

JFLex

STUDENTS

Mohammed Qatamish SN:14 Sec:32660

MOHAMMED AL-RUBAYAN SN:2 Sec:32660

Code

```
import java.util.*;

%%

%class assignment
%standalone
%line
%column

// Macro definitions
%{
    List<String> numbers = new ArrayList<>();
}%

// Regular expressions
KeyWords = def|if|then|else|repeat|until
PunctuationElements =[(),;,]
Operators = [=|+|-|*|/>|<|!]{1,2}
Identifiers =[a-zA-Z][a-zA-Z0-9_]*
Literals=[0-9]*

%%

// Lexer rules
{KeyWords} { System.out.print("<Keyword, \""+yytext()+"\"> "); }
{PunctuationElements} { System.out.print("<Punctuation elements, \""+yytext()+"\"> "); }
{Operators} { System.out.print("<Operators, \""+yytext()+"\"> "); }
{Identifiers} { System.out.print("<Identifiers, \""+yytext()+"\"> "); }
{Literals} { System.out.print("<Literals, \""+yytext()+"\"> "); }
\n { }
. { }
```

Screenshots of Code and Output

```
homework22.jflex x input2.txt
homework22.jflex
1  import java.util.*;
2
3  %%
4
5  %class assignment
6  %standalone
7  %line
8  %column
9
10 // Macro definitions
11 %{
12
13 %}
14
15 // Regular expressions
16 KeyWords = def|if|then|else|repeat|until
17 PunctuationElements = [(:,:;]
18 Operators = [=\\+\\-\\*/<!]{1,2}
19 Identifiers = [a-zA-Z][a-zA-Z0-9_]*
20 Literals=[0-9]*
21
22 %%
23
24 // Lexer rules
25 {KeyWords} { System.out.print("<Keyword, \""+yytext()+"\"> "); }
26 {PunctuationElements} { System.out.print("<Punctuation elements, \""+yytext()+"\"> "); }
27 {Operators} { System.out.print("<Operators, \""+yytext()+"\"> "); }
28 {Identifiers} { System.out.print("<Identifiers, \""+yytext()+"\"> "); }
29 {Literals} { System.out.print("<Literals, \""+yytext()+"\"> "); }
30 \\n { }
31 . { }
32
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Constructing NFA : 82 states in NFA
elements, ")") <Operators, "+"> <Identifiers, "fib"> <Punctuation elements, "("> <Identif
s, "2"> <Punctuation e elements, ")") <Operators, "+"> <Identifiers, "fib"> <Punctuation e
erators, "-"> <L elements, ")") <Operators, "+"> <Identifiers, "fib"> <Punctuation element
ments, ")") <Operators, "+"> <Identifiers, "fib"> <Punctuation elements, "("> <Identifiers
, ")") <Operators, "+"> <Identifiers, "fib"> <Punctuation elements, "("> <Identifiers, "x"
<Punctuation elements, ")") <elements, ")") <Operators, "+"> <Identifiers, "fib"> <Punctuati
<Operators, "-"> <Literals, "2"> <Punctuation el elements, ")") <Operators, "+"> <Identif
") <Identifiers, "x"> <Operators, "-"> <Literals, "2"> <Punctuation elements elements, "
elements, ")") <Operators, "+"> <Identifiers, "fib"> <Punctuation elements, "("> <Identif
s, "2"> <Punctuation elements, ")")
s, "="> <Keyword, "if"> <Identifiers, "x"> <Operators, "="> <Literals, "1"> <Keyword, "the
> <Keyword, "if"> <Identifiers, "x"> <Operators, "="> <Literals, "2"> <Keyword, "then"> <L
ntifiers, "fib"> <Punctuation elements, "("> <Identifiers, "x"> <Operators, "-"> <Literals
Operators, "+"> <Identifiers, "fib"> <Punctuation elements, "("> <Identifiers, "x"> <Opera
ion elements, ")")

fully Screenshots of the output

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS D:\Jflex> jflex homework22.jflex
Reading "homework22.jflex"

Warning in file "homework22.jflex" (line 29):
Expression matches the empty string, which may lead to non-termination.
{Literals} { System.out.print("<Literals, \""+yytext()+"\""); }
Constructing NFA : 82 states in NFA
Converting NFA to DFA :
.....
36 states before minimization, 26 states in minimized DFA
Old file "assignment.java" saved as "assignment.java~"
Writing code to "assignment.java"
PS D:\Jflex> javac assignment.java
PS D:\Jflex> java assignment input2.txt
<Keyword, "def"> <Identifiers, "fib"> <Punctuation elements, "("> <Identifiers, "x"> <Punctuation elements, ">"> <Operators, "="> <Keyword, "if"> <Identifiers,
x"> <Operators, "="> <Literals, "1"> <Keyword, "then"> <Literals, "0"> <Keyword, "else"> <Keyword, "if"> <Identifiers, "x"> <Operators, "="> <Literals, "2"> <Ke
word, "then"> <Literals, "1"> <Keyword, "else"> <Identifiers, "fib"> <Punctuation elements, "("> <Identifiers, "x"> <Operators, "-"> <Literals, "1"> <Punctuatio
elements, ">"> <Operators, "+"> <Identifiers, "fib"> <Punctuation elements, "("> <Identifiers, "x"> <Operators, "-"> <Literals, "2"> <Punctuation elements, ">"
>
PS D:\Jflex> |
```