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**ASSIGNMENT**

**The differences between lexemes and tokens are;**

1. **A lexeme is a sequence of characters in the source program that matches the pattern for a token and is identified by the lexical analyzer as an instance of that token while A token is a pair consisting of a token name and an optional attribute value and the token name is an abstract symbol representing a kind of lexical unit. Example, a particular keyword, or sequence of input characters denoting an identifier. The token names are the input symbols that the parser processes.**
2. **Lexemes are words derived from the character input stream while Tokens are lexemes mapped into a token-name and an attribute-value. Example, when a source program is fed into the lexical analyzer, it begins by breaking up the characters into sequences of lexemes. The lexemes are then used in the construction of tokens. A variable called myVar would be mapped into a token stating<id, “num” should point to the variable’s location in the symbol table.**

**x = a + b \* 2**

**which yields the lexemes: {x, =, a, +, b, \*, 2}**

**with corresponding tokens: {<id, 0>, <=>, <id, 1>, <+>, <id, 2>, <\*>, <id,3>}**