Design and implement a (console) application that takes a text file as input then analyzes it and:

1) outputs result as a JSON file

2) stores the result into an SQL database (in normalized form).

Analysis consists of counting number of sentences, number of words in each sentence and number of letters in each word.

Focus on the following requirements:

\* Production quality code ( simple, “clean”: maintainable, extensible, testable)

\* Unit tests

\* DB schema optimized for storage

\* Input file is UTF encoded (agnostic of language)

\* Provision possibility to:

o Ability to add a new text analysis algorithm (upon demand)

o Ability to change the format of output (upon demand)

Example.

For the input text:

“Deberíamos haber hecho más. No lo defiendo, sino que trato de explicarlo.”

The expected output should be:

//JSON

{

"sentenceCount": "2",

"wordsBreakDown": [

{

"sentenceNumber": "1",

"wordsCount": "4",

"lettersBreakDown": [{"wordNumber": "1","lettersCount": "10"},{"wordNumber":"2","lettersCount": "5"},{"wordNumber": "3","lettersCount": "5"},{"wordNumber": "4","lettersCount": "3"}]

},

{

"sentenceNumber": "2",

"wordsCount": "8",

"lettersBreakDown": [{"wordNumber": "1","lettersCount": "2"},{"wordNumber" : "2","lettersCount": "2"},{"wordNumber": "3","lettersCount": "8"},{"wordNumber" : 4,"lettersCount": "4"},{"wordNumber" : 5,"lettersCount": "3"},{"wordNumber": 6,"lettersCount": "5"},{"wordNumber": "7","lettersCount": "2"},{"wordNumber": "8","lettersCount": "10"}]

}

]

}