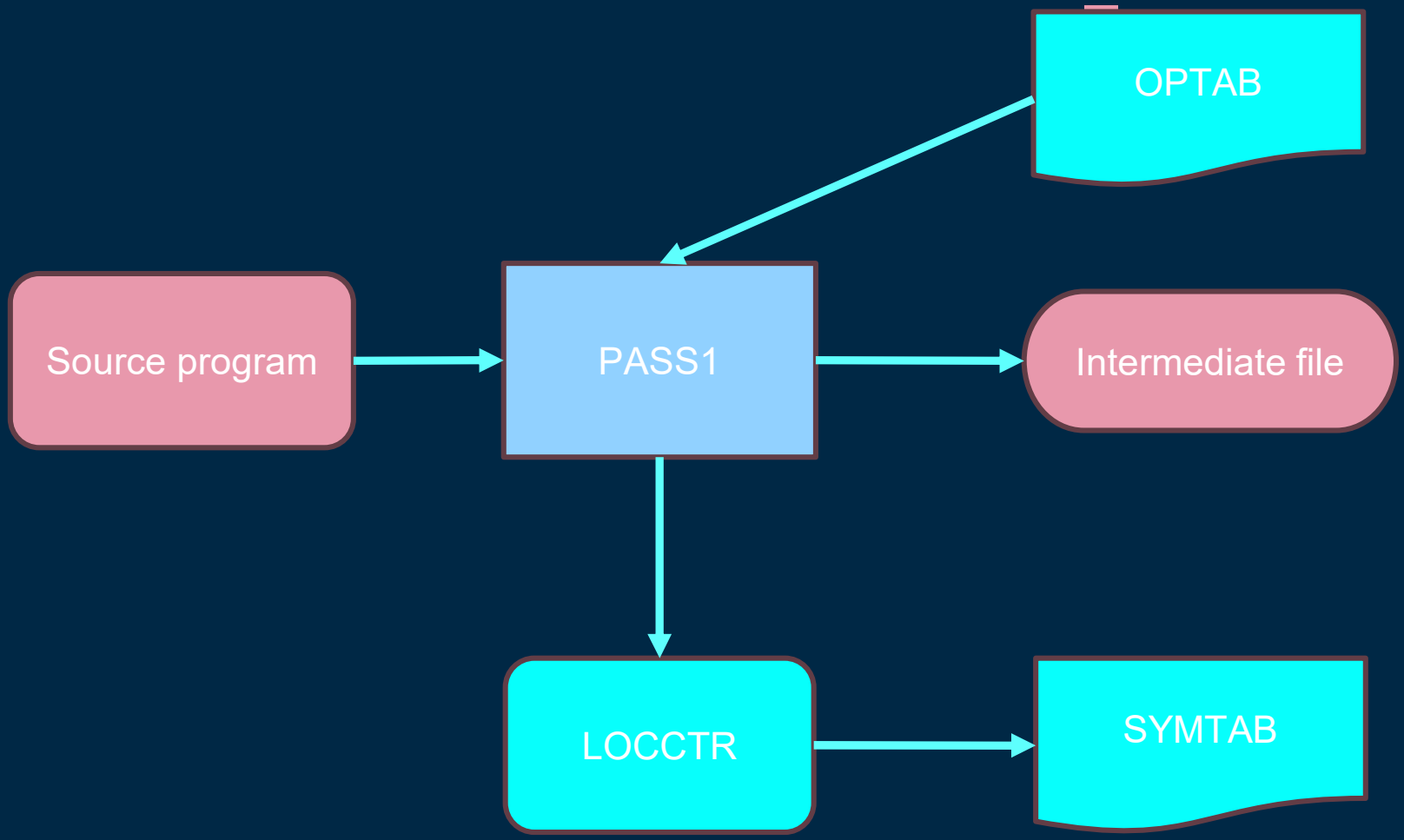
SIC Design

11003058A 林祐陞
11003038A 詹曜愷
11003100A 馮首諭

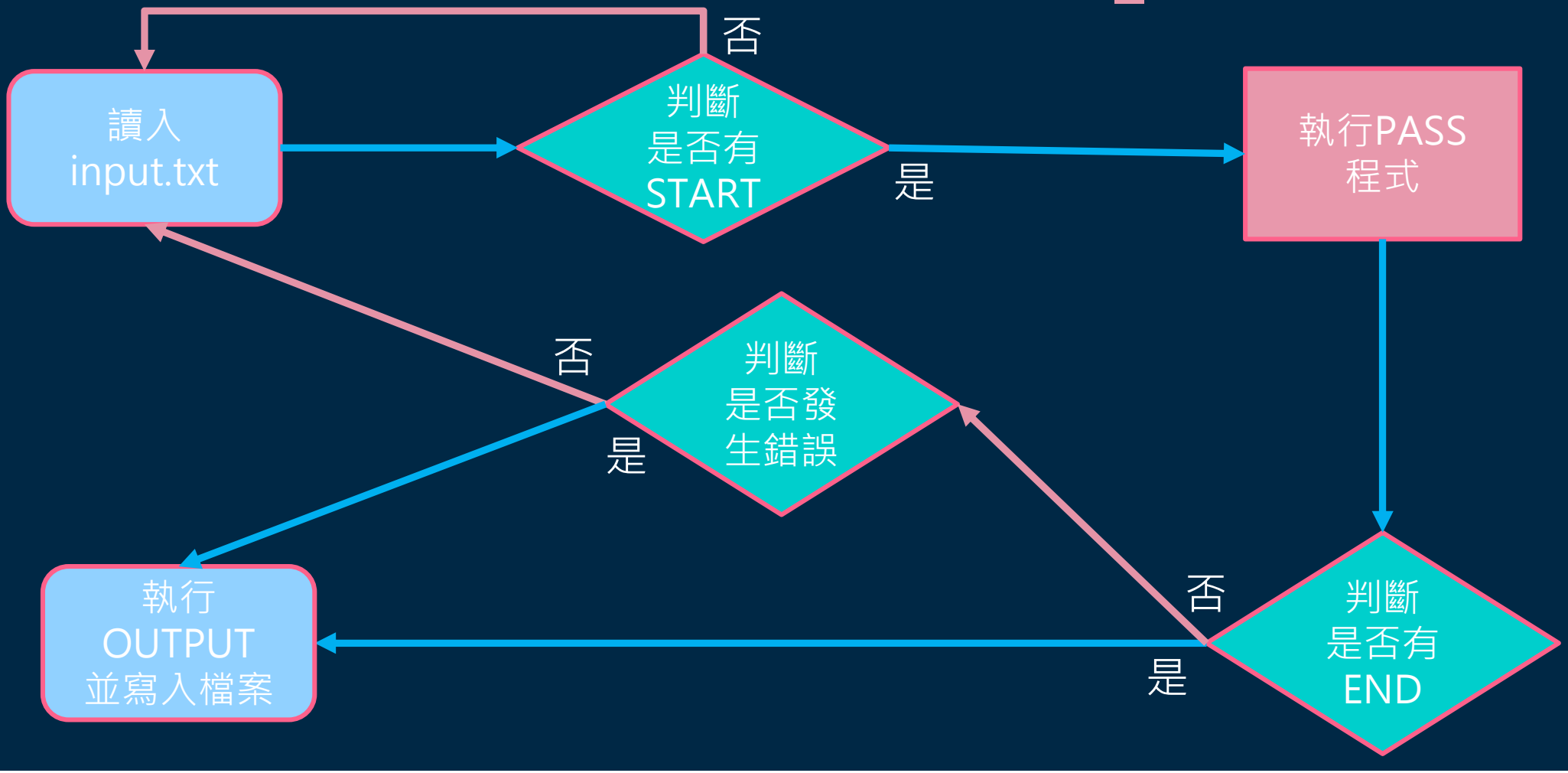
目錄

- SIC
- PASS1
- Hash table
- Binary tree
- Location

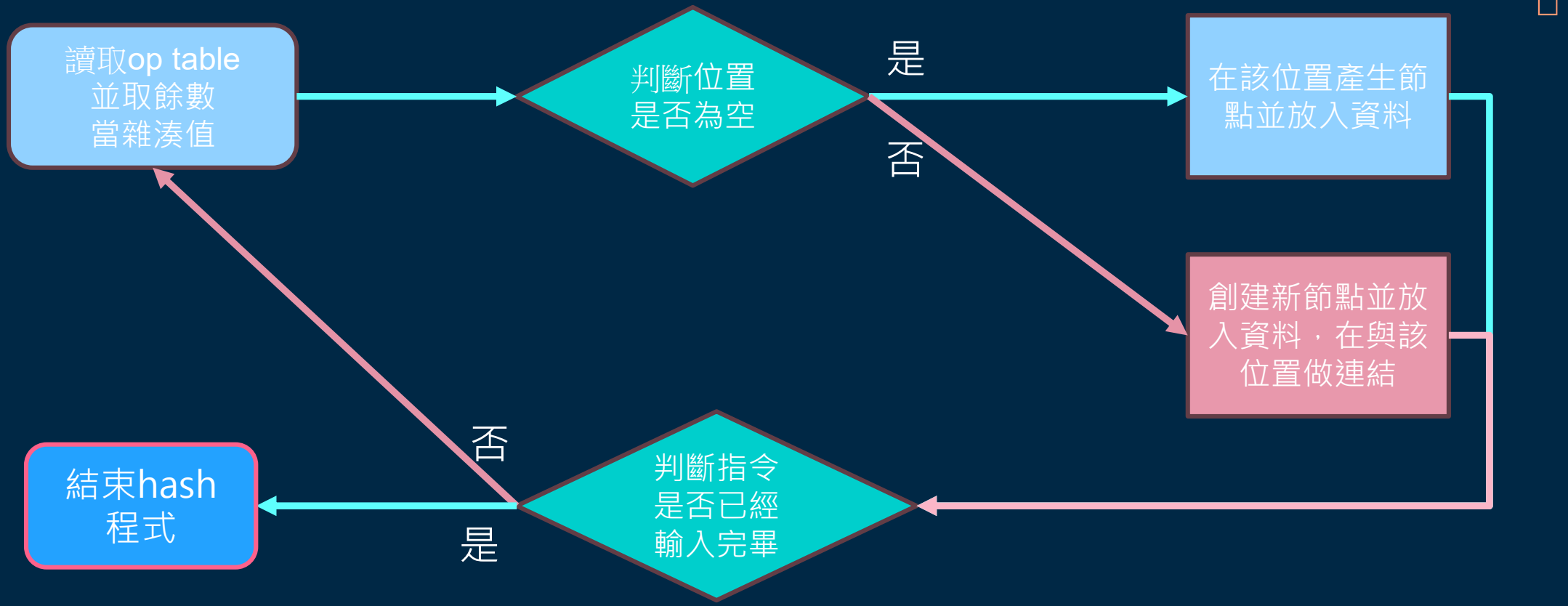
SIC 流程


OPTAB
Source program
PASS1
Intermediate file
LOCCTR
SYMTAB

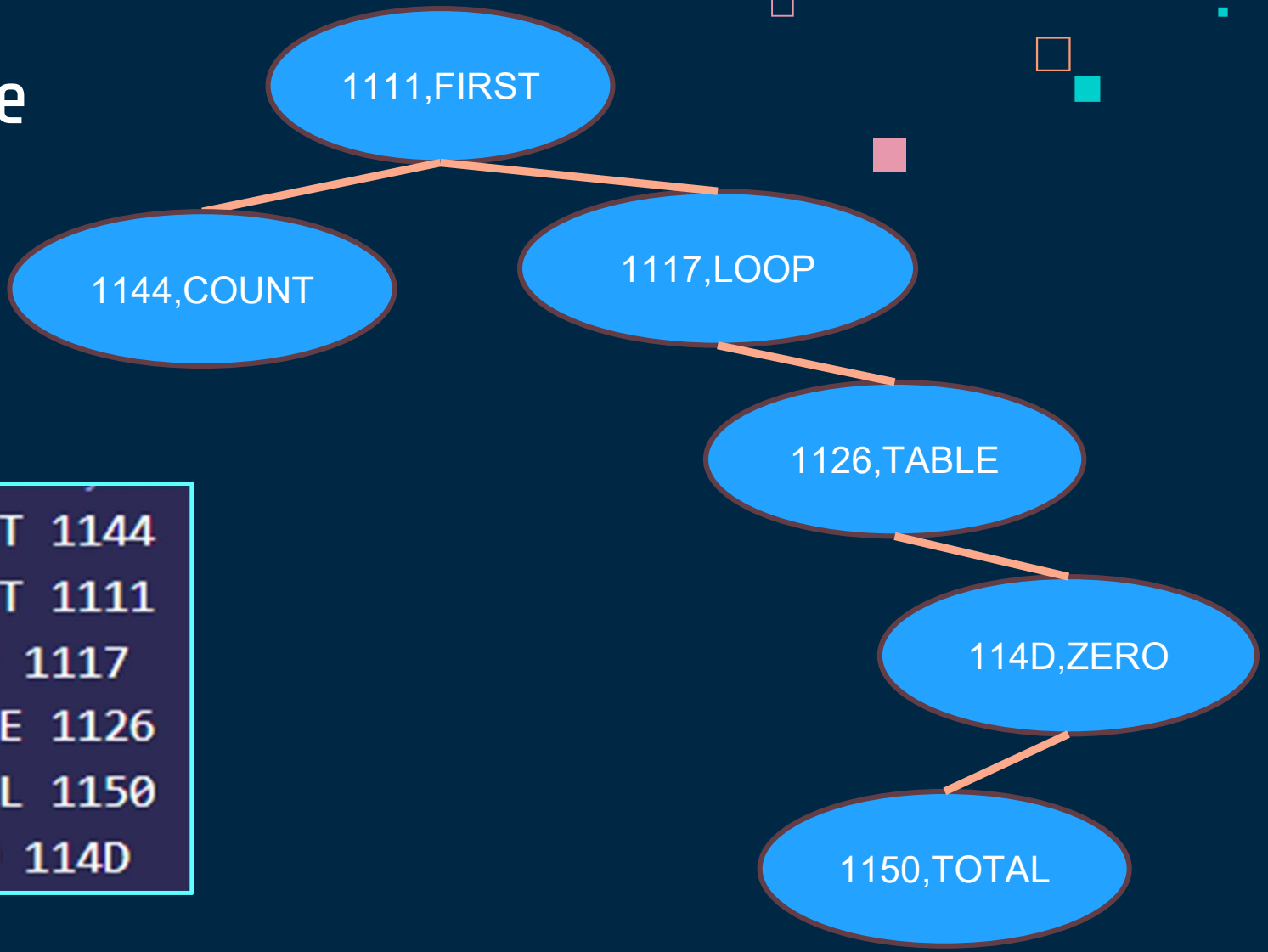
PASS1 流程


讀入
input.txt
判斷
是否有
START
否
是
執行PASS
程式
判斷
是否發
生錯誤
否
是
執行
OUTPUT
並寫入檔案
判斷
是否有
END
否
是

Hash table 流程



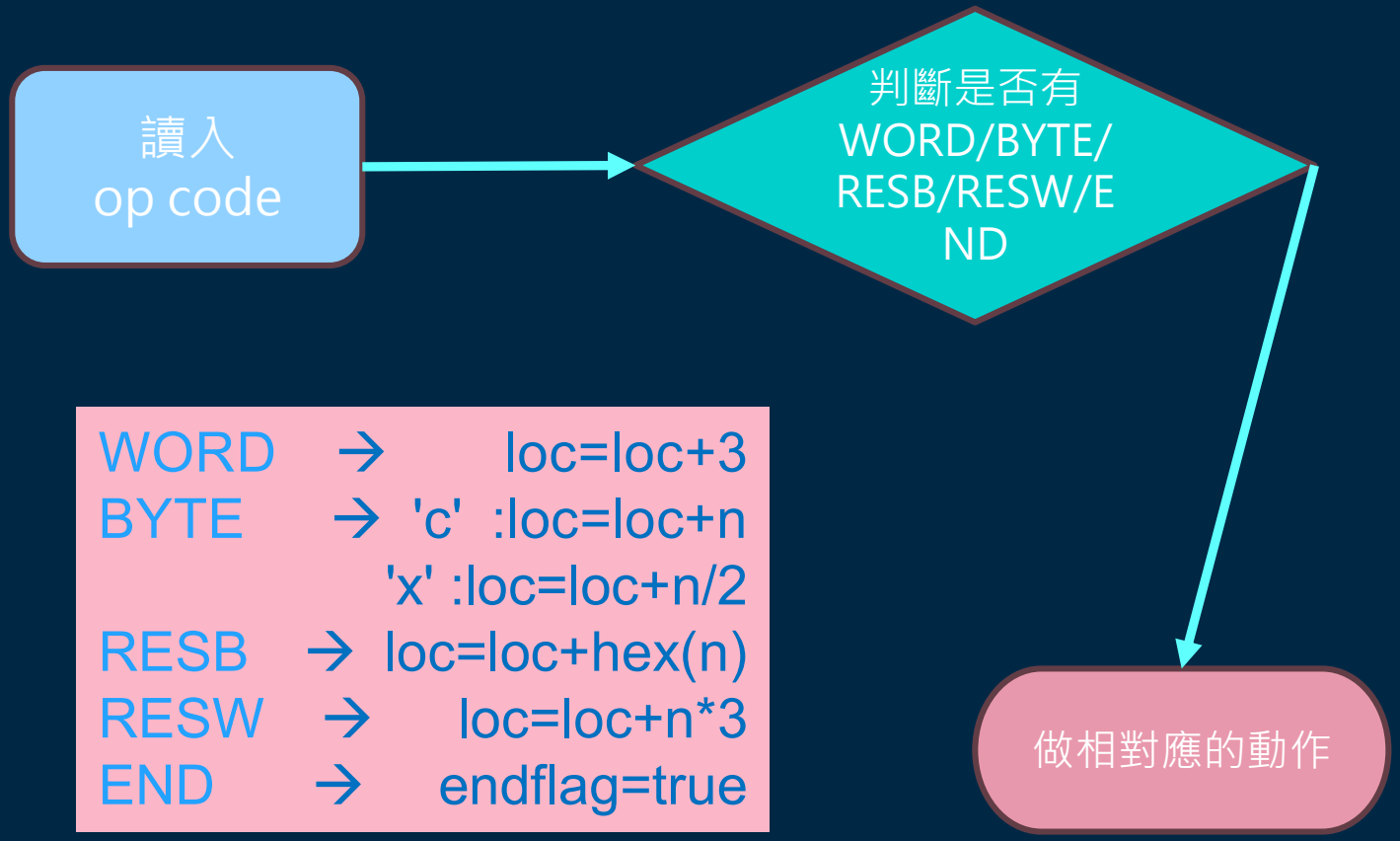
Binary tree




```
1    COUNT 1144
2    FIRST 1111
3    LOOP 1117
4    TABLE 1126
5    TOTAL 1150
6    ZERO 114D
```

Location 流程

```
else if(fo=="WORD"){
    code=word_change();
    loc+=3;
}
else if(fo=="BYTE"){
    if(retadr[0]=='C'){
        loc+=retadr.length()-3;      //Minus C and two '
        for(i=2;i<retadr.length()-1;i++){
            n=retadr[i];
            code+=inttoA(retadr[i]);
        }
    }
    else if(retadr[0]=='X'){
        for(i=2;i<retadr.length()-1;i++){
            code+=retadr[i];
        }
        loc+=(retadr.length()-3+1)/2;
    }
}
else if(fo=="RESB"){
    loc+=get_byte();
    code="";
}
else if(fo=="RESW"){
    byten=get_byte();
    loc+=byten*3;
    code="";
}
else if(fo=="END"){
    endflag=1;
}
```



Input.txt

```
1    FIRST  START  1111
2           LDX    ZERO
3           LDA    ZERO
4    LOOP   ADD    TABLE,X
5           TIX    COUNT
6           JLT    LOOP
7           STA    TOTAL
8           RSUB
9    TABLE  RESW   10
10   COUNT  RESW   3
11   ZERO   WORD   2
12   TOTAL  RESB   2
13          END    FIRST
```

Output.txt

```
1    FIRST  START  1111
2    1111          LDX    ZERO
3    1114          LDA    ZERO
4    1117 LOOP     ADD    TABLE,X
5    111A          TIX    COUNT
6    111D          JLT    LOOP
7    1120          STA    TOTAL
8    1123          RSUB
9    1126 TABLE    RESW   10
10   1144 COUNT    RESW   3
11   114D ZERO     WORD   2
12   1150 TOTAL    RESB   2
13              END    FIRST
```

Thank you for listening