

Compiler Construction
Assignment no 01
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1. Keywords

R.E:

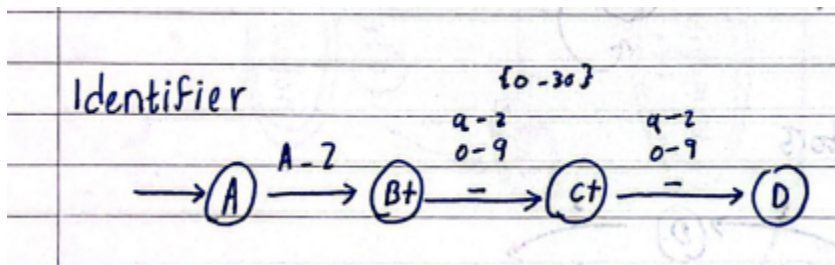
(start + finish + loop + condition + declare + output + input + function + return + break + continue + else)

2. Identifiers

R.E:

$(A-Z)((a-z) + (0-9) + (_))^{0,30}$

NFA:

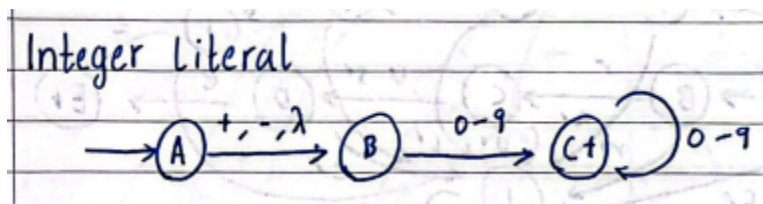


3. Integer Literals

R.E:

$(+ | - | \lambda)(0-9)^{+}$

NFA:

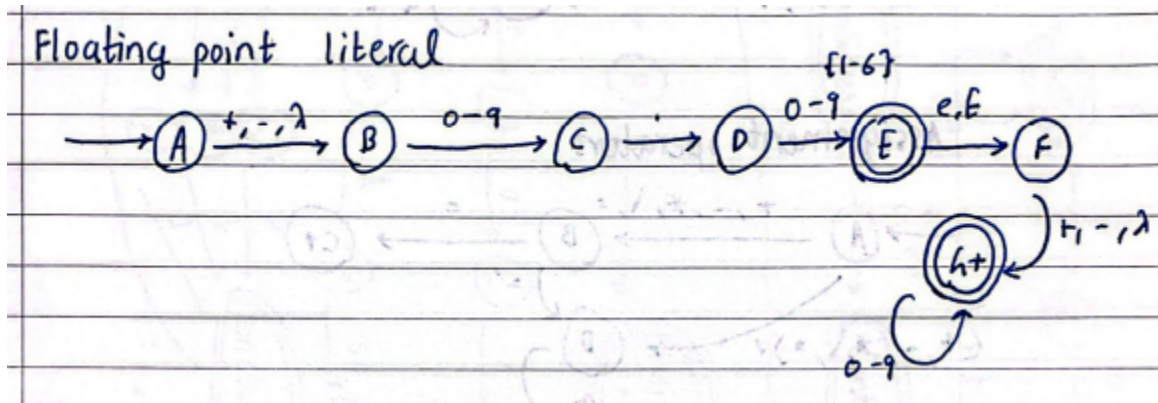


4. Floating-point Literals

R.E:

$(+ | - | \lambda)(0-9)^+ (.(0-9)^{\{1,6\}} ((e + E)(+ | - | \lambda)(0-9)^+)$

NFA:



5. String Literals

R.E:

$(")([^\text{"}\\n] + (\\)(" + \text{"} + n + t + r))^*(")$

6. Char Literals

R.E:

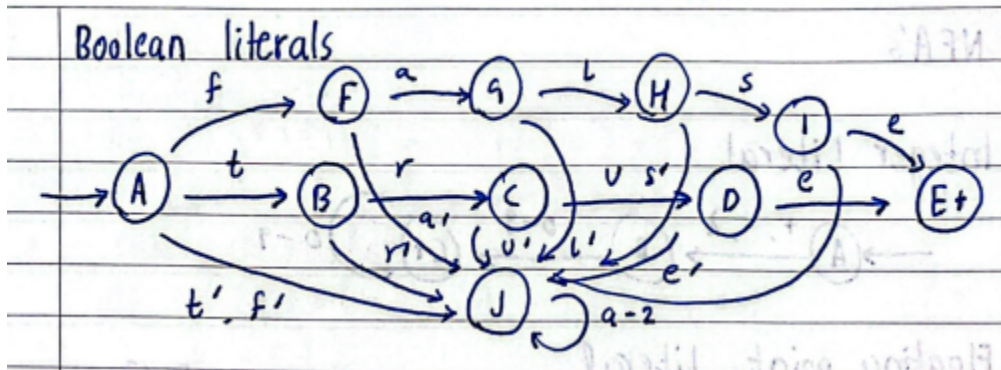
$(')([^\text{"}\\n] + (\\)(' + \text{"} + n + t + r))(')$

7. Boolean Literals

R.E:

(true + false)

NFA:



8. Operators

R.E:

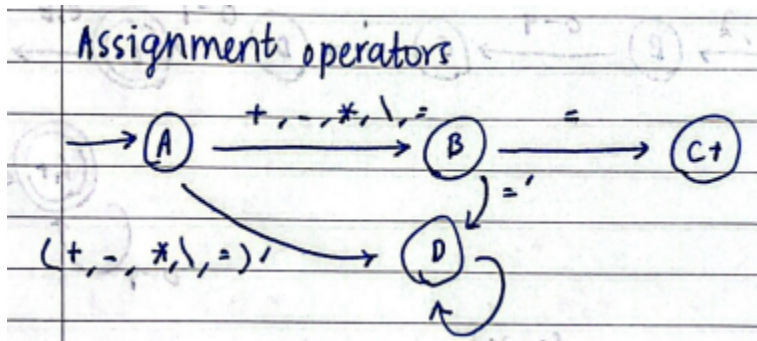
Multi-character:

(**) + (==) + (!=) + (<=) + (>=) + (&&) + (||) + (++ + (-- + (+ =) +
(-=) + (* =) + (/ =)

Single-character:

(+ + (- + (*) + (/ + (%) + (< + (> + (! + (=)

NFA:

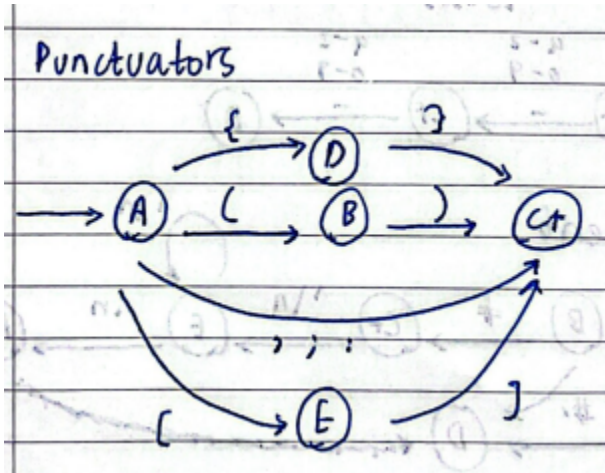


9. Punctuators

R.E:

$(() + () + (\{) + (\}) + ([) + (]) + (,) + (;) + (:)$

NFA:



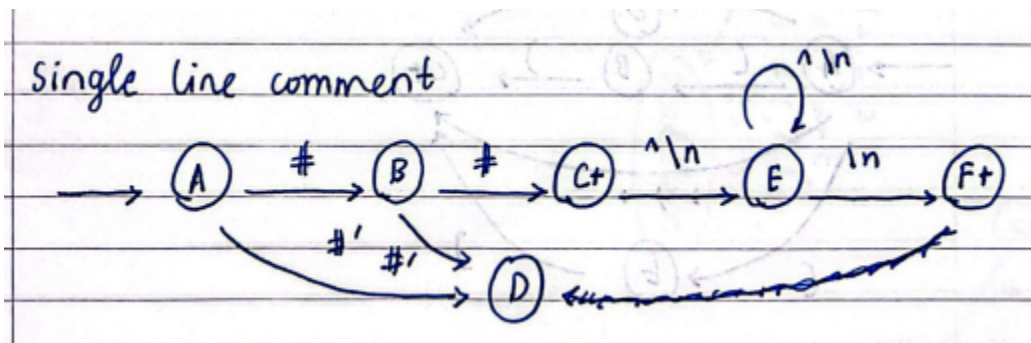
10. Comments

R.E:

Single-line Comment:

$(\#\#)([^\backslash n]^\ast)$

NFA:

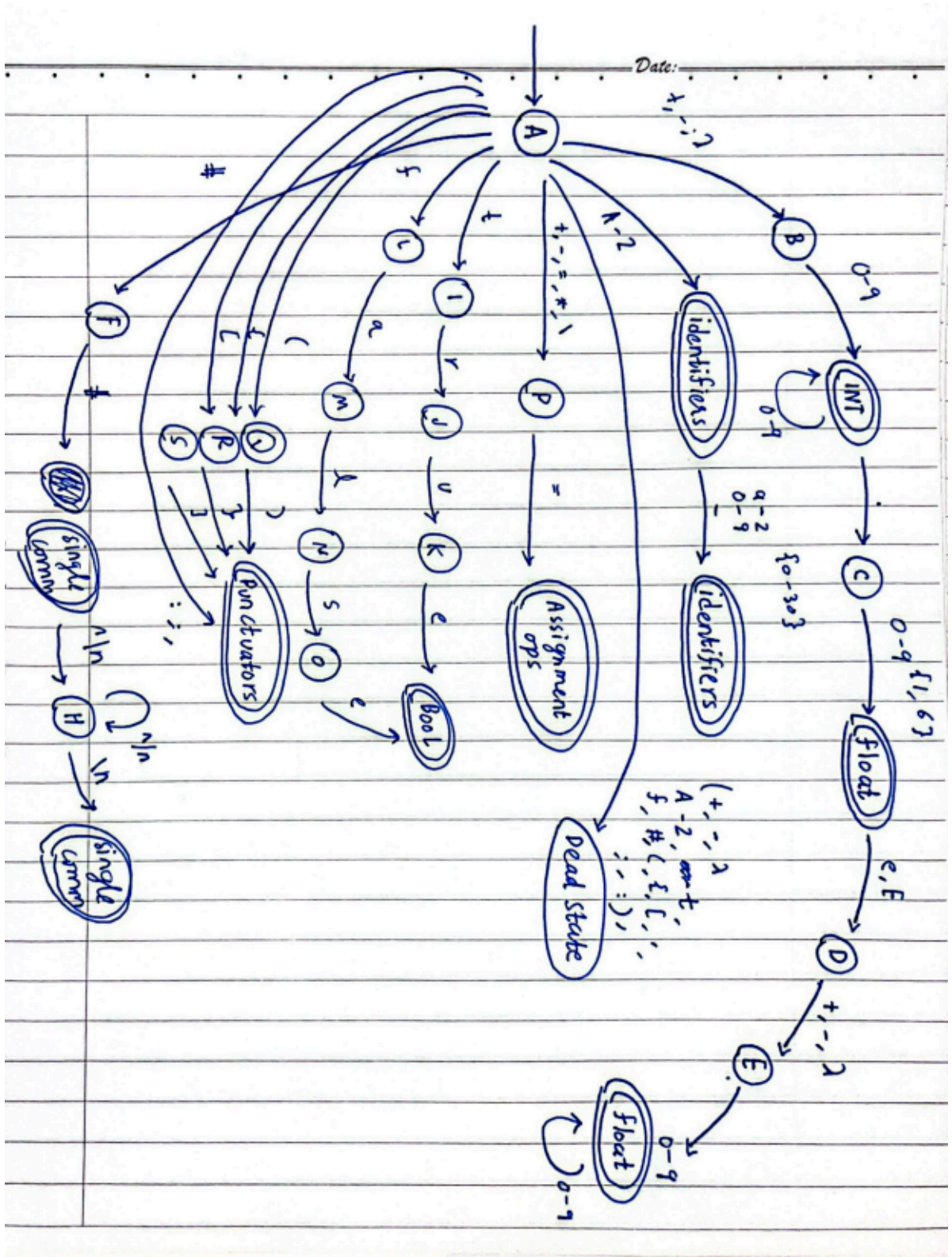


11. Whitespace

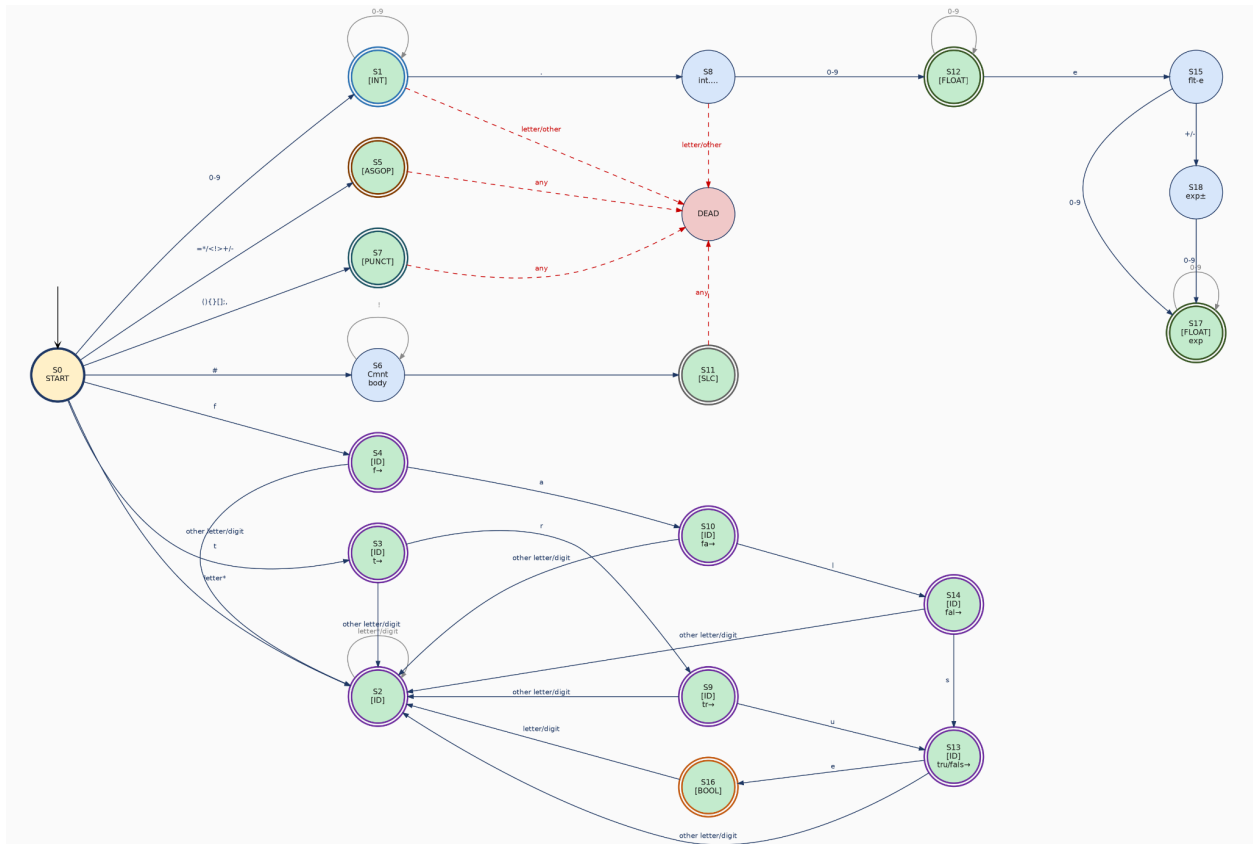
R.E:

$((\text{space}) + (\backslash t) + (\backslash r) + (\backslash n))^+$

COMBINED NFA



MINIMISED DFA



[illegible]

[illegible]

[illegible]