

Lab 4

Daniel Gisolfi

Crafting a Compiler

4.9

Compute First and Follow sets for the nonterminals of the following grammar.

$$\begin{aligned} S &\rightarrow aSe \\ &\rightarrow B \\ B &\rightarrow bBe \\ &\rightarrow C \\ C &\rightarrow cCe \\ &\rightarrow d \end{aligned}$$

	First Set	Follow Set
S	{aSe, B}	{B, bBe, C, cCe, d}
B	{C, cCe}	{d}
C	{d}	epsilon

5.10

if expr then if expr then other else other

tree 1

```
1  -[S]
2  --[Stmt]
3  ---[if]
4  ---[expr]
5  ---[then]
6  ---[Stmt]
7  ----[if]
```

```

8  ----[expr]
9  ----[then]
10 ----[other]
11 ---[else]
12 ---[Stmt]
13 ----[other]
14 --[$]

```

tree 2

```

1  -[S]
2  --[Stmt]
3  ---[if]
4  ---[expr]
5  ---[then]
6  ---[Stmt]
7  ----[other]
8  -----[if]
9  -----[expr]
10 -----[then]
11 -----[other]
12 ----[else]
13 ----[Stmt]
14 -----[other]
15 --[$]

```

Dragon

4.4.3

```

1  S -> A
2  A -> (S) S A | ε

```

S	S -> A	S -> A	S -> A
A	A -> (S) S A A -> ε	A -> ε	A -> ε