Justification of Lexer implementation:

We have chosen to implement our own Lexer from scratch using python because we are more familiar with python than we are with JLex; it is a language that is widely known for being user-friendly and easily learned. Therefore, using python is more efficient and less time consuming. Moreover, python has a wide library of regular expressions that is well-documented and widely used by the large python community from which we can get support and help through forums. Finally, python has a variety of data structures (dictionaries, lists, …) to help us organize and assign each lexeme to its token.

Implementing a lexer from scratch also offers us more control over it; it allows us to write our own tokens that are adapted to our project instead of being limited to the tokens defined by a lexer generator. We can also customize actions when a certain pattern is found and decide whether it is illegal or not.

Finally, by building our own lexer we get a deeper understanding of the mechanics of a lexer and how regular expressions are used to match patterns.