CS 132 Compiler Construction
Instructor: Jens Palsberg

Homework 1: Parsing

Write in Java a recursive descent parser for the grammar below. The grammar is LL(1). Your main file should be called `Parse.java`, and if `P` contains a program to be parsed, then:

```
java Parse < P
```

should print either

```
Program parsed successfully
```

or

```
Parse error
```

depending on whether the input program parses correctly.

Consider the grammar

$$
\begin{array}{lcl}
S & ::= & \texttt{\{}\ L\ \texttt{\}} \\
 & | & \texttt{System.out.println (}\ E\ \texttt{) ;} \\
 & | & \texttt{if (}\ E\ \texttt{)}\ S\ \texttt{else}\ S \\
 & | & \texttt{while (}\ E\ \texttt{)}\ S \\
L & ::= & S\ L\ \mid\ \epsilon \\
E & ::= & \texttt{true}\ \mid\ \texttt{false}\ \mid\ \texttt{!}\ E
\end{array}
$$

where $\{S, L, E\}$ is the set of nonterminal symbols, S is the start symbol, { `{`, `}`, `System.out.println`, `(`, `)`, `;`, `if`, `else`, `while`, `true`, `false`, `!` } is the set of terminal symbols, and ϵ denotes the empty string.