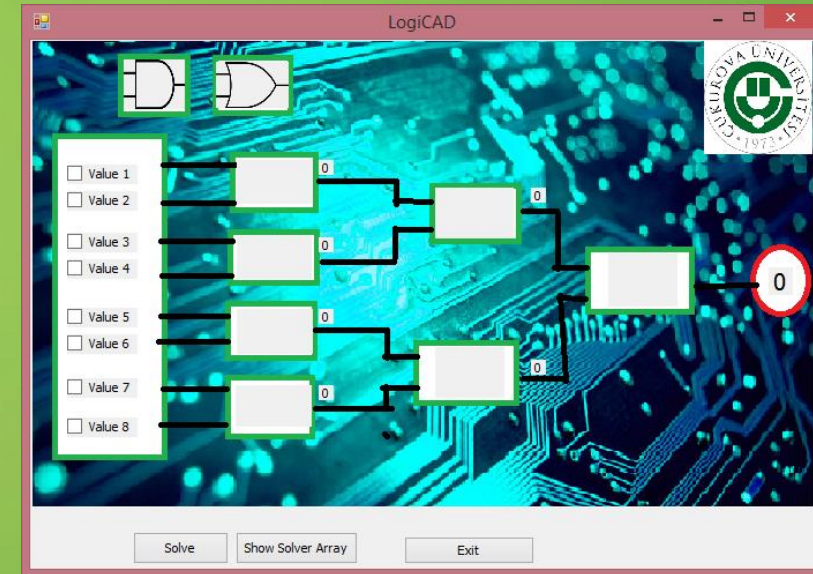# LOGICAD V0.1

DEVELOPING OF AN ALGORITHM TO SOLVE THE N LEVEL LOGIC CIRCUITS . AND APPLY AN EXAMPLE OF IT USING C# LANGUAGE .

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INTRODUCTION

- Computer aided design

- Algorethms

- Logic circuits

- Never using pre-made classes !

- What I did exactly ???

THE GENERAL ALGORITHM

- Combining windows Interface benefits with Array's Calculations .

- Easy to understand and able to develop to specific circuits solver (As I showed in V0.1)

- Can handle the most simple and most complex circuits .

- The main Idea is to convert the circuit to an array , with ability to easy input using the interface .

- SPICE Language Inspired Me .

THE SOLVER ARRAY

Key	Level	1st inp	2nd inp	Type	Output
01	n				
02					
…					
2^n					
11	n-1				
12					
13					
…					
10 + 2^(n-1)					
21	n-2				
22					
23					
…					
20 + 2^(n-2)					
…					
…					
…					
n*10 + 2^0	1				

EXAMPLE FOR SOLVER ARRAY WHEN N = 4 (SERIES) AFTER SOLUTION

Key	Level	1st	2nd	Type	output
1	4	0	0	0	1
2	4	0	0	0	0
3	4	0	0	0	1
4	4	0	0	0	0
5	4	0	0	0	1
6	4	0	0	0	0
7	4	0	0	0	1
8	4	0	0	0	0
11	3	1	0	1	0
12	3	1	0	0	1
13	3	1	0	0	1
14	3	1	0	1	0
21	2	0	1	0	1
22	2	1	0	1	0
31	1	1	0	0	1

GENERAL ALGORITHM

- Recognize inputs (code and interface)

- Read Inputs

- Make calculations for last level

- Use it to solve n-i level …

- Show the output

FLOW CHART

START

Recognize Circuit

Read Level N Elements

i = n-1

i -= 1

Solver[(i-1)*10+(2^i+1),2] =2^i+2^(i-1)(n-1)   1st number

Solver[(i-1)*10+(2^i+1),2] =2^i+2^(i-1)n   2nd nomber

TYpe \\already got from Schematich

Type = 0

Type = 1

Perform OR
Between 1st & 2nd

Go to other type

Perform And

show output

i = 0 ?

END

NOTE : when
macking a schematic
we can define 1st
and 2nd in that time
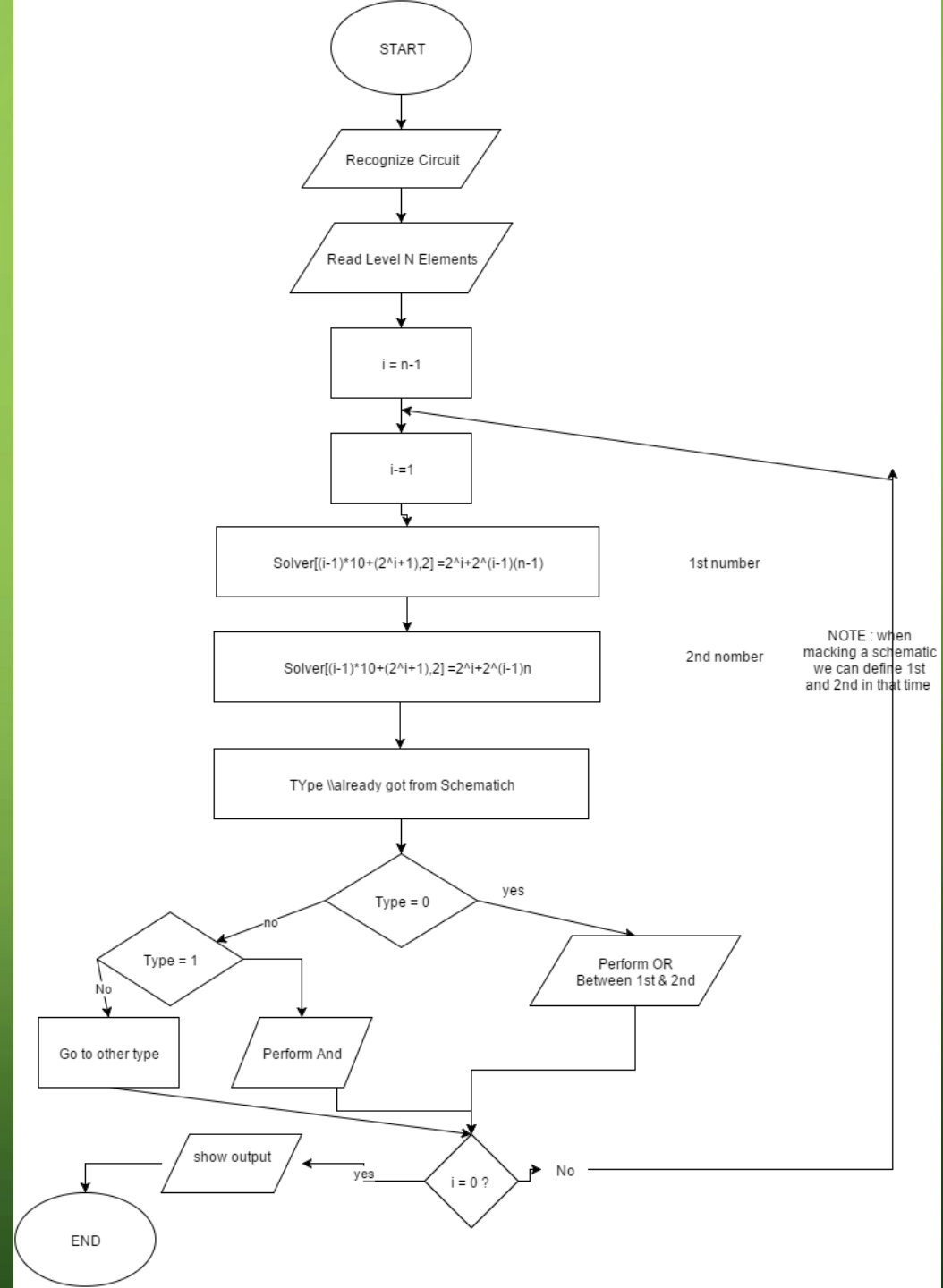
USING THE ALGORITHM IN SPECIFIC CASE

- Why is it good to make sub-progs to solve special circuits ?

- Expline our Case (series)

- Drog and drop is fun !
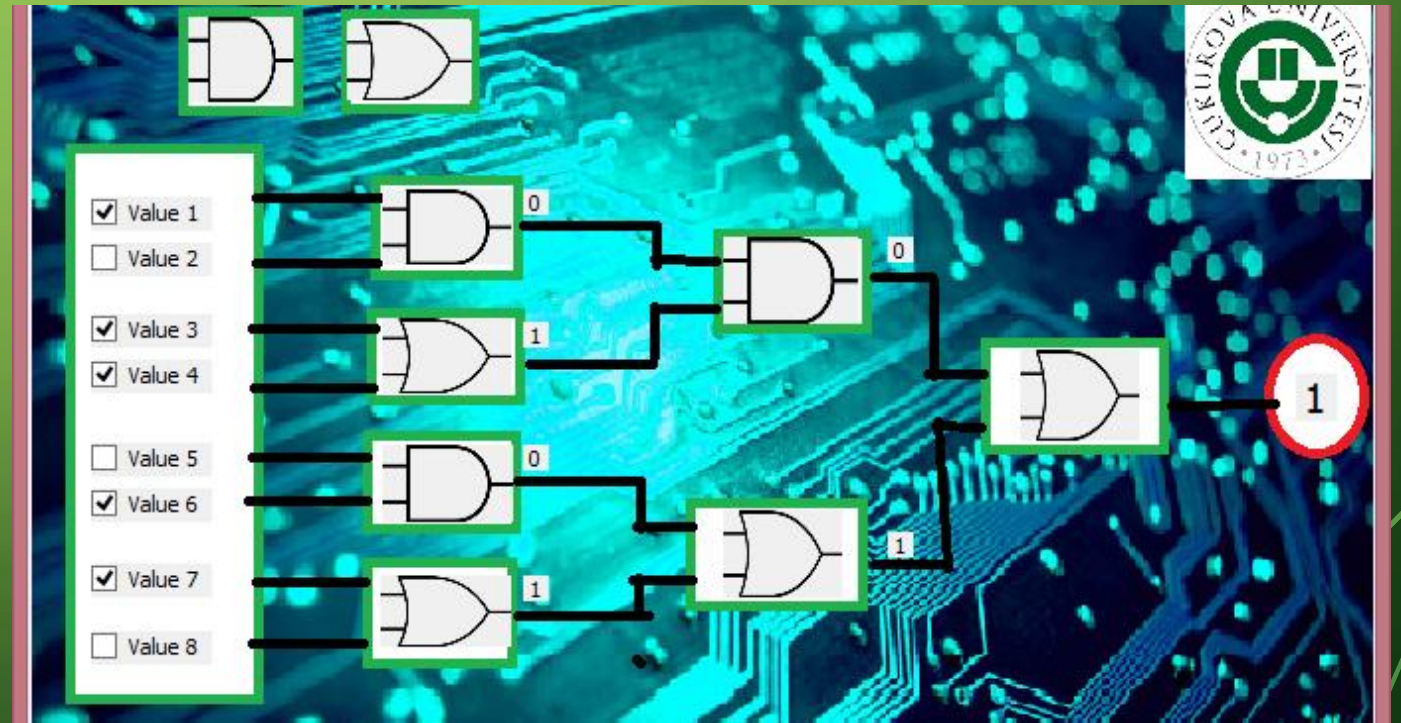
LETS DISCUSS THE CODES !!!

- Short Visit for the source Code !

HOW CAN IT BE DEVELOPED ??

- Add a special Gates ! (even pre designed) .

- The ability to Draw the schematic (How Can we do It ?)

- Connect the inputs and the output outside ! (applications of that !)

- Dealing with Errors .

- Active Helper !

LETS SOLVE AN 4 LEVELS SERIES AND OR LOGIC CIRCUIT .

- Run The Program .

REFERENCES

- msdn.microsoft.com

- stackoverflow.com

- www.codeproject.com

- Wilipedia.com

- Our Lectures Notes

WE DONE !

THANKS FOR LISTENING

Any Questions ????