1.

文法定义：

a). 非终结符：T (type) B(Basic), I (index set), N(number)

终结符：int、real、char、bool、void、type-err、array、pointer、record、

→、×、[、]、..、num

产生式：T → B

| array(I, T)

| pointer(T)

| T × T

| T → T

| record(T)

B → integer | real | char | boolean | void | type-err

I → N...N

N → N digit | digit

b) SDD，二进制编码

基本类型编码：integer:01，real:02 char:03, bool:04.

void:05, type-err:06.

构造符编码：array:10, pointer:11, →:12

SDD：T → B {T.code = B.code}

| pointer(T1) {T.code = pack(0x0A, T1.code)}

| array(I, T1) {T.code = pack(0x0B, I.val, T1.code}

| T1 × T2 {T.code = pack(0x0C, T1.code, T2.code}

| $T_1 \to T_2$ { T.code = pack(0x0D, T_1.code, T_2.code }

$I \to N_1 \cdots N_2$ { I.val = binary(N_1.val) || binary(N_2.val) }

$N \to N_1$ digit { N.val = N_1.val × 10 + digit.lexval }

| digit { N.val = digit.lexval }

$B \to$ integer { B.code = binary(0x01)

| char { B.code = binary(0x02)

…… 其它基本类型同理