Subhradip Debnath
Sec : A
Roll : 19
CSE Department
Institute of Engineering and Management, Kolkata
Date : Friday, 6 November 2020

Explain Synthesized attributes and Inherited attributes with examples and semantic rules

SYNTHESIZED ATTRIBUTES	INHERITED ATTRIBUTES
An attribute is said to be Synthesized attribute if its parse tree node value is determined by the attribute value at child nodes.	An attribute is said to be Inherited attribute if its parse tree node value is determined by the attribute value at parent and/or siblings node.
A synthesized attribute at node n is defined only in terms of attribute values at the children of n itself.	A Inherited attribute at node n is defined only in terms of attribute values of n's parent, n itself, and n's siblings.
The production must have non-terminal as its head.	The production must have non-terminal as a symbol in its body.
It can be evaluated during a single bottom-up traversal of parse tree.	It can be evaluated during a single top-down and sideways traversal of parse tree.
Synthesized attribute is used by both S-attributed SDT and L-attributed STD.	Inherited attribute is used by only L-attributed SDT.

SYNTHESIZED ATTRIBUTES	INHERITED ATTRIBUTES
Synthesized attributes can be contained by both the terminals or non-terminals.	Inherited attributes can’t be contained by both, It is only contained by non-terminals.