

SOLUTIONS - LEXICAL ANALYSIS

Imagine you have a language that has only *operators*, *identifiers*, and two *reserved words*, and the following characteristics:

- the only legal characters are the letters A and B, the digit 1, and the characters = and >
- there are only three operators >, =, and >=
- there are only two reserved words A1 and B1
- identifiers can be of any length, and can only include A's, B's, and 1's.
- the principle of the longest string applies.
- spaces are legal, but cannot be ignored (i.e., they are not useless).

Show the final sequence of tokens resulting from a lexical scan of each of the following character sequences. Give your response with one token per line indicating if it is a keyword, an identifier, or an operator.

[10]

a. 11A111B1=>=A1B1111A (5)

| Token | Keyword | Identifier | Operator |
|----------|---------|------------|----------|
| 11A111B1 | | X | |
| '= | | | X |
| >= | | | X |
| A1B1111A | | X | |
| | | | |
| | | | |

a. A1>=B1 A1B1 111 (5)

| Token | Keyword | Identifier | Operator |
|-------|---------|------------|----------|
| A1 | X | | |
| >= | | | X |
| B1 | X | | |
| A1B1 | | X | |
| 111 | | X | |
| | | | |