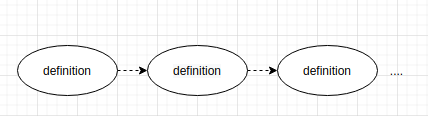
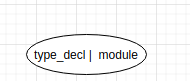
**AST Design 2.0**

specification -> definition { definition }

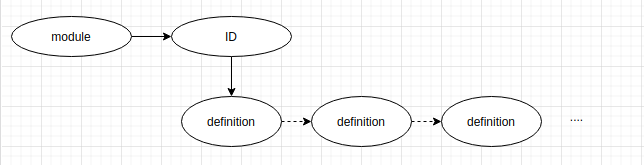


(definition子树至少出现一次)

definiton -> type\_decl“;”| module “;”

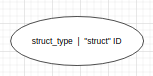


module -> “module”ID “{” definition { definition } “}”



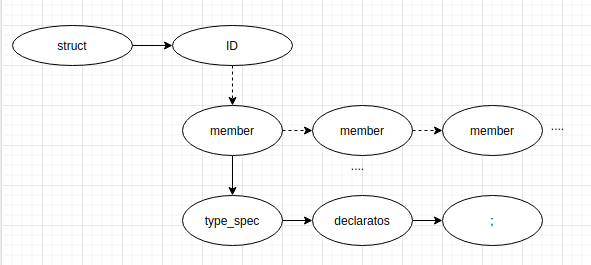
(definition子树至少出现一次)

type\_decl -> struct\_type | “struct” ID



struct\_type->“struct” ID “{” member\_list “}”

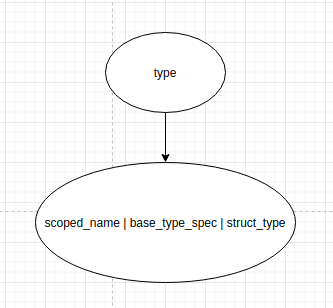
member\_list-> { type\_spec declarators “;” }



(虚线表示可以有0个member子元素.将type declaratos ;子树用member概括.)

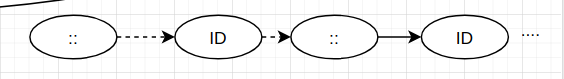
(如果memberlist中没有一个member元素,则在子树位置输出empty,这样可以区别struct m和struct m{}的区别.)

type\_spec -> scoped\_name | base\_type\_spec | struct\_type

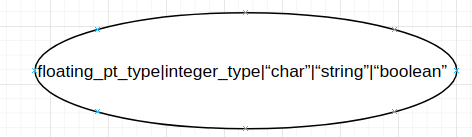


该文法规则需要将父节点的语法规则保留为type关键字.该节点子树将直接为变量类型.

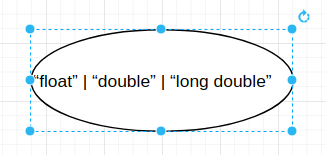
scoped\_name -> [“::”] ID {“::” ID }



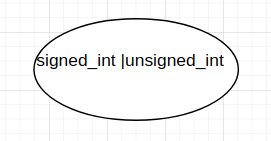
base\_type\_spec->floating\_pt\_type|integer\_type|“char”|“string”| “boolean”



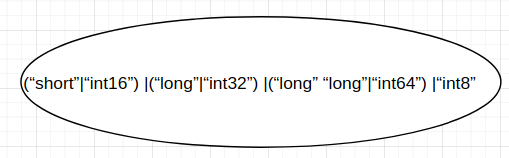
floating\_pt\_type -> “float” | “double” | “long double”



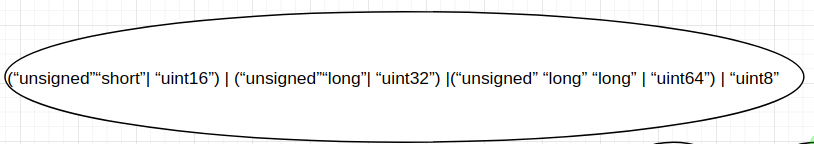
integer\_type -> signed\_int | unsigned\_int



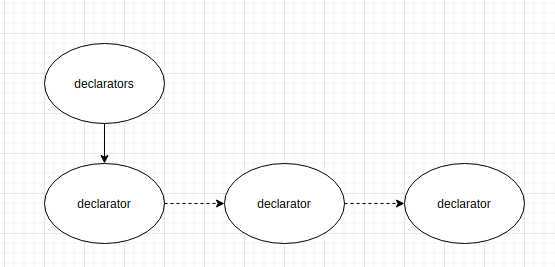
signed\_int->(“short”|“int16”) |(“long”|“int32”) |(“long” “long”|“int64”) |“int8”



unsigned\_int -> (“unsigned”“short”| “uint16”) | (“unsigned”“long”| “uint32”) | (“unsigned” “long” “long” | “uint64”) | “uint8”

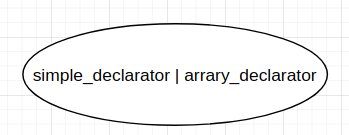


declarators -> declarator {“,” declarator }

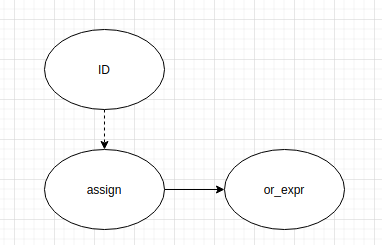


这个文法规则需要保留父节点的关键字declarators.该子树将直接为变量名称.

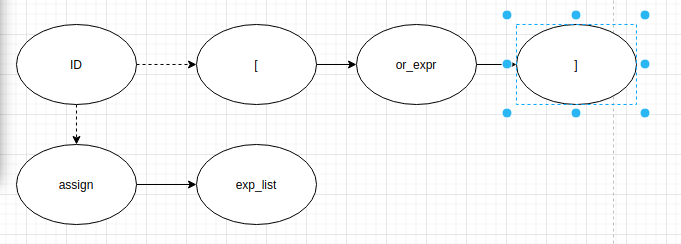
declarator -> simple\_declarator | array\_declarator



simple\_declarator -> ID [“=” or\_expr]

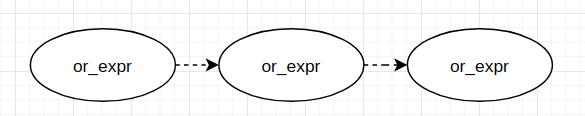


array\_declarator -> ID “[” or\_expr “]” [“=” exp\_list ]

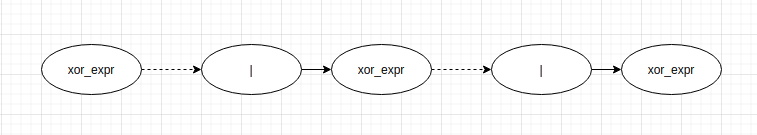


这里的[]代表数组大小,所以没有省略

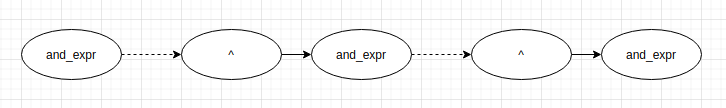
exp\_list -> “[” or\_expr { “,”or\_expr } “]”



or\_expr -> xor\_expr {“|” xor\_expr }



xor\_expr -> and\_expr {“^” and\_expr }



and\_expr -> shift\_expr {“&”shift\_expr }



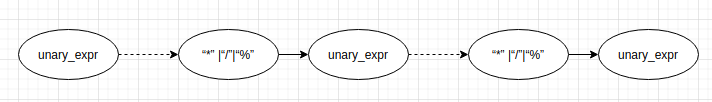
shift\_expr -> add\_expr { (“>>” | “<<”) add\_expr }



add\_expr -> mult\_expr { (“+” | “-”) mult\_expr }



mult\_expr -> unary\_expr { (“\*” |“/”|“%”) unary\_expr }



unary\_expr -> [“-”| “+” | “~”] literal



literal -> INTEGER | FLOATING\_PT | CHAR | STRING | BOOLEAN

