

## The function $test(y, A, \alpha)$

---

```
 $test(y, A, \alpha)$  {  
  if ( $y \in \text{FIRST}(\alpha)$ ) or ( $\epsilon \in \text{FIRST}(\alpha)$  and  $y \in \text{FOLLOW}(A)$ ) { return true }  
  else { return false } }
```

$test(y, A, \alpha)$  takes a token (grammar terminal)  $y$ , a nonterminal  $A$  and a string,  $\alpha$ , of terminals and nonterminals. For a BNF grammar, it is always the case that  $\alpha$  is an alternate in the grammar rule for  $A$  and  $y$  will be  $I[c_I]$ , the current input symbol.

At a point in a GLL traversal of the grammar where the next symbol is  $A$ , a traversal fork moves to the start of the alternate  $\alpha$  only if a string beginning with the current input symbol can be derived from  $\alpha$ , or if  $\alpha$  derives  $\epsilon$  and the current input symbol can follow  $A$  in some sentential form.