Contents

Quasi-Simple Grammars

1. <s> → a<A><s>
2. <s> → b
3. <A> → c<A><s>
4. <A> → ε

aacbb

- <s> $\overset{1}{\Rightarrow}$ a<A><s>
- a<A><s> $\overset{4}{\Rightarrow}$ a<s>
- a<s> $\overset{1}{\Rightarrow}$ aa<A><s>
- aa<A><s> $\overset{3}{\Rightarrow}$ aac<A><s><s>
- aac<A><s><s> $\overset{4}{\Rightarrow}$ aac<s><s>
- aac<s><s> $\overset{2}{\Rightarrow}$ aacb<s>
- aacb<s> $\overset{2}{\Rightarrow}$ aacbb

FOLLOW and SELECT Sets

<s>⊣
<s> → a<A>
<A> → c<A>b
<A> → ε

- FOLLOW(<A>) = {b} + FOLLOW(<s>)
  - <A><s> $\overset{1}{\Rightarrow}$ <A>a<A><s>
  - <A><s> $\overset{2}{\Rightarrow}$ <A>b
- FOLLOW(<s>) = {a, ⊣}

In the case <s> → a<A>, the only thing that could follow <A> here is whatever could have followed <s>. I.e. if you have <s> → <s>c, then FOLLOW(<A>) = {c}

1. <s> → a<A><s>
2. <s> → b
3. <A> → c<A><s>
4. <A> → ε

- FOLLOW(<A>) = {a} + {b}

	a	b	c	⊣	
<s>	1	2			
<A>	4	4	3		
▽					ACCEPT

1. REPLACE(<s><A>), ADVANCE
   - or PUSH(<A>), ADVANCE
   - (<s> already on the stack)
2. POP, ADVANCE
3. REPLACE(<s><A>), ADVANCE
4. POP, RETAIN

- Action number 4 happens in the follow set of <A>

Stack	Input
▽<s>	aabcc⊣
▽<s><A>	acbb⊣
▽<s>	acbb⊣
▽<s><A>	cbb⊣
▽<s><s><A>	bb⊣
▽<s><s>	bb⊣
▽<s>	b⊣
▽	⊣

ACCEPT

- Show that it's a left most derivation