

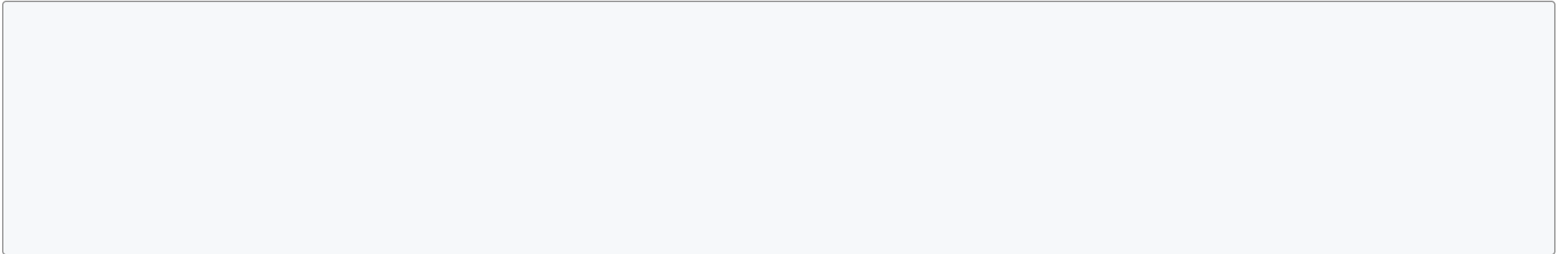
Parser conflicts + JSON parser

Lab assignment

In this lab we will observe RR and SR conflicts + write a JSON parser

JSON

Notice the recursive structure!

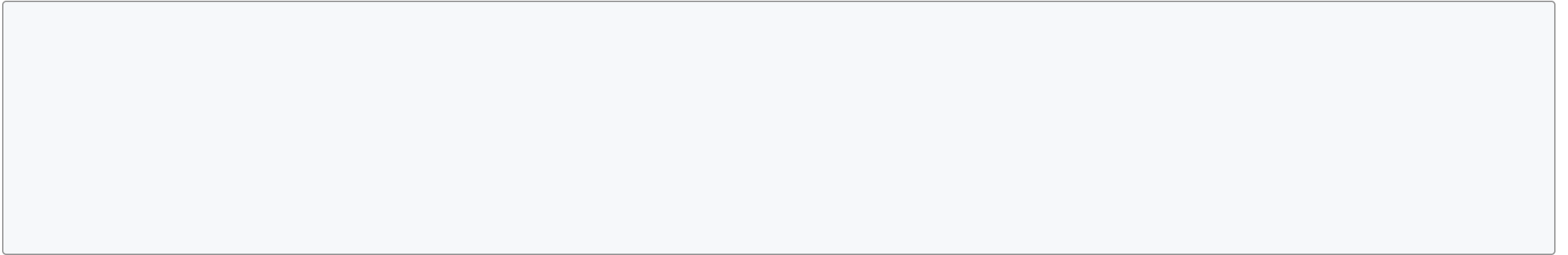


LR(1) parser

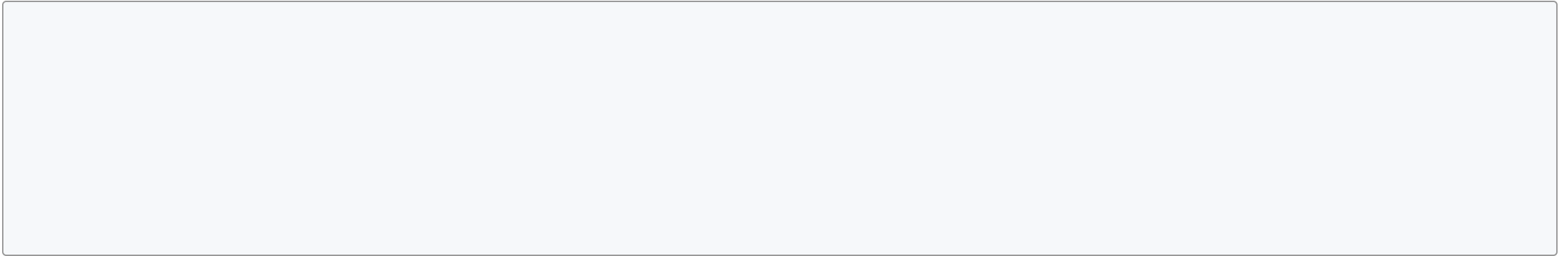
"1" is referring to 1 lookahead symbol. It is a data being passed along while transitioning the parser states.

- Basically we can reduce if the lookahead symbol is the symbol we intended it to be.
- lookahead symbol b in production $A \rightarrow \cdot Bc$, b should be $\in \text{FOLLOW}(A)$

SR non-terminals



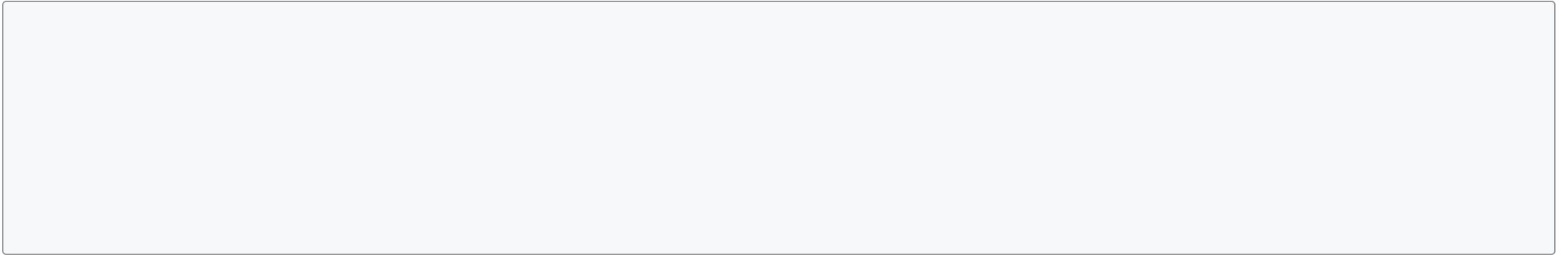
SR LR(1) productions



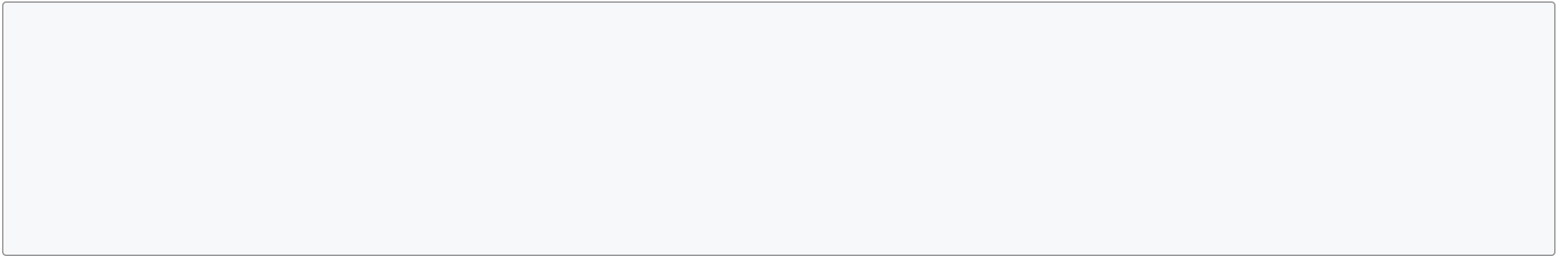
SR LR(1) parse table

states	\$end	()	,	IDENTIFIER	header	id	ids	param	params	type
0					s3	<u>1</u>					<u>2</u>
1	a										
2					s5		<u>4</u>				
3					r8						
4		s6									
5		r9									
6			s8		s3				<u>9</u>	<u>7</u>	<u>10</u>
7			s11	s12							
8	r2										
9			r3	r3							
10					s15		<u>14</u>	<u>13</u>			
11	r1										
12					s3				<u>16</u>		<u>10</u>
13			r5	s17, r5 - Shift , then <u>Go to state 17</u> - Reduce by 5) param -> type ids							
14			r6	r6							
15			r9	r9							
16			r4	r4							
17					s15		<u>18</u>				
18			r7	r7							

RR LR(1) productions



RR LR1(1) non-terminals



RR LR(1) parse table

states	\$end	()	-	IDENTIFIER	exp	sub_exp	type
0		s3		s4	s5	<u>1</u>	<u>2</u>	
1	a			s6				
2	r2			r2				
3		s11		s12	s9	<u>8</u>	<u>10</u>	<u>7</u>
4		s3		s4	s5		<u>13</u>	
5	r5			r5				
6		s3		s4	s5		<u>14</u>	
7		s15						
8		s16		s17				
9		r7, r5 - Reduce by 7) type -> IDENTIFIER - Reduce by 5) sub_exp -> IDENTIFIER		r5				
10		r2		r2				
11		s11		s12	s9	<u>19</u>	<u>10</u>	<u>18</u>
12		s11		s12	s21		<u>20</u>	
13	r4			r4				
14	r1			r1				
15		s3		s4	s5		<u>22</u>	
16	r6			r6				
17		s11		s12	s21		<u>23</u>	
18		s24						
19		s25		s17				
20		r4		r4				
21		r5		r5				
22	r3			r3				
23		r1		r1				
24		s11		s12	s21		<u>26</u>	
25		r6		r6				
26		r3		r3				