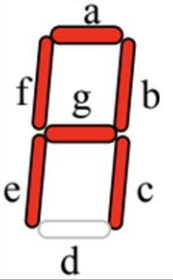
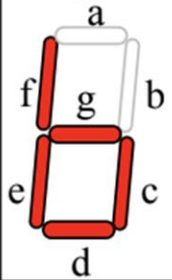
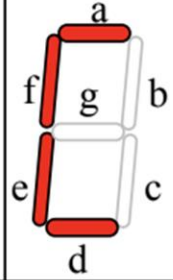
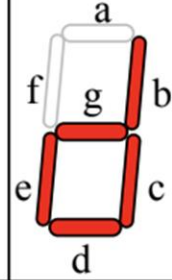
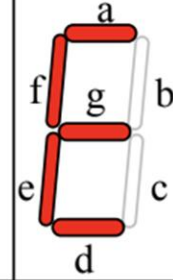
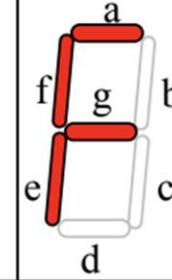
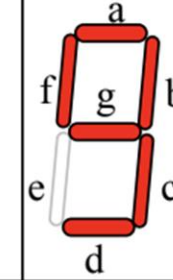
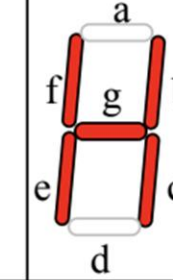
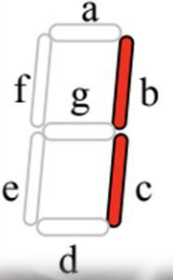
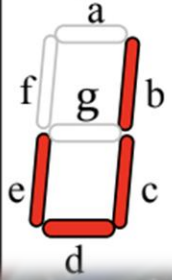


PROJECT "LOGIC DESIGN"

Project 4: A to J with 7-Segments (common Cathode) using (AND-OR-NOT) only

You should do the following:

- 1- Write the Truth Table and use don't care inputs from 10 to 15
- 2- Simplify the output functions using K-Map and write the equations
- 3- Design the circuit and draw the logic diagram
- 4- Implement your Project virtual on **TINKERCAD.COM** or **Electronic Workbench**
- 5- Implement your Project on real board

Input: 0000 Output: 	Input: 0001 Output: 	Input: 0010 Output: 	Input: 0011 Output: 	Input: 0100 Output: 	Input: 0101 Output: 	Input: 0110 Output: 	Input: 0111 Output: 
Input: 1000 Output: 	Input: 1001 Output: 						

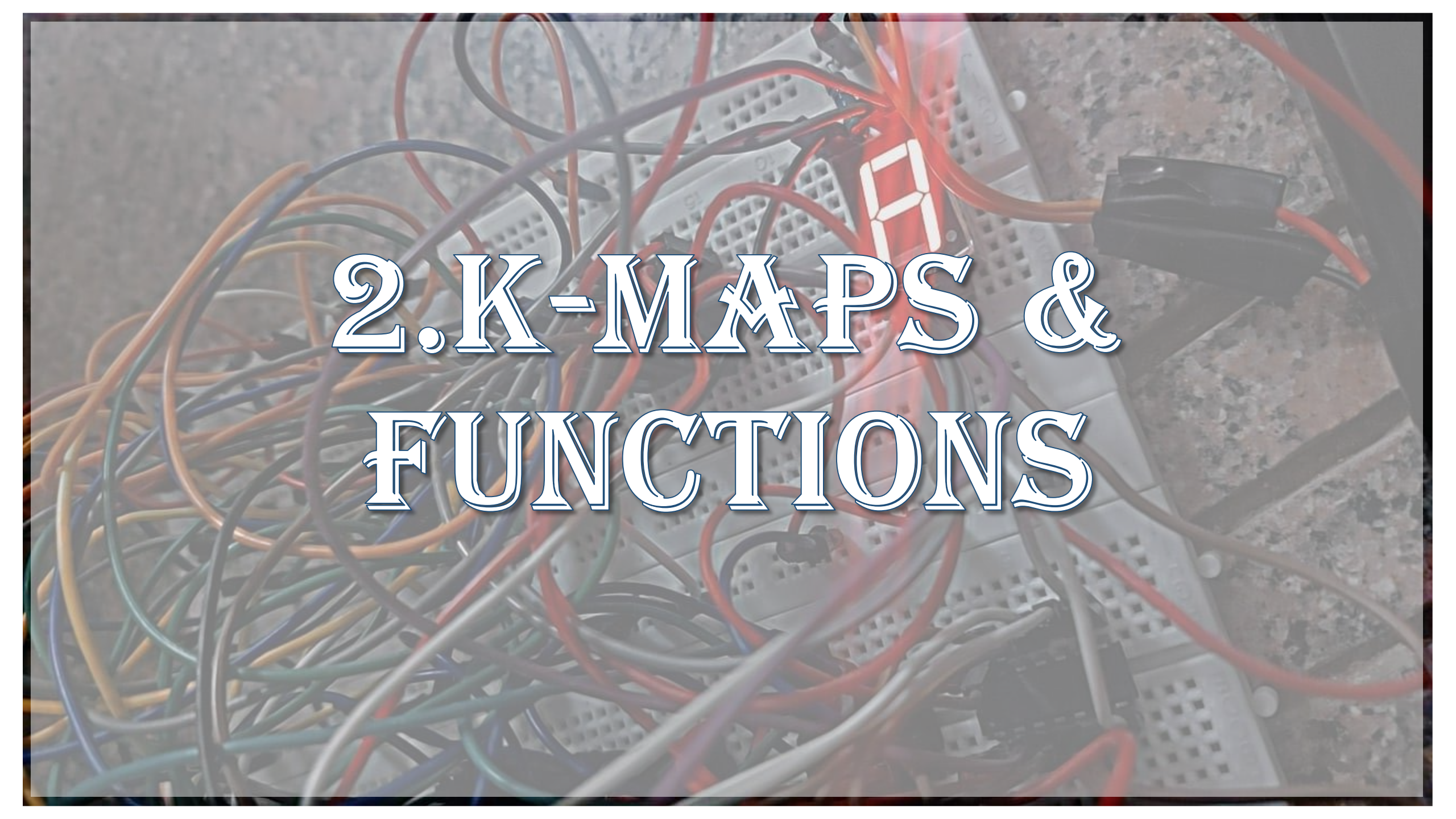
PREPARED BY :

- Maryam Yasser
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- Mai Nasser Abo Bakr
- Esraa walid
- Haneen Mahmoud Sayed



1. TROUTH TABLE

	W	X	Y	Z	A	B	C	D	E	F	G
A	0	0	0	0	1	1	1	0	1	1	1
B	0	0	0	1	0	0	1	1	1	1	1
C	0	0	1	0	1	0	0	1	1	1	0
D	0	0	1	1	0	1	1	1	1	0	1
E	0	1	0	0	1	0	0	1	1	1	1
F	0	1	0	1	1	0	0	0	1	1	1
G	0	1	1	0	1	1	1	1	0	1	1
H	0	1	1	1	0	1	1	0	1	1	1
I	1	0	0	0	0	1	1	0	0	0	0
J	1	0	0	1	0	1	1	1	1	0	0
	1	0	1	0	X	X	X	X	X	X	X
	1	0	1	1	X	X	X	X	X	X	X
	1	1	0	0	X	X	X	X	X	X	X
	1	1	0	1	X	X	X	X	X	X	X
	1	1	1	0	X	X	X	X	X	X	X
	1	1	1	1	X	X	X	X	X	X	X



2.K-MAPS & FUNCTIONS

1.FOR 'A' FUN. :

	y'		y		
w'	1	0	0	1	x'
w	1	1	0	1	x
	x	x	x	x	
	0	0	x	x	x'
	z'	z		z'	

$$a = xy' + w'z'$$

1. FOR 'B' FUN. :

	y'		y		
w'	1	0	1	0	x'
	0	0	1	1	x
w	x	x	x	x	
	1	1	x	x	x'
	z'	z		z'	

$$b = x'y'z' + yz + xy + w$$

$$b = x'y'z' + y(z+x) + w$$

1. FOR 'C' FUN. :

	y'		y		
w'	1	1	1	0	x'
	0	0	1	1	x
w	x	x	x	x	
	1	1	x	x	x'
	z'	z		z'	

$$c = xy + yz + x'y'$$
$$c = y(x+z) + x'y'$$

1. FOR 'D' FUN. :

	y'		y		
w'	0	1	1	1	x'
	1	0	0	1	x
w	x	x	x	x	
	0	1	x	x	x'
	z'	z		z'	

$$d = yz' + x'z + xz'$$

1. FOR 'E' FUN. :

	y'		y		
w'	1	1	1	1	x'
	1	1	1	0	x
w	x	x	x	x	
	0	1	x	x	x'
	z'	z		z'	

$$e = z + w'x' + w'y'$$

$$e = z + w'(x' + y')$$

1. FOR 'F' FUN. :

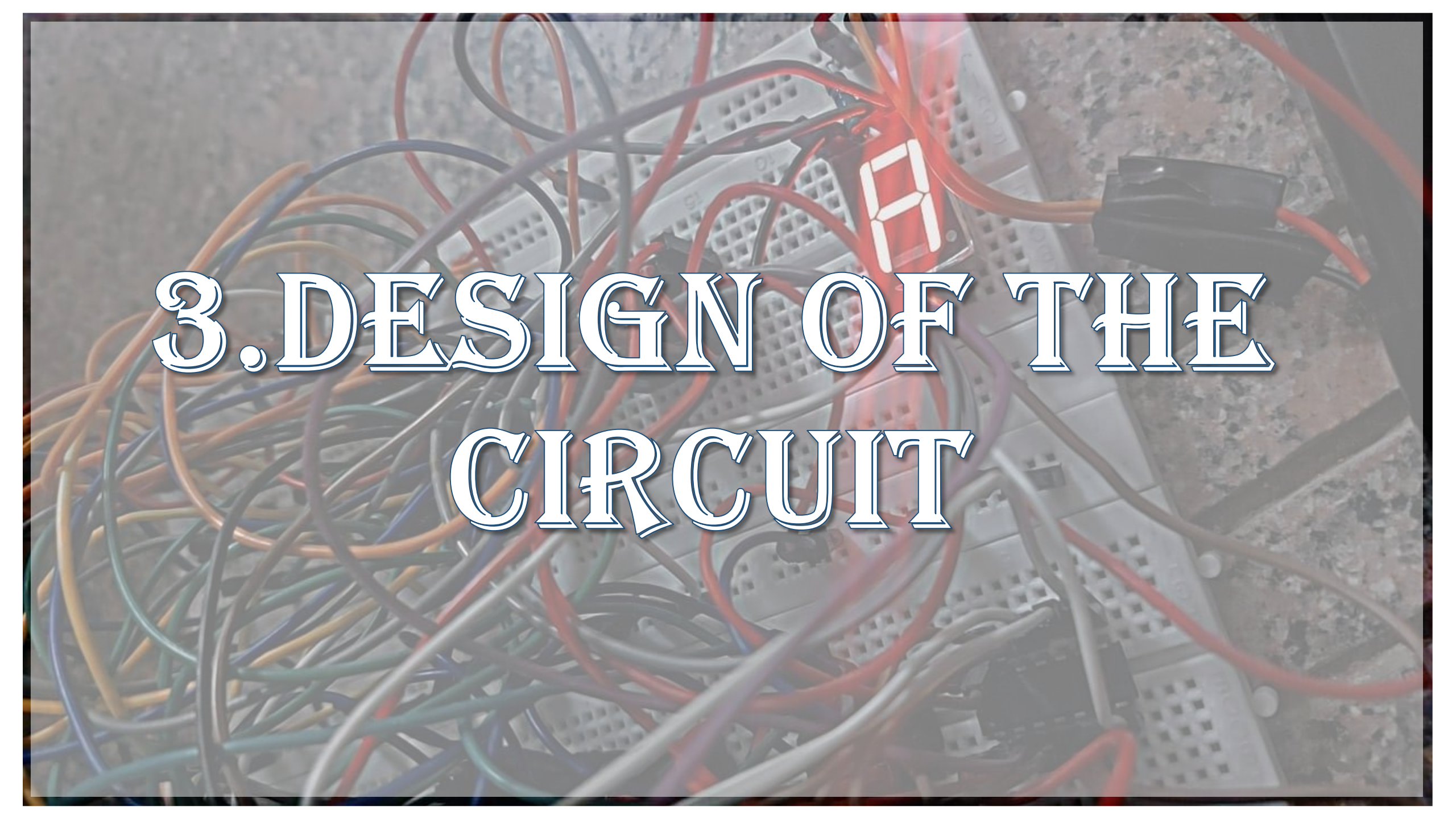
	y'		y		
w'	1	1	0	1	x'
	1	1	1	1	x
w	x	x	x	x	x
	0	0	x	x	x'
	z'	z		z'	

$$f = x + yz' + w'y'$$

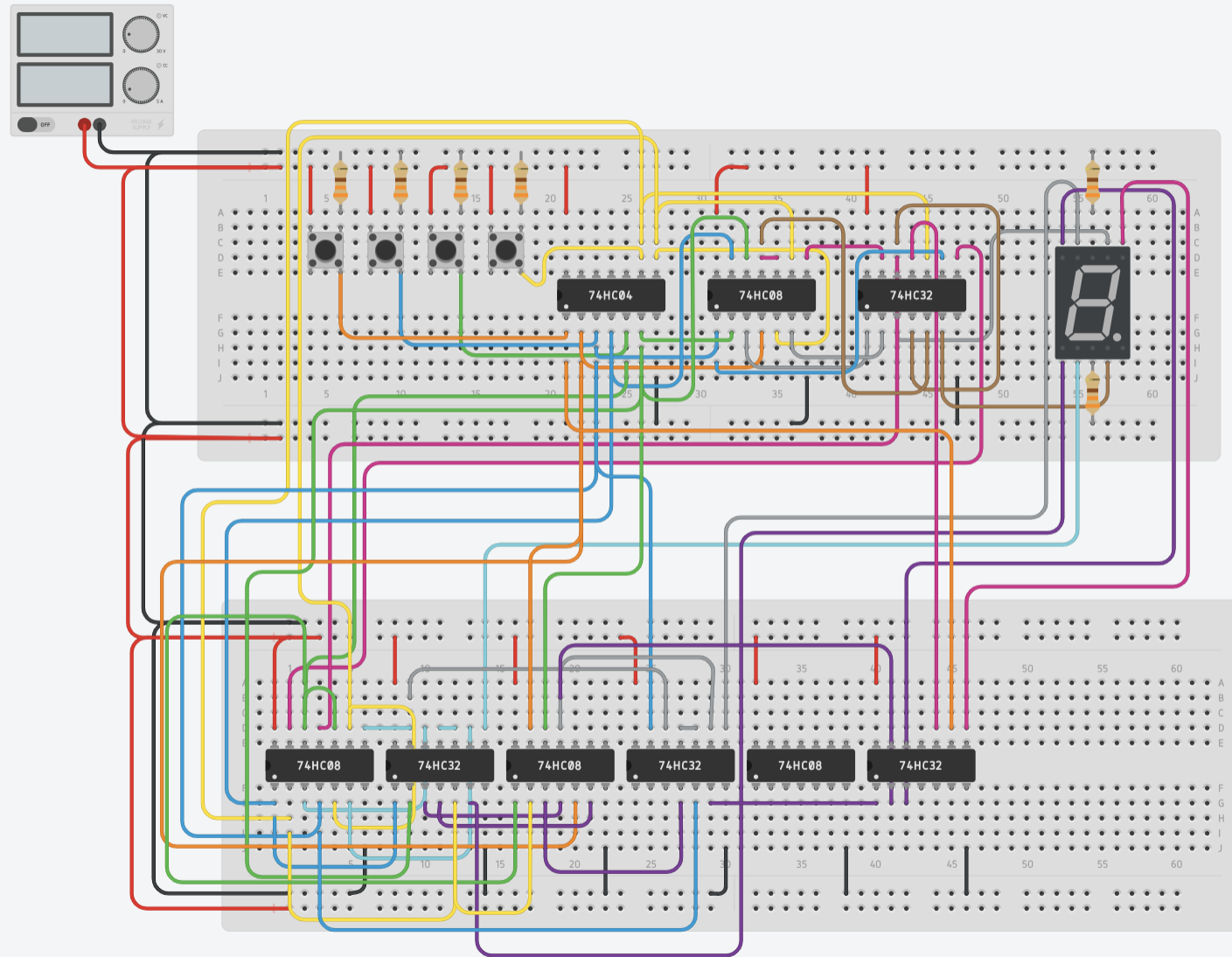
1. FOR 'G' FUN. :

	y'		y		
w'	1	1	1	0	x'
w	1	1	1	1	x
	x	x	x	x	
	0	0	x	x	x'
	z'	z		z'	

$$g = x + yz + w'y'$$

A close-up photograph of a breadboard circuit. A 7-segment display is mounted on the breadboard, showing the number '8' in red. It is surrounded by a dense network of multi-colored jumper wires (red, blue, green, yellow, black) connected to various integrated circuits and components. The background is a textured, light-colored surface.

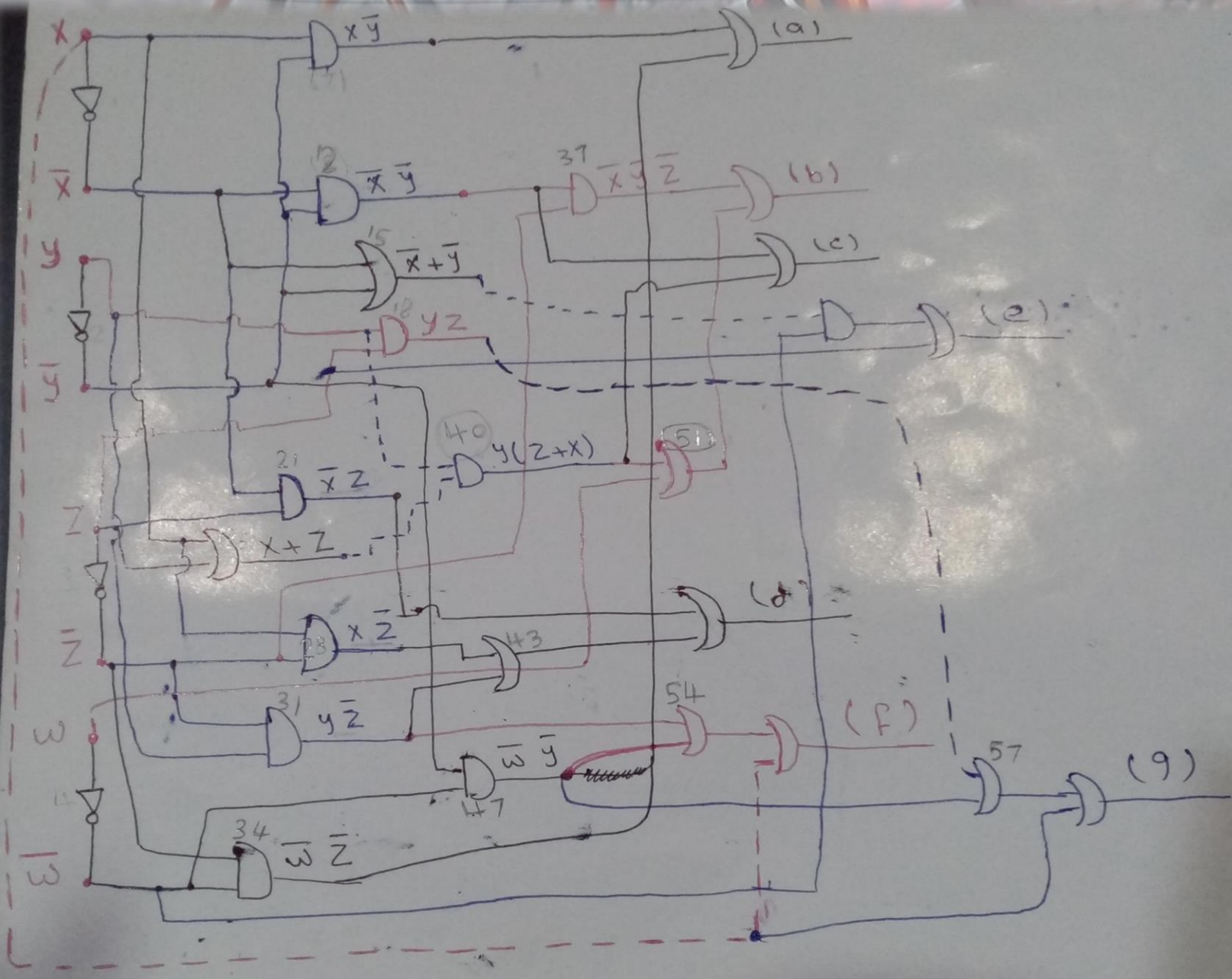
3.DESIGN OF THE CIRCUIT



https://www.tinkercad.com/things/8kvkgPYrrEN-copy-of-project-logic-the-final-copy-/editel?sharecode=zwXd_pUMFxfwGcbiy3NkKGBqFpwfjk62cFesDAliEac

A photograph of a breadboard circuit. A 7-segment display is mounted on the breadboard and shows the number '8'. The display is red with white segments. It is connected to a complex network of multi-colored jumper wires (red, blue, green, yellow, black) that are plugged into various pins on the breadboard. A black power connector is also visible on the right side of the breadboard. The background is a light-colored, textured surface.

4.LOGIC DIGRAM



5.ON A REEL BORD

