1. $g: D \rightarrow TL$, $L.in = T.type$
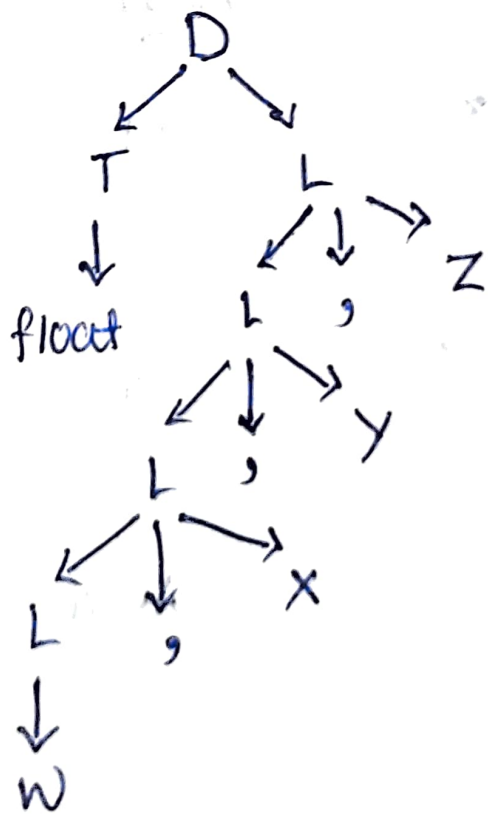
   $T \rightarrow float$, $T.type = float$

   $T \rightarrow int$, $T.type = int$

   $L \rightarrow L_1, id$ $L_1.in = L.in$, $addtype(id.entry, L.in)$

   $L \rightarrow id$ ~~L.in/z/L.in/~~ $addtype(id.entry, L.in)$

   for float x, y, z

2.

i) $A.S = B.i + C.S$

This is L attributed SSD. Attributes of parent node can take values from their children.

ii) $A.S = B.i + C.S$, $D.i = A.i + B.S$

A cannot have inherited attribute. Since, there is nothing present on the LHS of A. So this SSD is neither S attributed nor L attributed.

iii) $A.S = B.S + D.S$

A's synthesized attribute is a function of synthesized attribute of its children. This conjures to S attributed definition. Every S attributed SSD is also L attributed SSD.

iv) $A.S = D.i$, $B.i = A.S + C.S$, $C.i = B.S$, $D.i = B.i + C.i$

In the rule $B.i = A.S + C.S$. Here B's inherited attribute is taking values from its right sibling C. This violates L-attributed definition which says that inherited attributes are limited to take values from its parents or left siblings only. Hence, this SSD is not L-attributed.

③ **Quad**

Location	OP	Arg1	Arg2	Result
(1)	*	3.14	r	T1
(2)	*	T1	r	T2
(3)	=	T2	–	Area

Triple

Location	OP	Arg1	Arg2
(1)	*	3.14	r
(2)	*	(1)	r
(3)	=	Area	(2)

Indirect Triple

			Location	OP	Arg1	Arg2
35	(1)		(1)	*	3.14	r
36	(2)		(2)	*	(1)	r
37	(3)		(3)	=	Area	(2)

```
4)  cnt = 0
    for (i = 0 ; i < 10 ; i++)
                    cnt += i*i ;

    cnt = 0;
    i = 0;


L1 :
            var1 = i < 10;
            if (var1) goto L2;

L3 :    i++;
        goto L1;

L2 :    var2 = i*i;
        cnt = cnt + var2;
        goto L3.
```