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MTech CSE II sem
ASSW - Assignment 3

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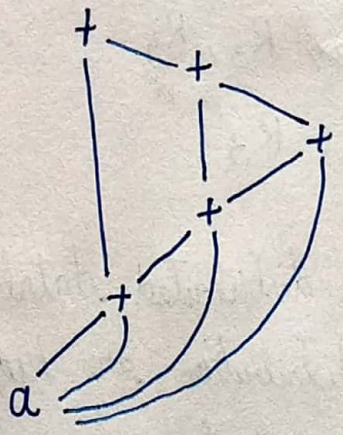
a)

Synthesized Attributes

i) The parse tree node value is determined by the attribute value at child nodes
ii) Production must have a non-terminal at its head
iii) Used by both S-attributed SDT & L-attributed SDT

Inherited Attributes

i) The parse tree node value is determined by the attribute value at parent or siblings node.
ii) Production must have non-terminal as a symbol in its body
iii) Only used by L-attributed SDT



Steps

1) p1 = Leaf (id, entry-a)
2) p2 = Leaf (id, entry-a) = p1
3) p3 = Node (+, p1, p2)
4) p4 = Node (+, p3, p1)
5) p5 = Node (+, p4, p1)
6) p6 = Node (+, p4, p5)
7) p7 = Node (+, p2, p6)

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b) a[i] = b*c - b*c

Quadruples

	op	arg 1	arg 2	result
0	*	b	c	t1
1	-	t1	t1	t2
2	=[]	a	i	t3
3	=	t2		t3

Triplets

	op	arg 1	arg 2
(0)	*	b	c
(1)	-	(0)	(0)
(2)	=[]	a	i
(3)	=	(2)	(1)

Indirect Triples

	op	arg 1	arg 2
(0)	*	b	c
(1)	-	(0)	(0)
(2)	=[]	a	i
(3)	=	(2)	(1)

	instruction
35	(0)
36	(1)
37	(2)
38	(3)

x = b * c

```
LD   R1, b
LD   R2, c
MUL  R1, R1, R2
ST   x, R1
```

y = a + x

```
LD   R3, a
LD   R4, x
ADD  R3, R3, R4
ST   y, R3
```

c) Distribution Transparency is the property of distributed databases by virtue of which the internal details of the distribution are hidden from the users, thus presenting itself to users as if it were one single computer system.

There are multiple types of transparency. Examples for each are as follows

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Examples

i) Access Transparency : A distributed system may have computer systems that run different OSs, each having their own file-naming conventions

2) Location Transparency : Use of logical names to resources.
http://www.prenhall.com/index.html

3) Migration Transparency : resources can be moved without affecting how those resources can be accessed.

4) Relocation Transparency : resources can be relocated while being accessed.
Eg: mobile users continue to use wireless laptops while moving from place to place.

5) Replication Transparency : hide the fact that multiple copies of resource exists

6) Concurrency transparency : 2 independent users may each have stored their files on the same file server or may be accessing same tables in a shared DB

7) Failure transparency : Users don't notice a resource fails to work properly, & that the system recovers from that failure subsequently.

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