

**procedure** LLTabularParsing( *ts*, *LLT*, *P* )  
*ts* is a token stream with peek and pop operations, *LLT* is an LL(1) parsing table as described by the text.  
returns a parse tree of the sentence in *ts*,  
or FAILS when *ts* does not emit a sentence belonging to the grammar deriving *LLT*.

Recall notationally: *S* is the starting symbol (goal) of the grammar,  
 $\Sigma_{\$} = \Sigma + \{\$\}$  are the terminals of the language augmented by \$,  
*N* are the non-terminals and *P* is the production rule list of the grammar (indexed by entries of *LLT*).

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let T be a tree with an initial root node Root
let Current be a reference to a node of T
let K be a stack
Current  $\leftarrow$  Root
push S onto K
while ( |K| > 0 ) do (
  x  $\leftarrow$  K.pop()
  if ( x  $\in$  N ) then (
    # Next token may not predict a p  $\in$  P
    p  $\leftarrow$  P[LLT[x][ts.peek()]] or FAIL
    push MARKER onto K
    R  $\leftarrow$  RHS of p
    in reverse order, push the elements of R onto K
    let n  $\leftarrow$  new tree node for non-terminal x
    append n as the rightmost child of Current
    Current  $\leftarrow$  rightmost child of Current
  ) else if ( x  $\in$   $\Sigma_{\$}$  OR x is  $\lambda$  ) then (
    if ( x  $\in$   $\Sigma_{\$}$  ) then (
      # Next token must be what is expected
      if ( x  $\neq$  ts.peek() ) then FAIL
      # Update x with the token type and source value from ts
      x  $\leftarrow$  ts.pop()
    )
    append x as the rightmost child of Current
  ) else if ( x is a MARKER ) then (
    Current  $\leftarrow$  Current.parent
  )
)
)

# Current now points to Root which has a singular child S
return Root's only child

```