



- alphabet $\rightarrow [a-z|A-Z]$
- digit $\rightarrow [0-9]$
- $\Sigma \rightarrow$ all ASCII characters
- All transitions from non-final state that are not shown in the DFA, lead to the Trap state
- At accept state, either of 3 things occur -
 - i) CONTINUE: the state changes to start state (no tokenization)
 - ii) return < token, attribute associated >: returns the token after tokenization along with some attributes (in case of Identifier and Number) and then goes to start state
 - iii) exit(0): the lexer ends.
- In case of identifier, the lexer searches for it in the lookup table. If there is a match, then the input string is a keyword (includes AND, OR, true, false) and the getToken() function returns the token corresponding to it. Else, the getToken() function returns ID as token.
 - Also, in case of identifier, along with the token, the line number (through the lineNo variable) and the lexeme is also returned.
- In case of numbers (both integer and floating-point) the value of the number is also returned along with its token (NUM for integer, RNUM for float)
- In all other cases, only the token is returned

Meaning of

```
if (flag == 'yes')
```

```
{
    Tokenize the lexeme in range [begin, forward-1] and
    return the token along with its associated value
    and go to start state WITHOUT processing
    further input
}
```

```
else
```

```
{ perform the normal function of taking input
  at buffer[forward] and processing it
}
```

Meaning of *

```
if (buffer[forward] == ',')
```

```
{
    set flag to 'yes'
    forward = forward + 1
    set state = 2
}
```

Meaning of X

Increment lineNo by 1.

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