1										19 ms
	✓	TheDeviationShouldBeCalculatedCorrectlyPrueba2										1 ms
	✓	TheMeanShouldBeCalculatedCorrectlyPrueba1										0 ms
	✓	TheMeanShouldBeCalculatedCorrectlyPrueba2										0 ms