Predictive Parsing - Predictive Parsing Tables

Grammar:

Z → X Y Z **Y → c** **X → a**
Z → d **Y →** **X → Y**

	nullable	first	follow
Z	no	d,a,c	
Y	yes	c	a,c,d
X	yes	a,c	a,c,d

Build parsing table where row X, col T tells parser which clause to execute in function X with next-token T:

- **if T ∈ First(γ) then enter (X → γ) in row X, col T**
- **if γ is Nullable and T ∈ Follow(X) enter (X → γ) in row X, col T**

	a	c	d
Z			
Y			
X			

Predictive Parsing - Predictive Parsing Tables

Grammar:

$Z \rightarrow X\ Y\ Z$ $\quad Y \rightarrow c \quad X \rightarrow a$

$Z \rightarrow d \quad Y \rightarrow \quad X \rightarrow Y$

	nullable	first	follow
Z	no	d,a,c	
Y	yes	c	a,c,d
X	yes	a,c	a,c,d

Build parsing table where row X, col T tells parser which clause to execute in function X with next-token T:

- **if T ∈ First(γ) then enter ($X \rightarrow \gamma$) in row X, col T**
- **if γ is Nullable and T ∈ Follow(X) enter ($X \rightarrow \gamma$) in row X, col T**

	a	c	d
Z	Z->XYZ	Z->XYZ	Z->XYZ
Y			
X			

First(XYZ)

Predictive Parsing - Predictive Parsing Tables

Grammar:

$Z \rightarrow X\ Y\ Z$ | $Y \rightarrow c$ | $X \rightarrow a$

$Z \rightarrow d$ | $Y \rightarrow$ | $X \rightarrow Y$

	nullable	first	follow
Z	no	d,a,c	
Y	yes	c	a,c,d
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	a	c	d
Z	Z->XYZ	Z->XYZ	Z->XYZ Z->d
Y		Y->c	
X	X->a		

Predictive Parsing - Predictive Parsing Tables

Grammar:

$Z \rightarrow X\ Y\ Z$ $\quad Y \rightarrow c$ $\quad X \rightarrow a$

$Z \rightarrow d$ $\quad Y \rightarrow$ $\quad X \rightarrow Y$

	nullable	first	follow
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	a	c	d
Z	Z->XYZ	Z->XYZ	Z->XYZ Z->d
Y	Y->	Y->c Y->	Y->
X	X->a		

Follow(Y)

Predictive Parsing - Predictive Parsing Tables

Grammar:

$Z \rightarrow X\ Y\ Z$ $\quad Y \rightarrow c$ $\quad X \rightarrow a$

$Z \rightarrow d$ $\quad Y \rightarrow$ $\quad X \rightarrow Y$

	nullable	first	follow
Z	no	d,a,c	
Y	yes	c	a,c,d
X	yes	a,c	a,c,d

Build parsing table where row X, col T tells parser which clause to execute in function X with next-token T:

- **if T ∈ First(γ) then enter ($X \rightarrow \gamma$) in row X, col T**
- **if γ is Nullable and T ∈ Follow(X) enter ($X \rightarrow \gamma$) in row X, col T**

	a	c	d
Z	Z->XYZ	Z->XYZ	Z->XYZ Z->d
Y	Y->	Y->c Y->	Y->
X	X->a X->Y	X->Y	X->Y

Follow(X) ∪ First(Y)