

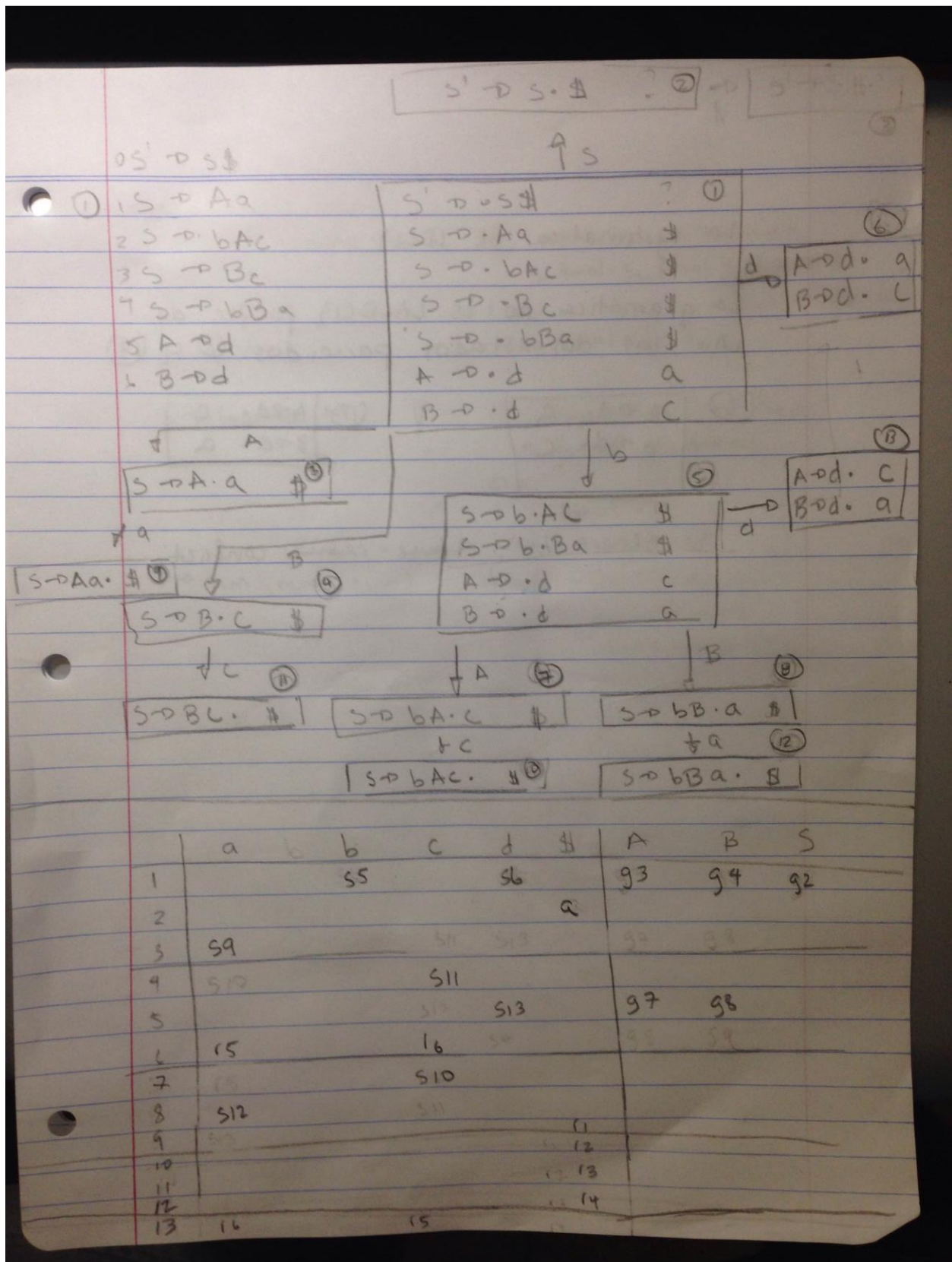


# COMPILADORES I

Tarea No. 4

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### Ejercicio 1



∴ la gramática es LR(1)

∴ La gramática no es LALR(1) porque al unir los dos estados parecidos: (6) y (13)

(6) 

A → d. a
b → d. c

y

(13) 

A → d. c
B → d. a

Se genera un reduce-reduce conflict.



Ejercicio 2

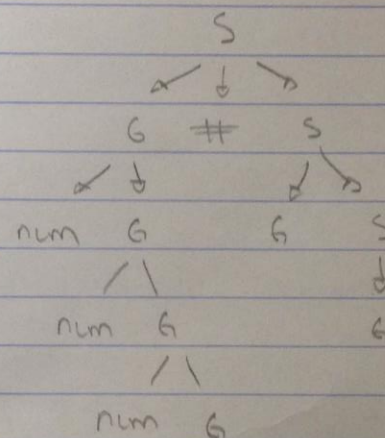
②  $S \rightarrow S_1 \text{ cuenta } N$       if  $\text{cuenta.valex} = "x"$  then  
    $S.\text{total} = S_1.\text{total} + N.\text{total}$   
   else  
    $S.\text{total} = S_1.\text{total}$

$S \rightarrow \text{cuenta } N$       if  $\text{cuenta.valex} = "x"$  then  
                                  $S.\text{total} = N.\text{total}$   
                                 else  
                                  $S.\text{total} = 0$

$N \rightarrow \text{num1, num2, num3}$        $N.\text{total} = (\text{num1.valex} +$   
    $\text{num2.valex} +$   
    $\text{num3.valex}) / 3$

Ejercicio 3(3)  $S \rightarrow G \# S$  $S \rightarrow G$  $G \rightarrow \text{num}, G$  $G \rightarrow \text{num}$ 

4, 5, 6 # 5, 7, 10 # 10, 5, 6

 $S \rightarrow G \# S_1$  $S \rightarrow G$  $G \rightarrow \text{num}, G_1$  $S.\text{total} = G.\text{ordenado} + S_1.\text{total}$  $S.\text{total} = G.\text{ordenado}$ if (num.valex  $\geq$  G1.numero and G1.ordenado = 1) $G.\text{ordenado} = 1$ 

else

 $G.\text{ordenado} = 0$  $G \rightarrow \text{num}$  $G.\text{numero} = \text{num.valex};$  $G.\text{ordenado} = 1$



Ejercicio 4

$S \rightarrow NS'$   
 $S' \rightarrow -NS'$   
 $S' \rightarrow +NS'$   
 $S' \rightarrow \epsilon$   
 $N \rightarrow (L+R)$   
 $N \rightarrow (L-R)$   
 $C \rightarrow \text{num} "i"$   
 $R \rightarrow \text{num}$

	Vacio	PRIMEROS	SEGUNDOS
S		(	\$
S'	✓	+ -	\$
N		(	+ - \$
C		num	+ -
R		num	)

Tabla Sintáctica

	(	)	+	-	num	"i"	\$
S	$S \rightarrow NS'$						
S'			$S' \rightarrow +NS'$	$S' \rightarrow -NS'$			$S' \rightarrow \epsilon$
N	$N \rightarrow (L+R)$ $N \rightarrow (L-R)$						
C					$C \rightarrow \text{num} "i"$		
R					$R \rightarrow \text{num}$		

```
Final int p, a, q, parder, mas, menos, num=1,2,3,4,5;  
Token tok = getToken();  
void advance() { tok = getToken(); }  
void eat(int i) {  
    if (tok == t) {  
        advance();  
    }  
    else {  
        error();  
    }  
}
```

```
int s() {  
    if (tok == "(") {  
        return SP(NC);  
    } else {  
        error();  
    }  
}
```

```
int SP(int h) {  
    switch (tok) {  
        case mas: eat(mas); return SP(h+NC);  
        case menos: eat(menos); return SP(h-NC);  
        case parder;  
        case dolar: return h;  
        Default: error();  
    }  
}
```

```
int N() {  
    if (tok == parizq) {  
        int x = 0;  
        switch (tok) {  
            case '+': return x + 20;  
            case '-': return x - 20;  
            default: error();  
        }  
    }  
}
```

```
int L() {  
    eat(num);  
    eat(i);  
    return num.val;  
}
```

```
int R() {  
    eat(num);  
    return num.val;  
}
```