Types of display:

1. led display
2. segment display
3. led matrix(dot matrix)

led display disadvantage:

how mach energy leds take only led take (15mA 🡪 5v)==75mW

1. high power consumption

how many pin you take to use 7-segment ? 🡺 7pins if we use ground out

for ex : to make clock show hh:mm:ss it wil take 6 of 7-segment which you can’t do it

1. number of pins is big

we have advantage:

1-atractive

2- small size

3- big view angle

Light polarization

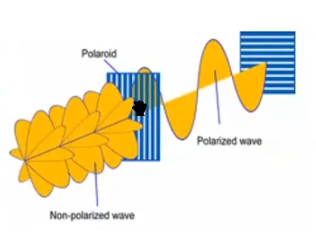
So we have LCD : Liquid crystal

Light polarization first:

We know the light is electromagnetic wave so : it orthogonal متعامده

And it was in different planes مختلف المستويات

So we called it unporalized light and every usual light is unporalized



So what do you think if we use object with little small tine holes in it to block light

We called block polarizer

So we have wave in one direction as we want

So if we use another block and rotate it in 90o what will happen??

It blocked !!!!

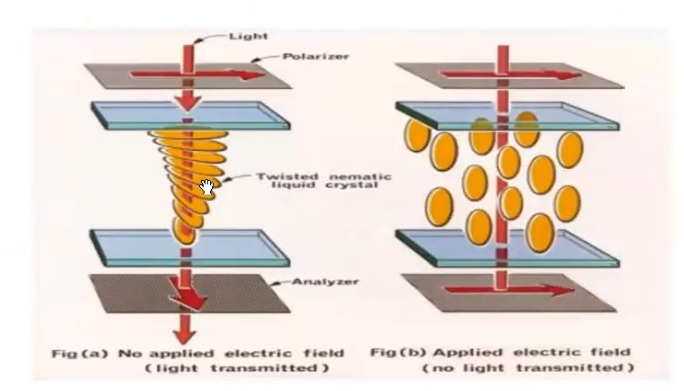
How we get light thus??

We can rotate light in 90o so it can through .

But how??

Her we use liquid crystal display or LCD

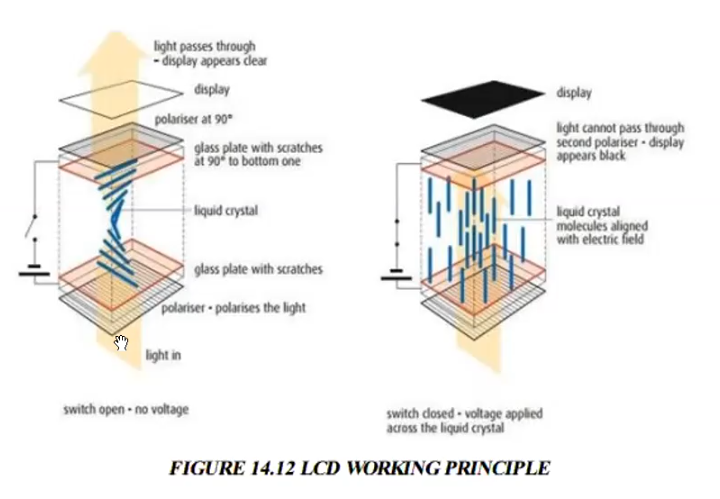
Liquid crystal : it state of mater have fluidity and hardness of solid

In normal state it liquid but can change it internal structure with voltage effect

So he have two state rotate atoms in 90o whit no voltage effect

And stand still with voltage effect

And have transparent



Note : does not lite your LCD too much time on to not git dry

What that mean??

Liquid crystal stay on voltage effect too long my be no get back to first state when can rotate light

LCD have it source light from One big Led .