Quiz over the parsing chapters

Your name:

Is the grammar

S $\longrightarrow$ a | (T)
T $\longrightarrow$ T, S | S

$LL(1)$ parsable? If yes, why; if no, what can you do about this?

A FSA recognizes right-recursive languages, that is, languages with grammar rules of the form (uppercase: nonterminal, lowercase: terminal)

A $\longrightarrow$ bC
D $\longrightarrow$ e

Equivalently, it recognizes left-recursive languages, generated by grammar rules of the form

A $\longrightarrow$ Bc
D $\longrightarrow$ e

What happens if you mix right-recursive and left-recursive rules in one grammar?

Consider the hash function

```
h = <some value>
for (i=0; i<len(var); i++)
  h = Rand( h XOR <byte i of string> );
```

and assume that the random function is a permutation of the values 0–255. Show that two words that differ by one letter map to different hash keys. How about two words where the second is the first with an additional letter (for example `key` and `key0`)?