(ScannerMiniLan)

* Unzip ScannerMiniLan
* Click getTerminal
* MiniLan.lex>editar en note pad++
* Text>editar en note pad++

MiniLan.lex\_\_\_

import java.io.InputStreamReader;

import java.lang.System;

%% (esto son los directives)

%char

%public

%standalone

%full

DIGIT=([0-9]) (macro declaration)

%%

; {System.out.println("SCANNER:: found punctuation symbol SEMICOLON");}

"+" (or write \+) {System.out.println("SCANNER:: found Operator ADD");}

begin {System.out.println("SCANNER:: found Reserved Word BEGIN");}

{DIGIT} (macro expansion) {System.out.println("SCANNER:: found DIGIT <"+ yytext() +">");} (yytext\_ method to access the lexin of the character)

(" "|\t|\n)+ {}

. {System.out.println("SCANNER:: Unmatched input <"+ yytext() +">");}

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C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>cmd

Microsoft Windows [Versión 10.0.19044.2486]

(c) Microsoft Corporation. Todos los derechos reservados.

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>generateScanner.bat

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -jar jflex-full-1.7.0.jar MiniLan.lex (no errors in javalex)

Reading "MiniLan.lex"

Constructing NFA : 34 states in NFA

Converting NFA to DFA :

................

18 states before minimization, 12 states in minimized DFA

Writing code to "Yylex.java"

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>javac Yylex.java

(no errors in javac)

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(if they are errors- no scanner generate)

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C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -classpath ; Yylex test

SCANNER:: found Reserved Word BEGIN

SCANNER:: found punctuation symbol SEMICOLON

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Edit minilan and save

import java.io.InputStreamReader;

import java.lang.System;

%%

%char

%public

%standalone

%full

DIGIT=([0-9])

%%

; {System.out.println("SCANNER:: found punctuation symbol SEMICOLON");}

"+" {System.out.println("SCANNER:: found Operator ADD");}

begin {System.out.println("SCANNER:: found Reserved Word BEGIN");}

end {System.out.println("SCANNER:: found Reserved Word END");}

{DIGIT} {System.out.println("SCANNER:: found DIGIT <"+ yytext() +">");}

(" "|\t|\n)+ {}

. {System.out.println("SCANNER:: Unmatched input <"+ yytext() +">");}

\_\_

Edit test and save:

begin

;

end

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C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -jar jflex-full-1.7.0.jar MiniLan.lex

Reading "MiniLan.lex"

Constructing NFA : 40 states in NFA

Converting NFA to DFA :

...................

21 states before minimization, 15 states in minimized DFA

Old file "Yylex.java" saved as "Yylex.java~"

Writing code to "Yylex.java"

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>javac Yylex.java

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -classpath ; Yylex test

SCANNER:: found Reserved Word BEGIN

SCANNER:: found punctuation symbol SEMICOLON

SCANNER:: found Reserved Word END

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Write in the director section the macro INTEGER in MiniLan

import java.io.InputStreamReader;

import java.lang.System;

%%

%char

%public

%standalone

%full

DIGIT=([0-9])

INTEGER=({DIGIT}+) (equivalent to ({DIGIT}{DIGIT}\*) and ({DIGIT}\*{DIGIT})

%%

; {System.out.println("SCANNER:: found punctuation symbol SEMICOLON");}

"+" {System.out.println("SCANNER:: found Operator ADD");}

begin {System.out.println("SCANNER:: found Reserved Word BEGIN");}

end {System.out.println("SCANNER:: found Reserved Word END");}

{DIGIT} {System.out.println("SCANNER:: found DIGIT <"+ yytext() +">");}

(" "|\t|\n)+ {}

. {System.out.println("SCANNER:: Unmatched input <"+ yytext() +">");}

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Add the rule for integer

import java.io.InputStreamReader;

import java.lang.System;

%%

%char

%public

%standalone

%full

DIGIT=([0-9])

INTEGER=({DIGIT}+)

%%

; {System.out.println("SCANNER:: found punctuation symbol SEMICOLON");}

"+" {System.out.println("SCANNER:: found Operator ADD");}

begin {System.out.println("SCANNER:: found Reserved Word BEGIN");}

end {System.out.println("SCANNER:: found Reserved Word END");}

{DIGIT} {System.out.println("SCANNER:: found DIGIT <"+ yytext() +">");}

{INTEGER} {System.out.println("SCANNER:: found NUMBER <"+ yytext() +">");}

(" "|\t|\n)+ {}

. {System.out.println("SCANNER:: Unmatched input <"+ yytext() +">");}

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C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -jar jflex-full-1.7.0.jar MiniLan.lex

Reading "MiniLan.lex"

Constructing NFA : 44 states in NFA

Converting NFA to DFA :

....................

22 states before minimization, 16 states in minimized DFA

Old file "Yylex.java" saved as "Yylex.java~"

Writing code to "Yylex.java"

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>javac Yylex.java

\_\_\_

Edit test

123 4

begin

;

End

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C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -classpath ; Yylex test

SCANNER:: found NUMBER <123>

SCANNER:: found DIGIT <4> **(not working very precisely)**

SCANNER:: found Reserved Word BEGIN

SCANNER:: found punctuation symbol SEMICOLON

SCANNER:: found Reserved Word END

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**Edit putting integer before digit rule**

import java.io.InputStreamReader;

import java.lang.System;

%%

%char

%public

%standalone

%full

DIGIT=([0-9])

INTEGER=({DIGIT}+)

%%

; {System.out.println("SCANNER:: found punctuation symbol SEMICOLON");}

"+" {System.out.println("SCANNER:: found Operator ADD");}

begin {System.out.println("SCANNER:: found Reserved Word BEGIN");}

end {System.out.println("SCANNER:: found Reserved Word END");}

{INTEGER} {System.out.println("SCANNER:: found NUMBER <"+ yytext() +">");}

{DIGIT} {System.out.println("SCANNER:: found DIGIT <"+ yytext() +">");}

(" "|\t|\n)+ {}

. {System.out.println("SCANNER:: Unmatched input <"+ yytext() +">");}

\_\_\_

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>generateScanner.bat

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -jar jflex-full-1.7.0.jar MiniLan.lex

Reading "MiniLan.lex"

Constructing NFA : 44 states in NFA

Converting NFA to DFA :

....................

Warning in file "MiniLan.lex" (line 21): **Warning because changing the rule**

Rule can never be matched:

{DIGIT} {System.out.println("SCANNER:: found DIGIT <"+ yytext() +">");}

22 states before minimization, 15 states in minimized DFA

Old file "Yylex.java" saved as "Yylex.java~"

Writing code to "Yylex.java"

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>javac Yylex.java

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -classpath ; Yylex test

SCANNER:: found NUMBER <123>

SCANNER:: found NUMBER <4> **The digit rule is triggered because 123 is longer, if they would have the same length, then the rule that appears less**

SCANNER:: found Reserved Word BEGIN

SCANNER:: found punctuation symbol SEMICOLON

SCANNER:: found Reserved Word END

\_\_\_

Remove digit rule

import java.io.InputStreamReader;

import java.lang.System;

%%

%char

%public

%standalone

%full

DIGIT=([0-9])

INTEGER=({DIGIT}+)

%%

; {System.out.println("SCANNER:: found punctuation symbol SEMICOLON");}

"+" {System.out.println("SCANNER:: found Operator ADD");}

begin {System.out.println("SCANNER:: found Reserved Word BEGIN");}

end {System.out.println("SCANNER:: found Reserved Word END");}

{INTEGER} {System.out.println("SCANNER:: found NUMBER <"+ yytext() +">");}

(" "|\t|\n)+ {}

. {System.out.println("SCANNER:: Unmatched input <"+ yytext() +">");}

\_\_

Edit test with -

-

123 4

begin

;

end

\_\_\_

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>generateScanner.bat

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -jar jflex-full-1.7.0.jar MiniLan.lex

Reading "MiniLan.lex"

Constructing NFA : 42 states in NFA

Converting NFA to DFA :

....................

22 states before minimization, 15 states in minimized DFA

Old file "Yylex.java" saved as "Yylex.java~"

Writing code to "Yylex.java"

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>javac Yylex.java

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -classpath ; Yylex test

SCANNER:: Unmatched input <-> **No rule for this string, that’s why we have the last rule, the point**

SCANNER:: found NUMBER <123>

SCANNER:: found NUMBER <4>

SCANNER:: found Reserved Word BEGIN

SCANNER:: found punctuation symbol SEMICOLON

SCANNER:: found Reserved Word END

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Edit MinLan:

import java.io.InputStreamReader;

import java.lang.System;

%%

%char

%public

%standalone

%full

DIGIT=([0-9])

INTEGER=({DIGIT}+)

%%

; {System.out.println("SCANNER:: found punctuation symbol SEMICOLON");}

"+" {System.out.println("SCANNER:: found Operator ADD");}

begin {System.out.println("SCANNER:: found Reserved Word BEGIN");}

end {System.out.println("SCANNER:: found Reserved Word END");}

{INTEGER} {System.out.println("SCANNER:: found NUMBER <"+ yytext() +">");}

(" "|\t|\n)+ {}

. {System.out.println("SCANNER:: Unmatched input <"+ yytext() +">");}

"-" {System.out.println("SCANNER:: found Operator MINUS");}

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C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>generateScanner.bat

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -jar jflex-full-1.7.0.jar MiniLan.lex

Reading "MiniLan.lex"

Constructing NFA : 44 states in NFA

Converting NFA to DFA :

.....................

Warning in file "MiniLan.lex" (line 23):

Rule can never be matched:

"-" {System.out.println("SCANNER:: found Operator MINUS");}

23 states before minimization, 15 states in minimized DFA

Old file "Yylex.java" saved as "Yylex.java~"

Writing code to "Yylex.java"

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>javac Yylex.java

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -classpath ; Yylex test

SCANNER:: Unmatched input <->

SCANNER:: found NUMBER <123>

SCANNER:: found NUMBER <4>

SCANNER:: found Reserved Word BEGIN

SCANNER:: found punctuation symbol SEMICOLON

SCANNER:: found Reserved Word END

\_\_\_

Edit MiniLan

import java.io.InputStreamReader;

import java.lang.System;

%%

%char

%public

%standalone

%full

DIGIT=([0-9])

INTEGER=({DIGIT}+)

%%

; {System.out.println("SCANNER:: found punctuation symbol SEMICOLON");}

"+" {System.out.println("SCANNER:: found Operator ADD");}

"-" {System.out.println("SCANNER:: found Operator MINUS");}

begin {System.out.println("SCANNER:: found Reserved Word BEGIN");}

end {System.out.println("SCANNER:: found Reserved Word END");}

{INTEGER} {System.out.println("SCANNER:: found NUMBER <"+ yytext() +">");}

(" "|\t|\n)+ {}

. {System.out.println("SCANNER:: Unmatched input <"+ yytext() +">");}

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C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>generateScanner.bat

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -jar jflex-full-1.7.0.jar MiniLan.lex

Reading "MiniLan.lex"

Constructing NFA : 44 states in NFA

Converting NFA to DFA :

.....................

23 states before minimization, 16 states in minimized DFA

Old file "Yylex.java" saved as "Yylex.java~"

Writing code to "Yylex.java"

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>javac Yylex.java

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -classpath ; Yylex test

SCANNER:: found Operator MINUS

SCANNER:: found NUMBER <123>

SCANNER:: found NUMBER <4>

SCANNER:: found Reserved Word BEGIN

SCANNER:: found punctuation symbol SEMICOLON

SCANNER:: found Reserved Word END

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Edit MiiLan

import java.io.InputStreamReader;

import java.lang.System;

%%

%char

%public

%standalone

%full

DIGIT=([0-9])

INTEGER=({DIGIT}+)

%%

; {System.out.println("SCANNER:: found punctuation symbol SEMICOLON");}

"+" {System.out.println("SCANNER:: found Operator ADD");}

"-" {System.out.println("SCANNER:: found Operator MINUS");}

"\*" {System.out.println("SCANNER:: found Operator MULT");}

"/" {System.out.println("SCANNER:: found Operator DIV");}

"(" {System.out.println("SCANNER:: found symbol LP");}

")" {System.out.println("SCANNER:: found symbol RP");}

begin {System.out.println("SCANNER:: found Reserved Word BEGIN");}

end {System.out.println("SCANNER:: found Reserved Word END");}

print {System.out.println("SCANNER:: found Reserved Word PRINT");}

{INTEGER} {System.out.println("SCANNER:: found NUMBER <"+ yytext() +">");}

(" "|\t|\n)+ {}

. {System.out.println("SCANNER:: Unmatched input <"+ yytext() +">");}

\_\_\_

Edit test

print() \* /

-

123 4

begin

;

end

\_\_

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>generateScanner.bat

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -jar jflex-full-1.7.0.jar MiniLan.lex

Reading "MiniLan.lex"

Constructing NFA : 62 states in NFA

Converting NFA to DFA :

..............................

32 states before minimization, 25 states in minimized DFA

Old file "Yylex.java" saved as "Yylex.java~"

Writing code to "Yylex.java"

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>javac Yylex.java

C:\Users\UO294067\Downloads\AMD Paula\ScannerMiniLan>java -classpath ; Yylex test

SCANNER:: found Reserved Word PRINT

SCANNER:: found symbol LP

SCANNER:: found symbol RP

SCANNER:: found Operator MULT

SCANNER:: found Operator DIV

SCANNER:: found Operator MINUS

SCANNER:: found NUMBER <123>

SCANNER:: found NUMBER <4>

SCANNER:: found Reserved Word BEGIN

SCANNER:: found punctuation symbol SEMICOLON

SCANNER:: found Reserved Word END