

Automata and Logic Engineering 1

(ALE1)

Feb 2019

Assignments

1: parse + tree

Due Feb 21 at 12:45pm

2: truth table + hash code

Due Feb 28 at 12:45pm

3: simplify

Due Mar 14 at 12:45pm

4: normalize

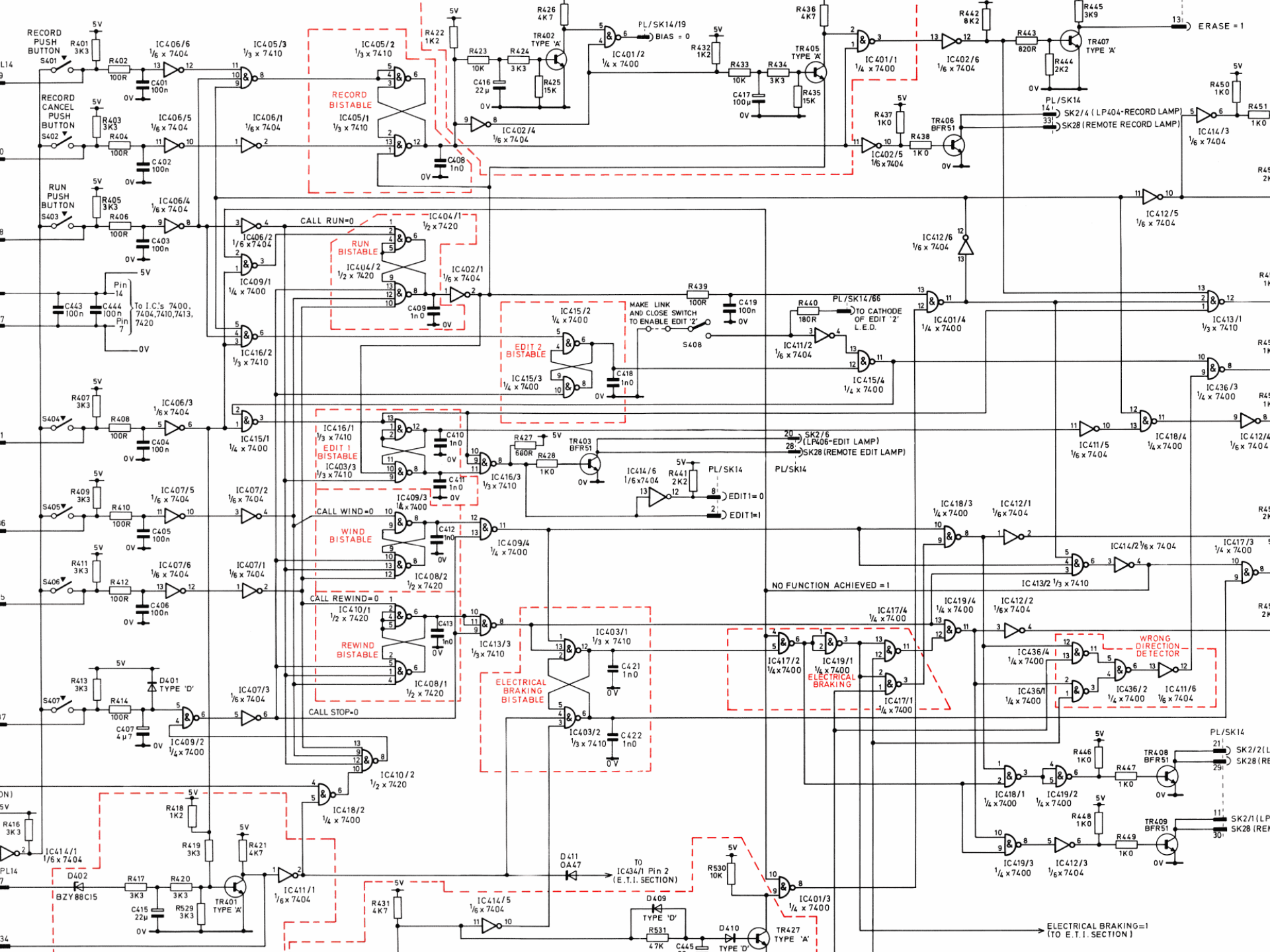
Due Mar 21 at 12:45pm

5: nandify

Due Mar 31 at 11:59pm

Simplification

WHY and **HOW?**

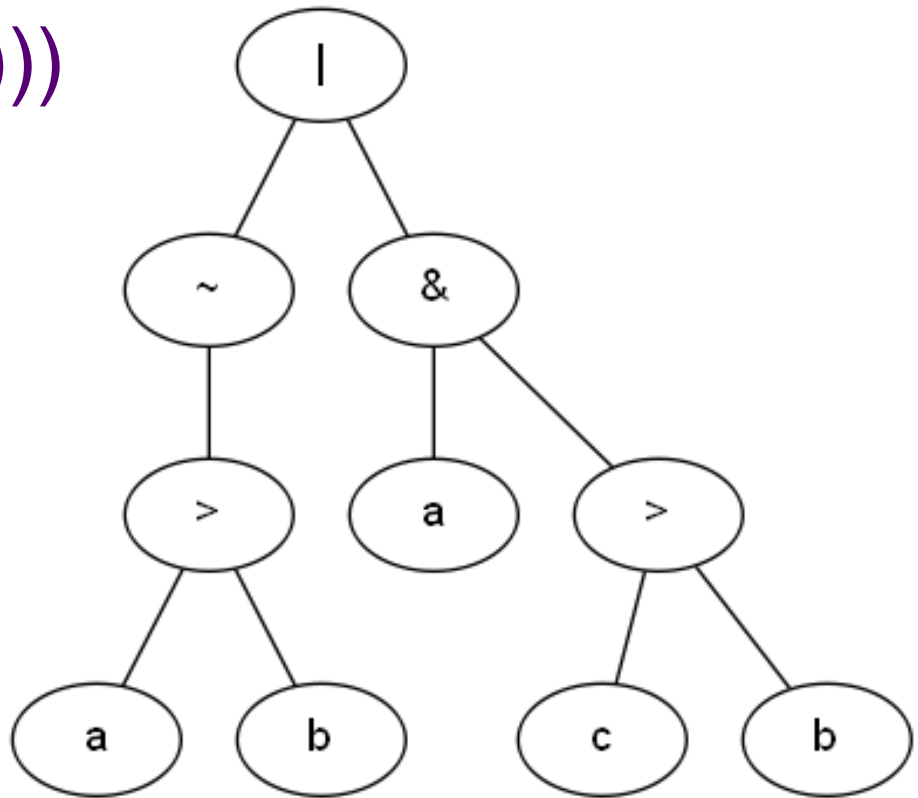


Simplification

HOW?

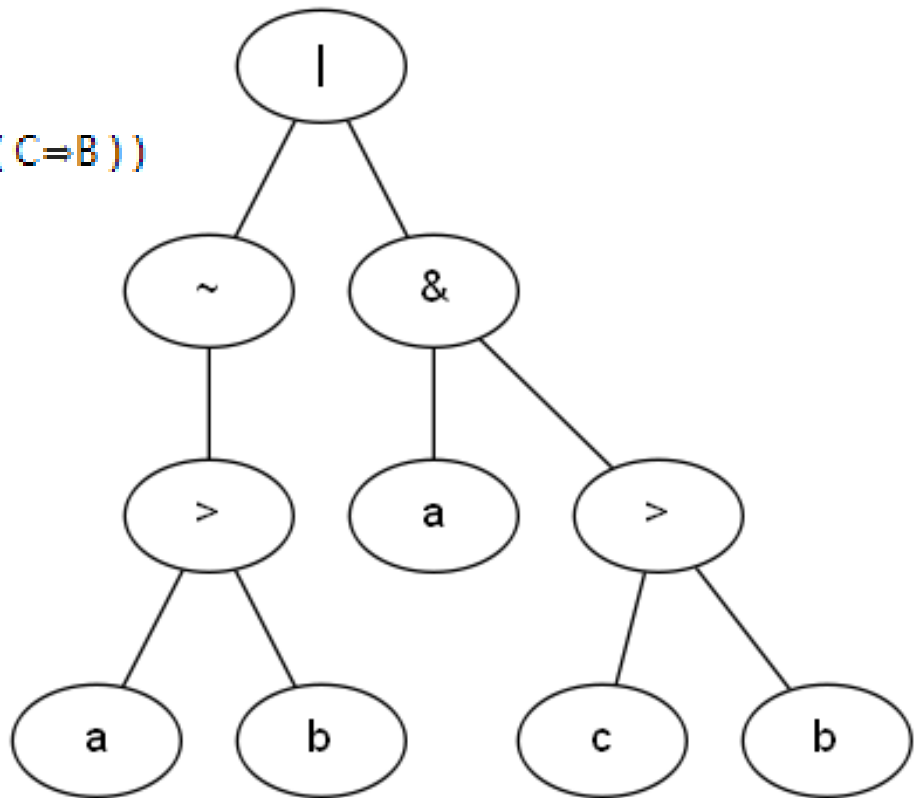
So far...

$|(\sim(>(A,B)),\&(A,>(C,B)))$



So far...

A	B	C	$(\neg(A=B)) \vee (A \wedge (C=B))$
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	1



Another example

A	B	C	$(A \Rightarrow B) \vee (C \wedge A)$
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

Practice

Simplify this table:

a.

A	B	C	$((A \vee (\neg B)) \Rightarrow C) \vee A$
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	1

b.

A	B	C	$(A \vee (\neg B)) \wedge C$
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	1
1	1	0	0
1	1	1	1

Assignment 3

- HINT: Quine–McCluskey algorithm
- Read course description for more info
- Deadline Assignment 3

14th March 12:45h!