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Where [e] is equivalent to the empty set, or epsilon.

LL(1) Grammar =====

```
1. <expr> ::= <a> <t>
2. <t>     ::= <expr>
3.         | [e]
4. <a>     ::= <b> <u>
5. <u>     ::= <binop> <a>
6.         | [e]
7. <b>     ::= <incrop> <b>
8.         | <c>
9. <c>     ::= <d> <v>
10 <v>     ::= <incrop> <v>
11         | [e]
12 <d>     ::= $<b>
13         | <e>
14 <e>     ::= (<expr>)
15         | <num>
<incrop> ::= ++ | --
<binop>  ::= + | -
<num>    ::= 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9
```

NULLABLE =====

```
Nullable(expr) = False
Nullable(t)    = True
Nullable(a)    = False
Nullable(u)    = True
Nullable(b)    = False
Nullable(c)    = False
Nullable(v)    = True
Nullable(d)    = False
Nullable(e)    = False
Nullable(incrop) = False
Nullable(binop) = False
Nullable(num)  = False
```

FIRST =====

```
FIRST(expr) = {incrop, F, (, num}
FIRST(t)    = {incrop, F, (, num, [e]}
FIRST(a)    = {incrop, F, (, num}
FIRST(u)    = {binop, [e]}
FIRST(b)    = {incrop, F, (, num}
FIRST(c)    = {F, (, num}
FIRST(v)    = {incrop}
FIRST(d)    = {F, (, num}
FIRST(e)    = {(, num}
FIRST(incrop) = {incrop}
FIRST(binop) = {binop}
FIRST(num)   = {num}
```

FOLLOW =====

```
FOLLOW(expr) = {), $}
FOLLOW(t)    = {), $}
FOLLOW(a)    = {num, ), $}
FOLLOW(u)    = {num, ), $}
FOLLOW(b)    = {incrop, binop, num, ), $}
```

```

FOLLOW(c)      = {incrop, binop, num, ), $}
FOLLOW(v)      = {incrop, binop, num, ), $}
FOLLOW(d)      = {incrop, binop, num, ), $}
FOLLOW(e)      = {incrop, binop, num, ), $}
FOLLOW(incrop) = {incrop, F, (, num, ), $}
FOLLOW(binop)  = {incrop, F, (, num}
FOLLOW(num)    = {incrop, binop, num, ), $}

```

TABLE =====

	Input Symbols						
	()	num	incrop	binop	F	\$
expr	r1		r1	r1		r1	
t	r2	r3	r2	r2		r2	r3
a	r4		r4	r4		r4	
u		r6	r6		r5		r6
b	r8		r8	r7		r8	
c	r9		r9			r9	
v		r11	r11	r10	r11		r11
d	r13		r13			r12	
e	r14		r14				

=====

Is our grammar a LL(1) grammar?

– Yes. For each set of productions for each symbol, their FIRST() definitions are pairwise disjoint. Also, for each symbol, A, having a nullable RHS as a production, each other non-nullable FIRST(RHS) /\ FOLLOW(A) is disjoint. These fulfill the rules of LL(1) grammars. Furthermore, there is no left-recursion or ambiguity.