

/* Constructing a Lexer */

Steps to be followed, to construct a lexer in Java + ANTLR + Eclipse

- (1) Installed Eclipse.

Download it from <https://www.eclipse.org/downloads/>

- (2) Download 'Antlr' Jar file.

Go to this link [Download ANTLR](#)

Go to the sub topic 'ANTLR tool and Java Target'

Click on '[Complete ANTLR 4.10.1 Java binaries jar](#)'

- (3) Open Eclipse, move help->MarketPlace-> Type 'Antlr', click 'Go' -> Install Antlr 4.

- (4) Create a new Java project.

- a. Enter Project Name
- b. Deselect 'Create module-info.java file'
- c. Click next
- d. Under default output folder, if 'bin' is there then change it as 'src'.

- (5) Right click on project – go to build path – add external archive – add 'Antlr' Jar file.

- (6) Right click on 'src' - Open New file – save the file with .g4 extension – Example: abc.g4

6.1) enter the lexer grammar

```
lexer grammar abc;  
IF: 'if' {System.out.println("IF Keyword");};  
ID: [a-z][a-z 0-9]* {System.out.println("ID");};  
DIGIT: [0-9]* {System.out.println("DIGIT");};  
WS: [ \t\r\n]+ -> skip;
```

Note: The file .g4 file name should match in the first line

6.2) save the file

6.3) Run the file as 'generate antlr recognizer'.

- (7) Right click on 'Src' – click 'Properties' – click 'Antlr' – click 'Tool' – click 'enable project specification setting' – click 'Add' – open 'the antlr jar file' – select the added jar file – change the Directory as '.\src' – click 'apply and close'.

- (8) Right click on 'src' - Open a new 'input' file – add sample input.

- (9) Right click on project – create new class – enter class name – select 'Public static void main' – click 'finish'.

(10) In the Java class file, do the coding

Copy paste the import commands and add the coding given

```
import org.antlr.v4.runtime.ANTLRFileStream;
import org.antlr.v4.runtime.CharStream;
import org.antlr.v4.runtime.Token;

try { CharStream input = new ANTLRFileStream("C:\\Users\\admin\\eclipse-
workspace\\token2\\src\\input");
/* give your file path of the input file in the above place*/

abc lexer = new abc(input);
Token token;
while ((token = lexer.nextToken()).getType() != -1)
{ System.err.println(token.getText()); }
catch (Exception e) { System.out.println(e); }
```

“In the following statement, remember that the ‘path’ of the input file to be pasted.
CharStream input = new ANTLRFileStream("C:\\Users\\admin\\eclipse-
workspace\\token2\\src\\input);”

(11) Run the Java Class file as “java application”.

Points to remember

- (1) If ‘abc.g4’ is your lexer grammar file, see that the abc.java file is stored under ‘src’ folder. If not click and drop it there.
- (2) In final main java program, it should be v4.runtime in the import statements.
- (3) In the following statement, remember that the ‘path’ of the input file to be pasted.
CharStream input = new ANTLRFileStream("C:\\Users\\admin\\eclipse-
workspace\\token2\\src\\input);