**關於C subset的描述**

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1. **關鍵字**

RETURN: 'return';

DEFINE: 'define';

TYPEDEF: 'typedef';

SIZEOF: 'sizeof';

1. **資料型態 (宣告變數):**

CHAR\_TYPE: 'char';

INT\_TYPE: 'int';

SHORT\_TYPE: 'short';

LONG\_TYPE: 'long';

CONST\_TYPE: 'const';

FLOAT\_TYPE: 'float';

DOUBLE\_TYPE: 'double';

UNSIGNED\_TYPE: 'unsigned';

SIGNED\_TYPE: 'signed';

STRUCT\_TYPE: 'struct';

VOID\_TYPE: 'void';

STATIC\_TYPE: 'static';

VOLATILE\_TYPE: 'volatile';

ENUM\_TYPE: 'enum';

1. **註解方式:**

COMMENT1: '//'(.)\*'\n';

COMMENT2: '/\*' (options{greedy=false;}: .)\* '\*/';

1. **program statement相關之邏輯、數學運算子**

LT\_OP: '<';

GT\_OP: '>';

LE\_OP: '<=';

GE\_OP: '>=';

EQ\_OP: '==';

NE\_OP: '!=';

PLUS\_OP: '+';

PP\_OP: '++';

MINUS\_OP: '-';

MM\_OP: '--';

MULTIPLE\_OP: '\*';

DIVID\_OP: '/';

MOD\_OP: '%';

RSHIFT\_OP: '>>';

LSHIFT\_OP: '<<';

ASSIGN\_OP: '=';

PA\_OP: '+=';

MIA\_OP: '-=';

MUA\_OP: '\*=';

DA\_OP: '/=';

MOA\_OP: '%=';

BITAND\_OP: '&';

BITOR\_OP: '|';

AND\_OP: '&&';

OR\_OP: '||';

NOT\_OP: '!';

QUESTION\_OP: '?';

ARROW\_OP: '->';

WAVE\_OP: '~';

CARET\_OP: '^';

1. **其他標點符號**

COMMA: ',';

SEMICOLON: ';';

LEFT\_PAREM: '(';

RIGHT\_PAREM: ')';

LEFT\_BRACE: '{';

RIGHT\_BRACE: '}';

LEFT\_BRACKET: '[';

RIGHT\_BRACKET: ']';

DOT: '.';

COLON: ':';

1. **支援之程式控制結構**

* **條件判斷:**

IF: 'if';

ELSE: 'else';

BREAK: 'break';

SWITCH: 'switch';

CASE: 'case';

CONTINUE: 'continue';

DEFAULT: 'default';

* **迴圈:**

DO: 'do';

WHILE: 'while';

FOR: 'for';

1. **函式**

MAIN: 'main'

SCANF: 'scanf';

PRINTf: 'printf';

LITERAL : '"' (options{greedy=false;}: .)\* '"';

LITERAL\_CHAR: '\''(options{greedy=false;}: .)\*'\'';

HEADER: '#'(options{greedy=false;}: .)\*'\n';

1. **數字和變數**

DEC\_NUM: ('0' | ('1'..'9')(DIGIT)\*);

ID: (LETTER)(LETTER|DIGIT)\*;

fragment LETTER : 'a'..'z' | 'A'..'Z' | '\_';

fragment DIGIT : '0'..'9';

FLOAT\_NUM: FLOAT\_NUM1 | FLOAT\_NUM2 | FLOAT\_NUM3;

fragment FLOAT\_NUM1: (DIGIT)+'.'(DIGIT)\*;

fragment FLOAT\_NUM2: '.'(DIGIT)+;

fragment FLOAT\_NUM3: (DIGIT)+;

1. **換行和空白**

NULL: 'null'| '\\0';

NEW\_LINE: '\n';

WS: (' '|'\r'|'\t')+;