CSA1455

Compiler Design for Lenical Analysis

Regino: 192365023

Klame: Sai Lokesh. N

CLASS TEST - 3

Date: 18-02-2025

Serial No: 27

CHOPTESULD

1. Construct a syntam tree for the Arthimetic Enpression: (a+b) * (c-d)/e.

2. How does an S-attributed definition differ from an L-attributed definition? Construct the grammar for both L and S attribute.

grammar for both L and S attribute.

3. Construct the annoated Parse tree for the

Suntan directed definition below:

LAE

E-T

E -> EI+T

TAF

T -> TI * F

F -> (E)

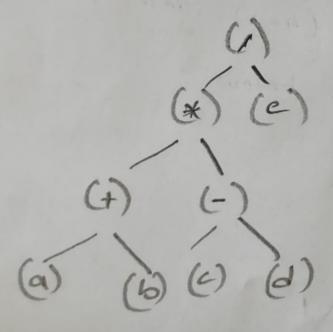
F -> digit

- 1. operator Precedence and Associativity
 - 1. Paranthesis
- 2. Multiplication
- 3. DIVILION

Ensversion: 10+6) + (c-d)/e. Syntan tree Construction

- 1. a+b and c-d form two subtrees.
- 2. These two Results are Multiplied.
- 3. The Multiplication Result is then divided by e.

Syntan tree Representation.



*

S - Attribute:

synthesized attributes. It Uses only

checking, where thereited contributed

EV . P + 1 pv . 13 = 1 pv . 7 3 - P = 13 =

1. Altributed Grammars

value are computed bottom-up in

the Parse tree.

Svitable tor bottom-up parsing

a Postorder traversal. PLAVUINES *

En Prusion (3) used in Evaluating Entry

synthesized values are Where only

Needed.

Elm. P+ Hot. 9 = Ani. 12 3. P+ - 19 L- Attribute:

synthesized and Inherited of Uses

attributu.

to Right, are Comptited left * valuy

inherited attributes. allowing

PINV. 3 top-down parsing. Sui table for

Requires a Pre-order traversal.

like type Puly * Used in semantic attributy Checking, where inherited Children. influence 13 1 12 3 11 WILL

S- attributed Grammar:

E Mari

E 7 E1 + T & E. val = E1. val + T. val 3 BOYL SLYDT ONE EAT & E.val = T.valy 7 3 71 * F & T. val = TI. val * F. val 3 7 -1 F & T. val = F. valy

Face) & F. val = E. val3 Fanum & F. val = num. leuvaly 33 parts 4

L- Attributed Grammar;

. hohost & Elinh = Einh + T. valy E DITE EINT : studiette :

cost way wit & E-val = E.inh3 E' 7 E

71 - * F & T! . inh = T. inh + F. val3 value are completed

71 27. val = 7. inhy bit works promotion 3417

Fa(E) & Fival = Eivaly

Farum & Fival = num. lenvaly Fre-crack fraver

NLOS

WINERS ONLY

10/3

astry buter

Given Grammarin and Comment E 7 E +T E -YE-T TAF Hope forme on Face) Fa digit Parse Tree for (2-3) * (4-2)! wood some (x) 1-0114 2 181 181 18 1 190 19 32 (3) (4) (2) はしのは大きちらいする いすりて With comptued values; 13+134:44 Parts 18 and 18 18 (* 1 val = -2) thought of morbials mort (+ 1 yal = 2) 1 bytiverton ? (- 1 val = -1) MATT VOD CHONELE (2, val=2) (3, val=3) (4, val=2) 1. 5574 51409 is 1000 1 12 ph: 11 ; 2 4491

- 1. 2 -3 = -1
- 2. 4-2 = 2
- 3. (-1) *2 = -2
 - so the final Result = -2

* A syntam-directed Definition (IDD) is

a Content free grammar augmented

with Semantic Rules that define how

attributes are Computed.

Aspilo en

Types of Attribute:

- 1. Synthesized Attributes: Computed.

 trom Children to Pavent.
- 2. Inherited Attributes: Computed
 from Parent to children (or) from
 lett siblings in a Parle tree.