

h9

T1

- array(int, array(3, int))
- array(3, pointer(int))
- pointer(array(3, int))
- pointer(array(pointer,int))
- array(3, pointer(pointer(int)))
- array(3, pointer(array(2, pointer(int))))

T2

```
P -> D;E
D -> D;D
D -> id:T {
            addtype(id.entry,T.type);
        }
T -> list of T1 {
            T.type list(T1.type);
        }
T -> char {
            T.type = char;
        }
T -> integer{
            T.type = integer;
        }
E -> (L) {
            E.type = list(L.type);
        }
E -> literal{
            E.type = char;
        }
E -> num {
            E.type = integer;
        }
E -> id {
            E.type = lookup(id.entry);
        }
E -> nil {
        }
L -> E,L1 {
            if (L1.type == E.type)
                L.type = L1.type;
            else
                L.type = type_error;
        }
L -> E {
            L.type = E.type;
        }
```

T3

```
T -> record fields end {
    Record(fields.type); //最终记录下结果
}
fields -> fields1; field {
    fields.type = fields1.type * field.type;
}
fields -> field {
    fields.type = fields.type;
}
field -> id:T {
    field.type = id.val * T.type; //id.val指的是id的属性值
}
E -> E.id {
    if (E1.type == record(s * t))
        E.type = lookup(E1.type, id.val);
    else
        E.type = type_error;
}
```