

7/1/97 4/1

Compiler

1. Lexical analysis - lex - DFA
2. Syntactic " - yacc - LR(1) parsing
3. Semantics " - \downarrow
4. Code Generation

$(0^*1^*)^*$
 $(3 \text{ zero}^* \text{ one}^*)^*$

RE $\xleftarrow{\text{Thm 3.17}}$ FA
 FA $\xrightarrow{\text{Thm 3.16}}$ RE

0.1 FA \rightarrow RE $4 \rightarrow 2^4 = 16$



$(0|1)^*$

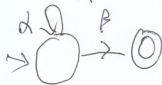
$$A \rightarrow 0A | A | 0B = 0A | 1A | 0B = (0|1)A | 0B$$

$$B = 1C = 1$$

$$C = 1D = 1$$

$$D = \epsilon$$

$$A = \alpha A | \beta$$



NFA $\xrightarrow{\text{easy}}$ DFA

$Q_N \xrightarrow[\text{construction}]{\text{subset}} 2^{Q_N}$

$$A = \frac{1}{1-\alpha} \beta$$

$$= (1 + \alpha + \alpha^2 + \dots) \beta$$

$$= \alpha^* \beta$$