



# LEARN HOW TO USE EASYEDA

Design and Order Professional PCB.

## Abstract

This basic guide of EasyEDA software will help you to create professional schematic of any circuit, prepare PCB and order it online from JLCPCB.



University  
of Windsor

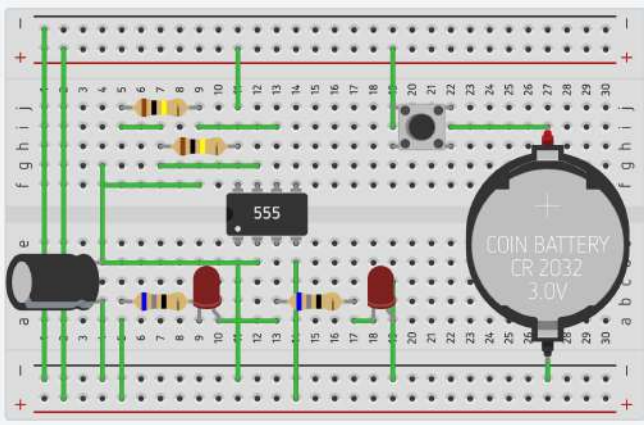
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Entrepreneurship + Practice + Innovation

# What Are Common Uses for PCB?

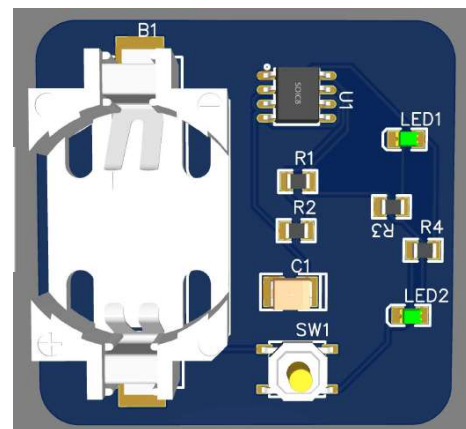
Because so many different sectors use PCBs, you can find them almost everywhere in everything from small consumer device to huge piece of machinery. Where are printed circuit board used? Here are the most common PCB applications by industry.

- Medical Equipment
- Consumer Electronics
- Industrial Equipment
- Automotive Components
- Aerospace Components
- Safety and Security Equipment
- Telecommunication Equipment
- Military and Defense Application

**Aim for this guide is:**



**To be able to convert a prototype circuit**



**To a professional PCB with all components on it.**

# Create an EasyEDA Account and Create a New Project



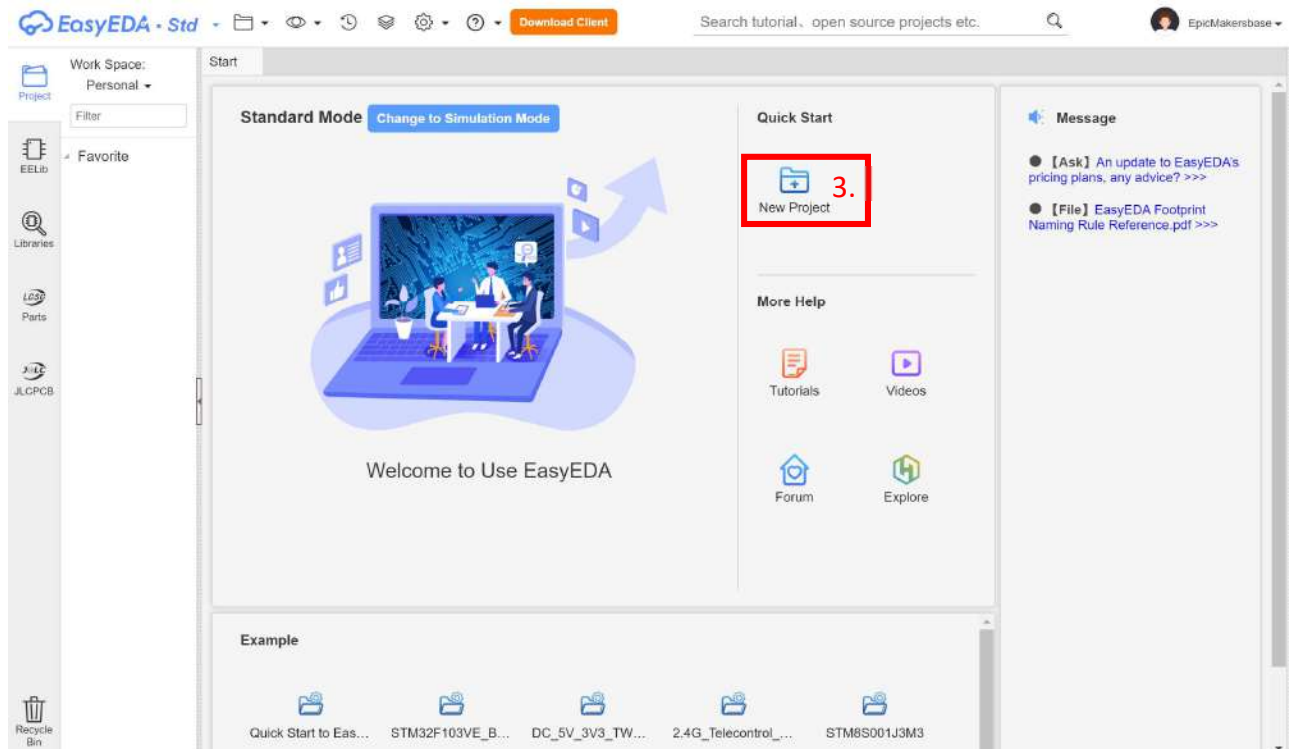
Welcome to EasyEDA, a great web based on EDA (Electronics Design Automation) tool for electronics engineers, educators, students, makers and enthusiasts.

There is no need to install any software. Just open EasyEDA in any HTML5 capable, standards compliant web browser. <https://easyeda.com/>



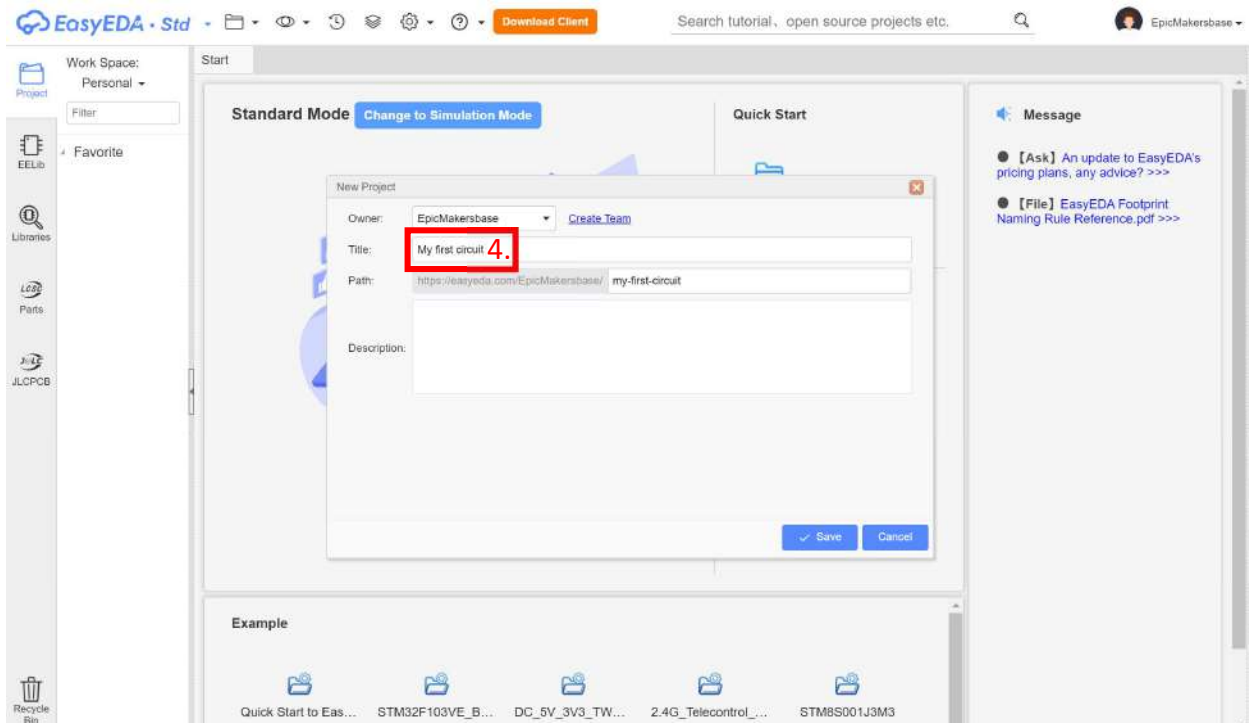
EasyEDA main page.

1. Register to create a new account on EasyEDA.
2. After successful login, click on EasyEDA Designer button.



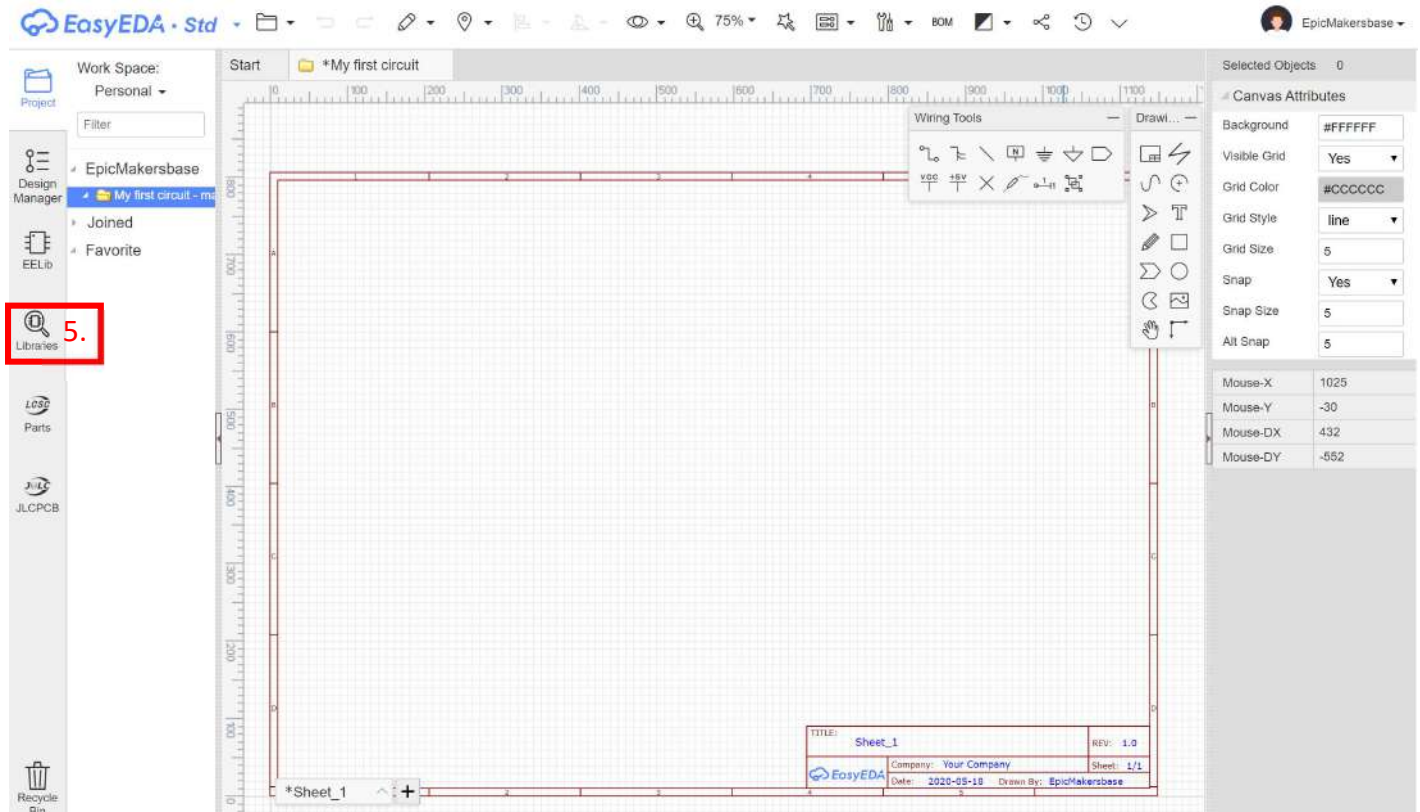
Empty workspace.

### 3. Create new project.



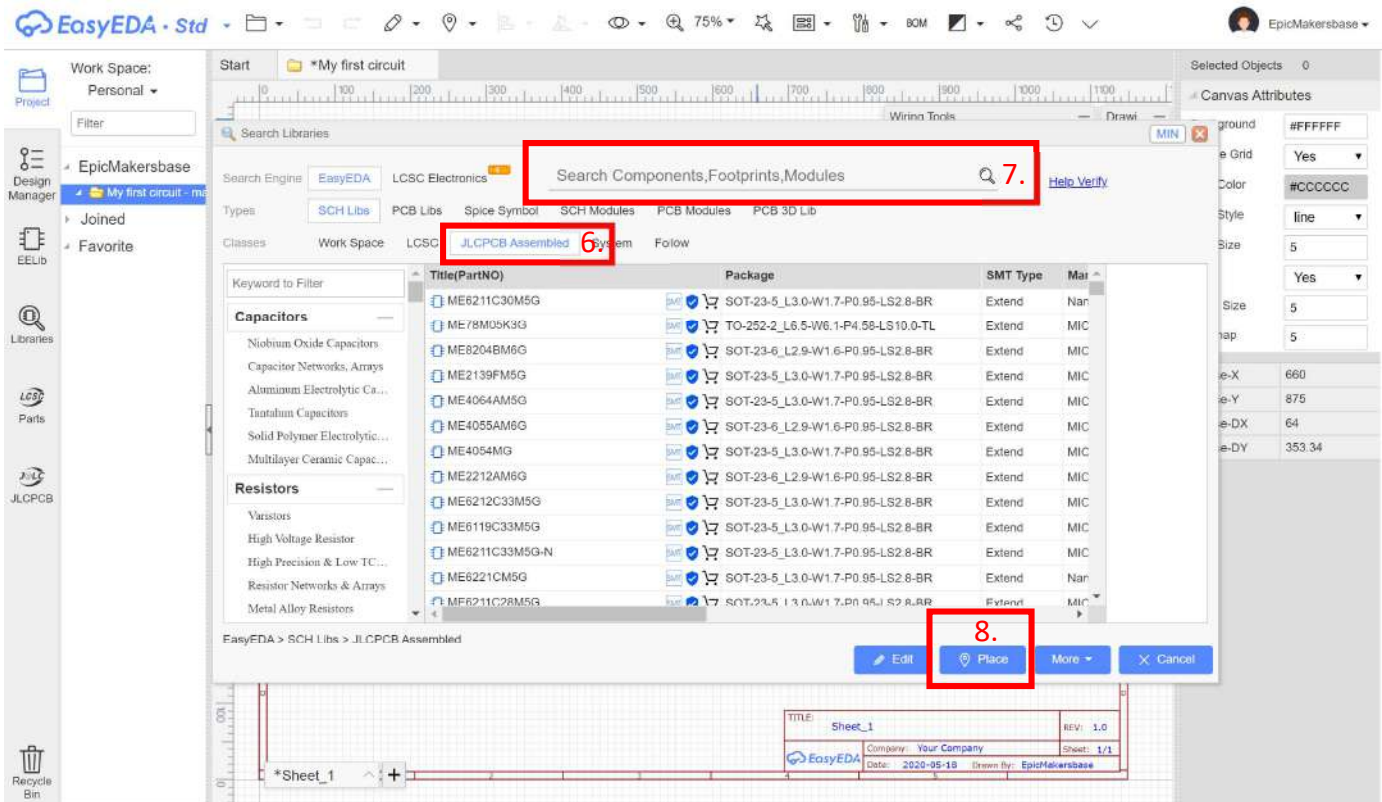
### 4. Name your project and click save.

# Create New Schematic and PCB



5. Click on library to select components to add.

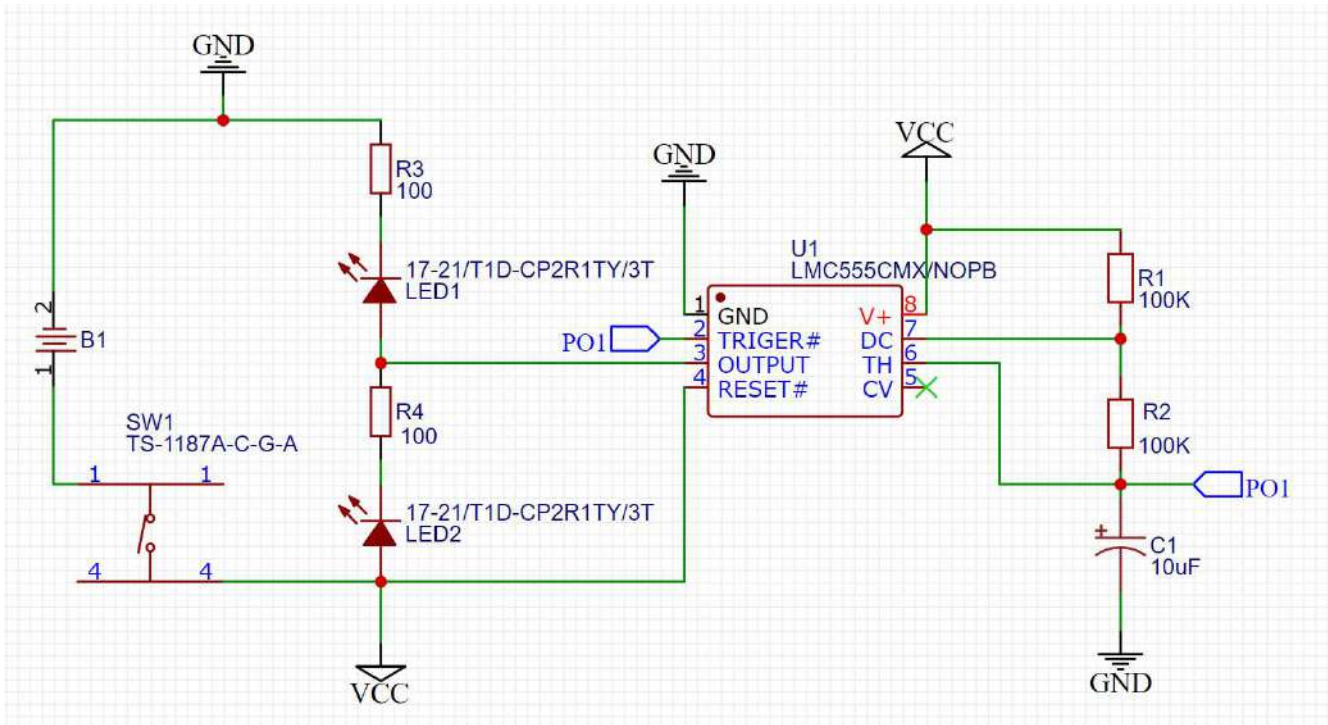




6. Select JLCPCB Assembly (JLCPCB are manufactures of professional PCB) so we can use their SMT (Assembly) service.
7. Search the component by part number or value, select the component from the list.
8. Click place and place it on the sheet.

Components list for making blinking LED using 555 timer IC:

	Component Name	Part No.	Quantity
1	555 Timer IC	LMC555CMX	1
2	CR2032 cell holder	CR2032-BS-6-1	1
3	10uf Capacitor	CA45A-B-25V-10uF-K	1
4	LED lights	17-21/T1D-CP2R1TY/3T	2
5	100K resistor	RTAN0805BKE100K	2
6	100 $\Omega$ resistor	TC0225F1000TCE	2
7	Button switch	TS-1187A-C-G-A	1



Schematic drawing.

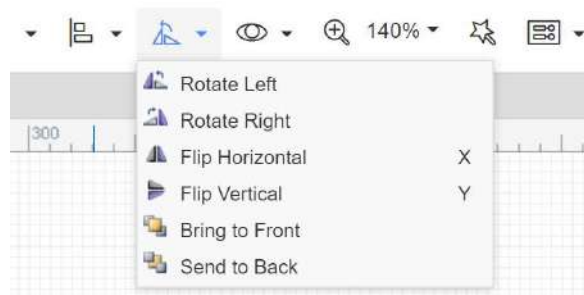
#### Wiring Tools



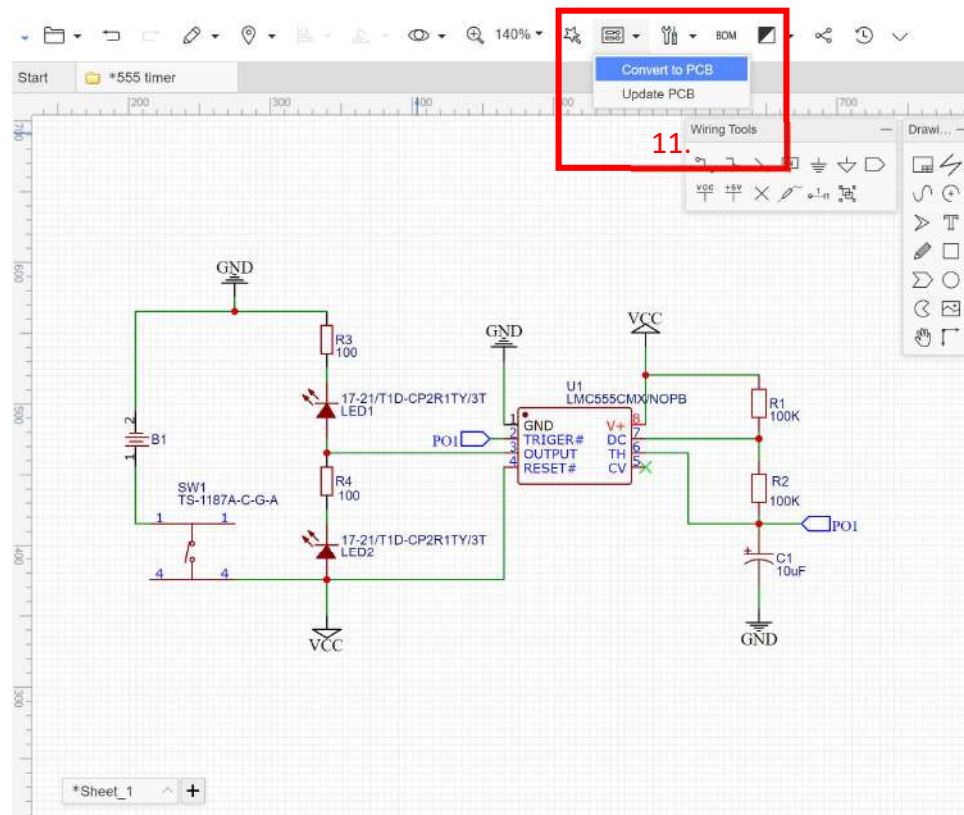
#### Wiring Tools



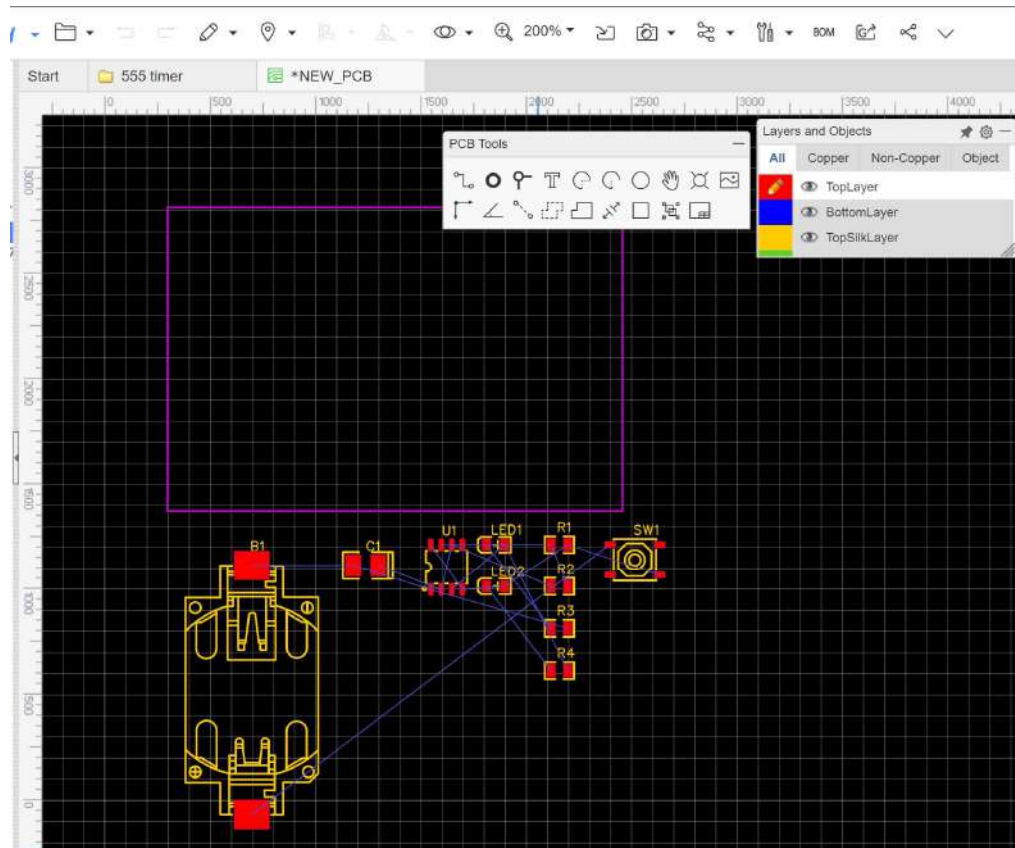
9. Create the above schematic using the wiring tools to join all the components. Components can be placed according to user as long as all the connections are made.



10. Rotate components as per the schematic given.

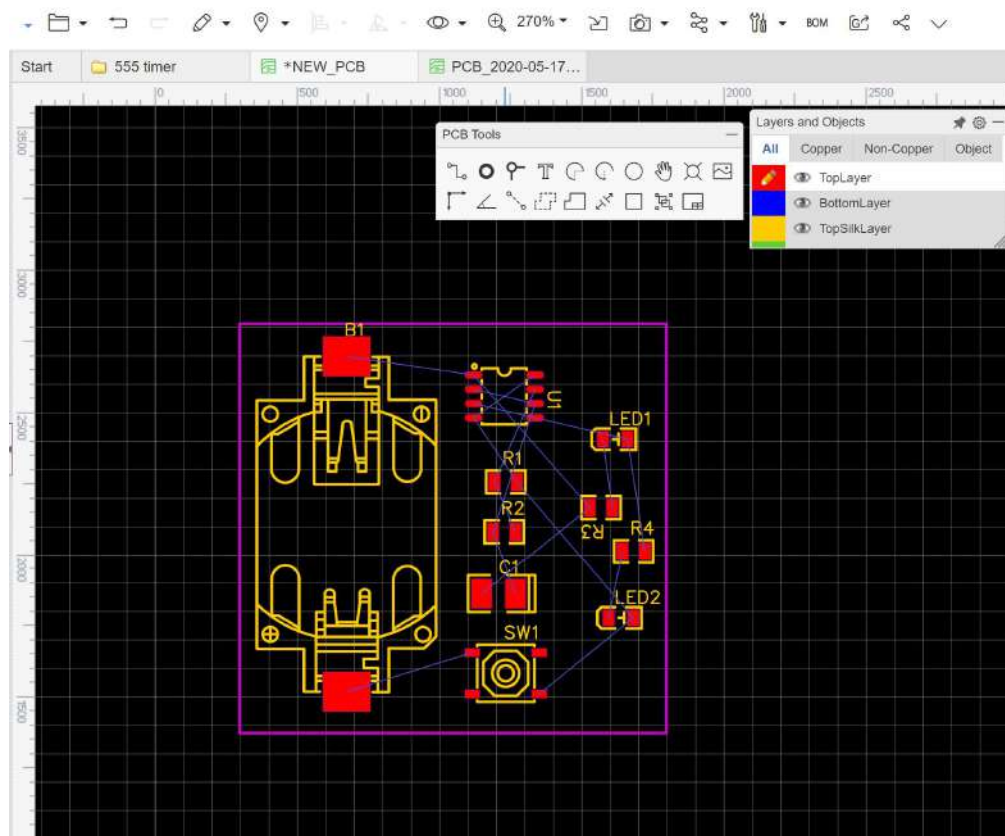


11. Select convert to PCB option as shown in figure.

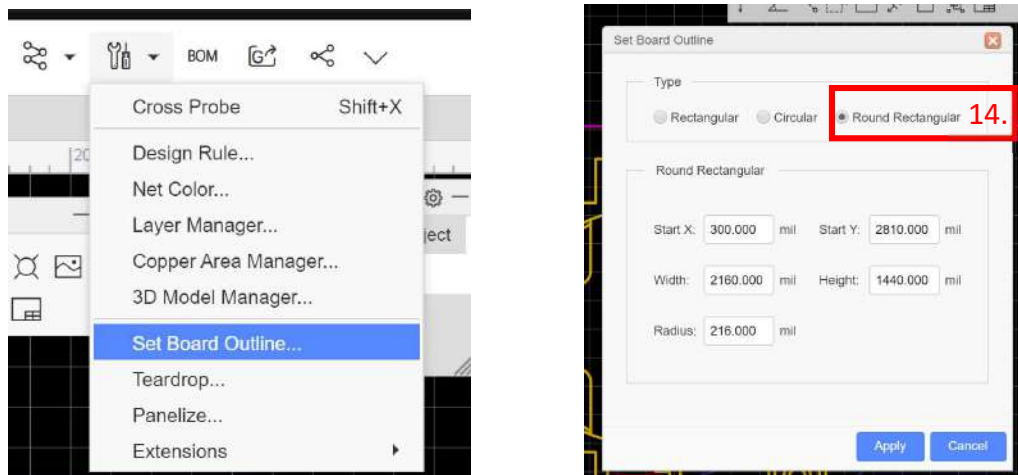


12. Arrange all the components as per requirements and shrink the pink outer border.

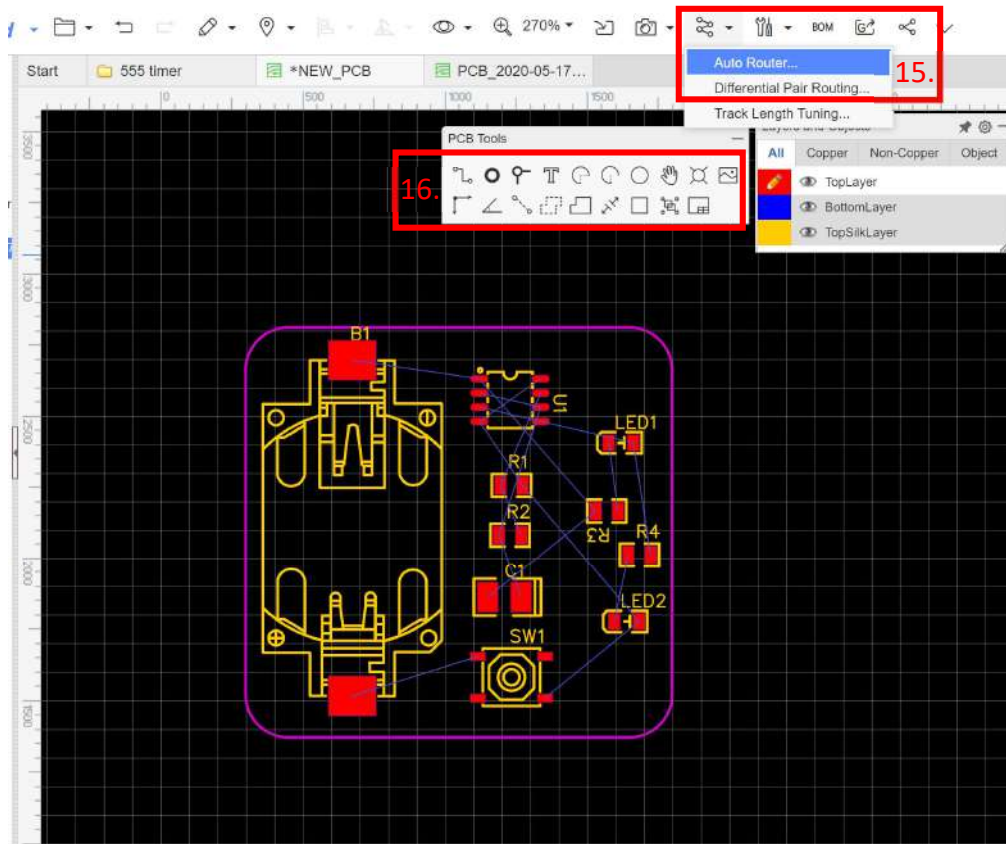




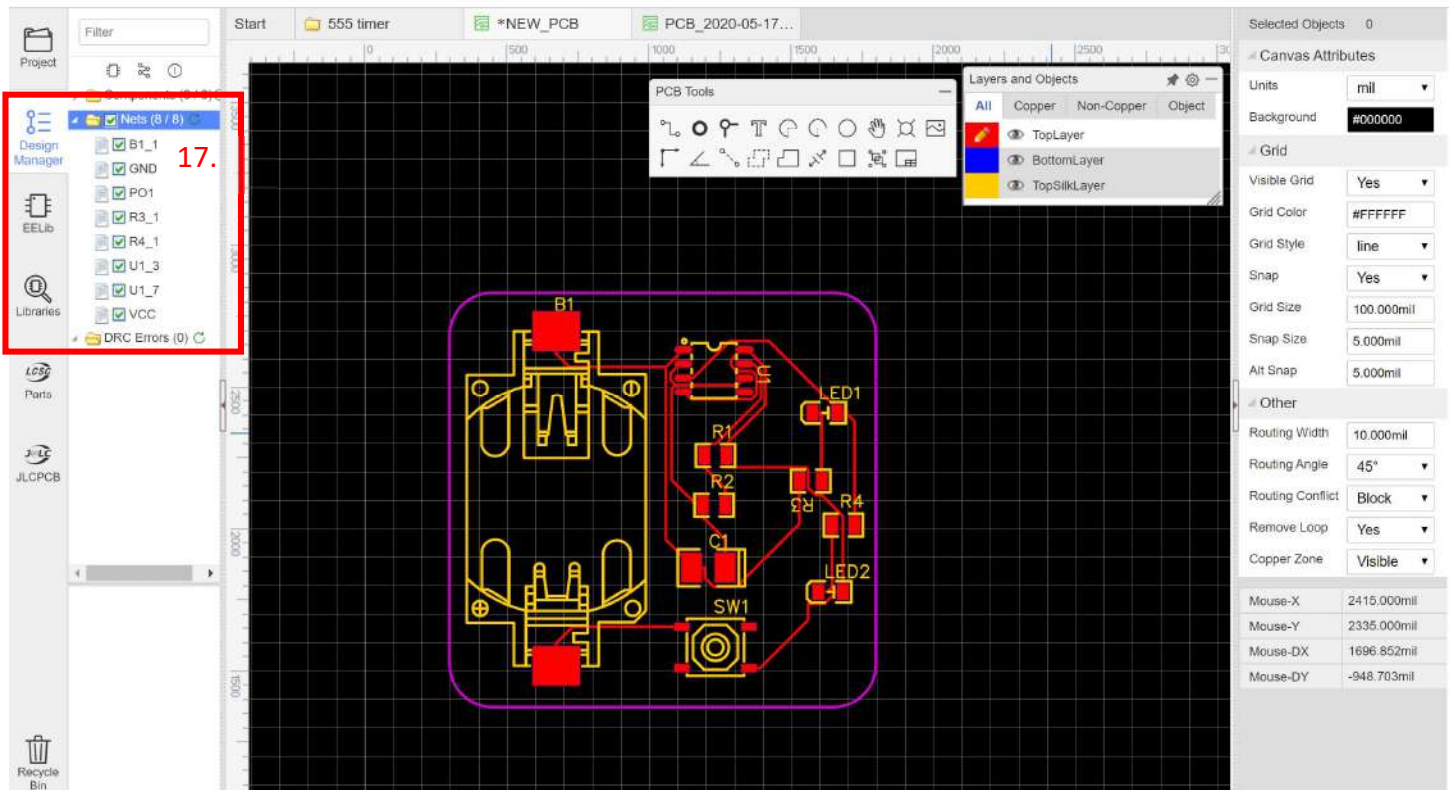
13. Rearrange the outer border of PCB.



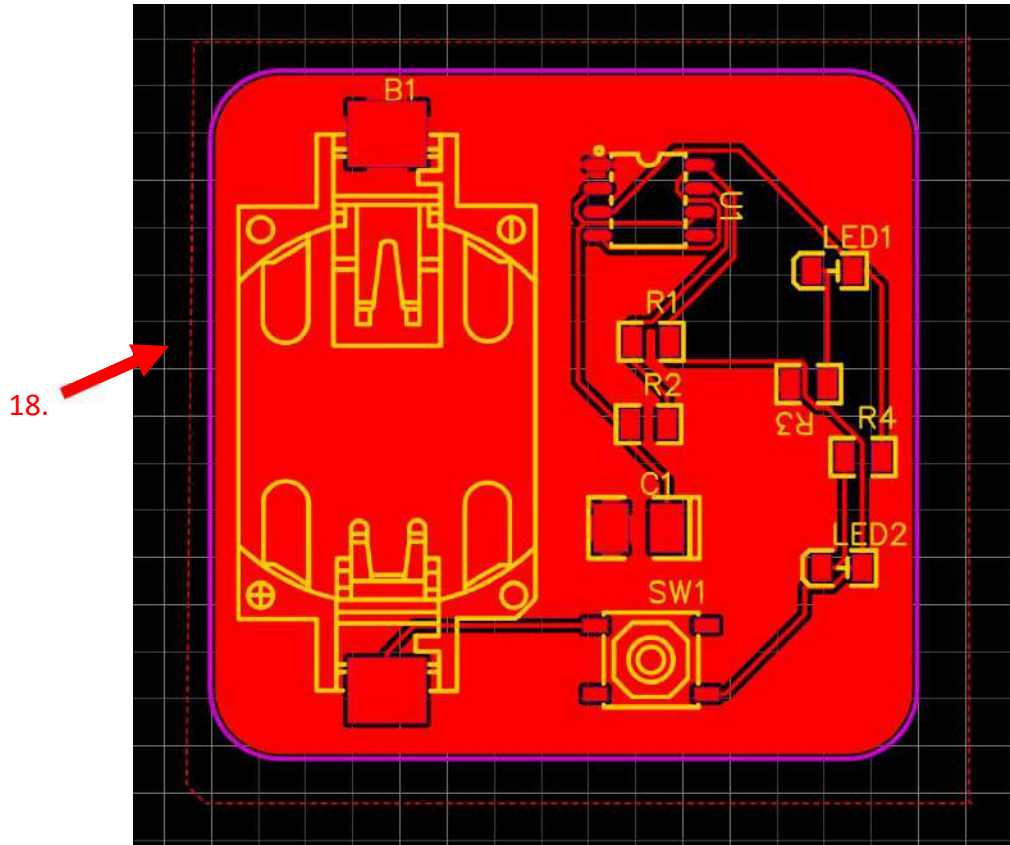
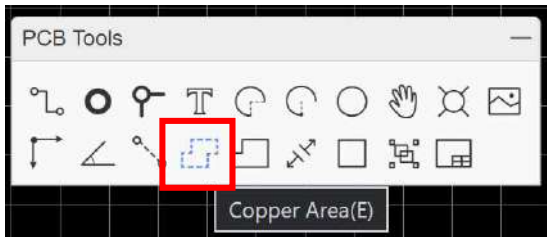
14. Select Set Board Outline, Select Round Rectangular and click apply.



15. Use Auto router feature to make the traces automatically.
16. The PCB can be manually routed as well with PCB Tools.

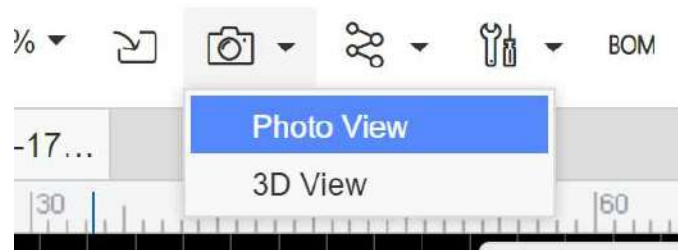


17. Check in Design Manager tab if all the Net points are routed without error. If the nets have problem connecting, try to increase the space between components or move the component to different location.

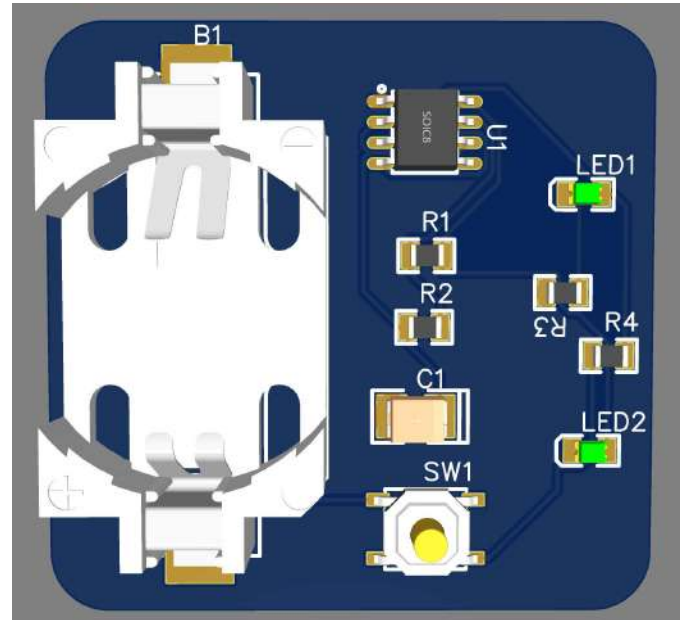
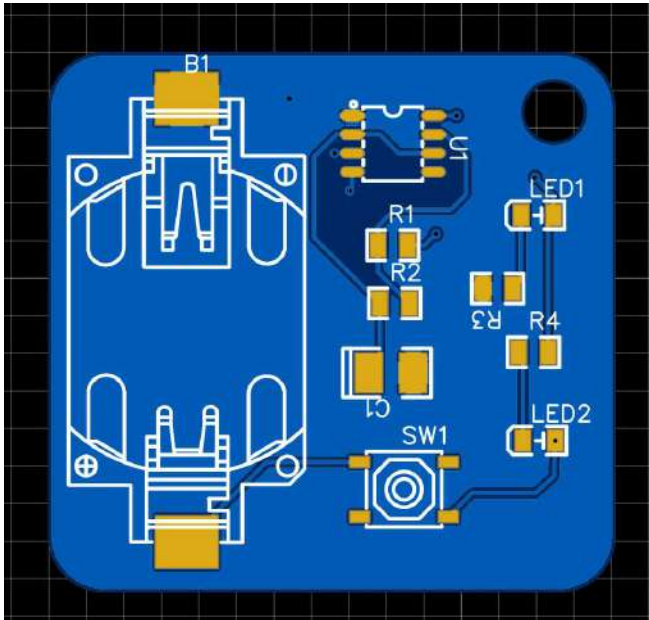


18. Select the copper area tool, select Net as GND and create outer border line around the board. This will fill the unused area with GND. You can also do this for the bottom area.



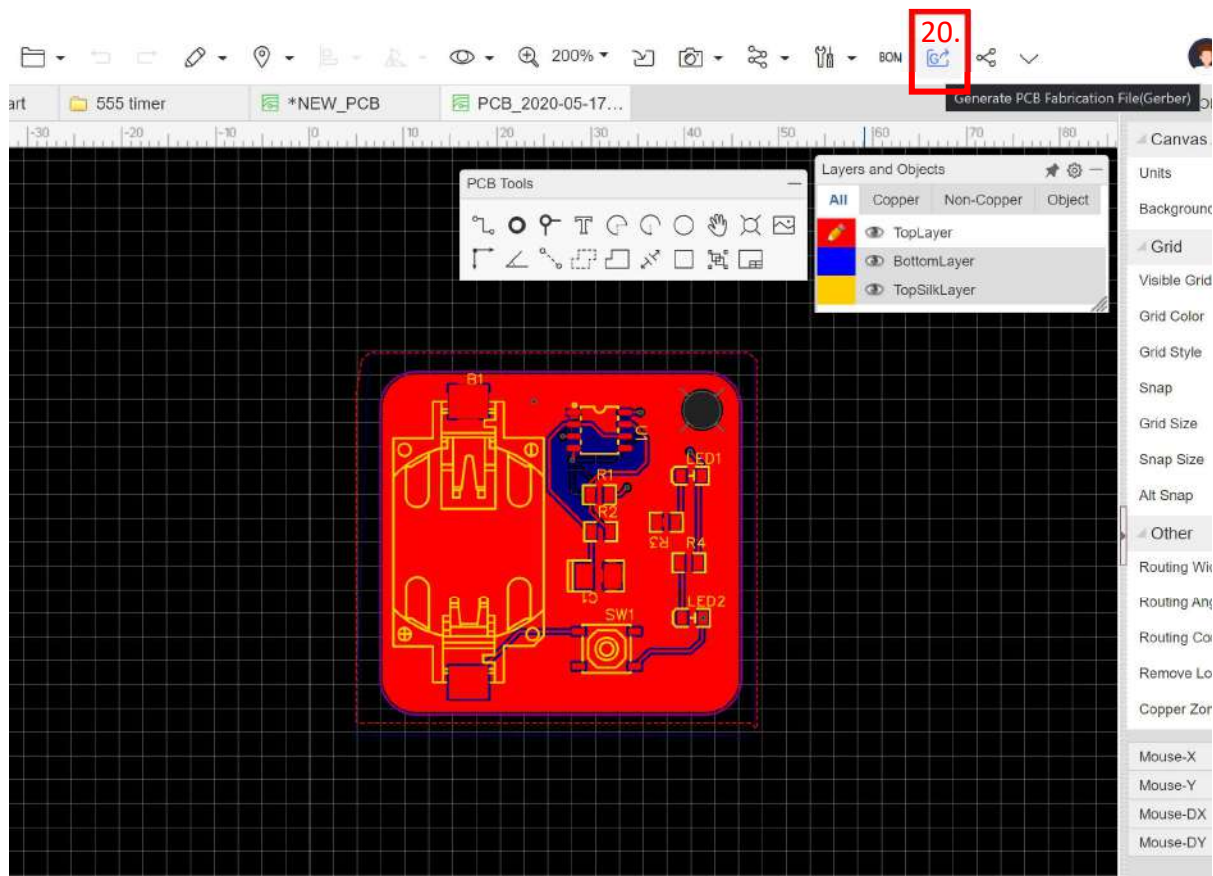


19. Choose Photoview or 3D view to see how the pcb will actually look like.

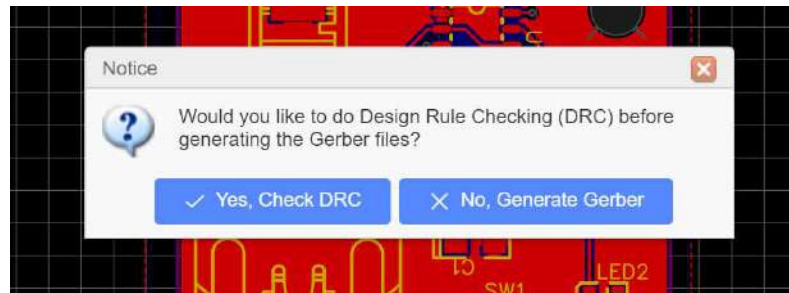


## Ordering PCB

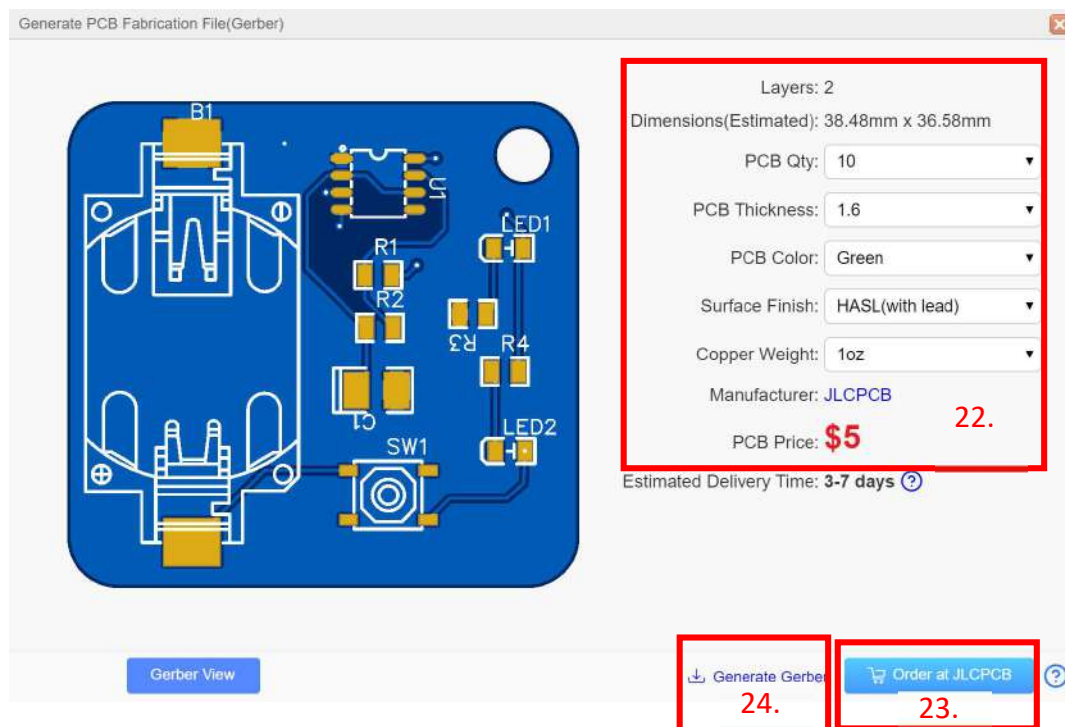
3



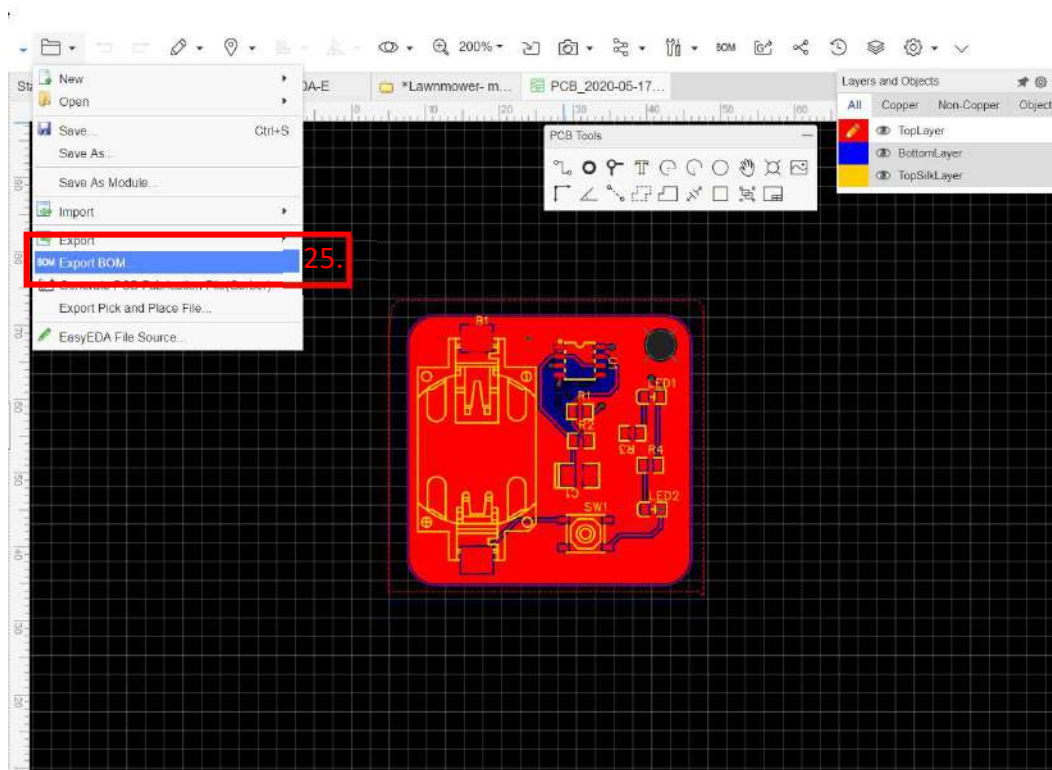
20. Click Generate PCB Fabrication File button.



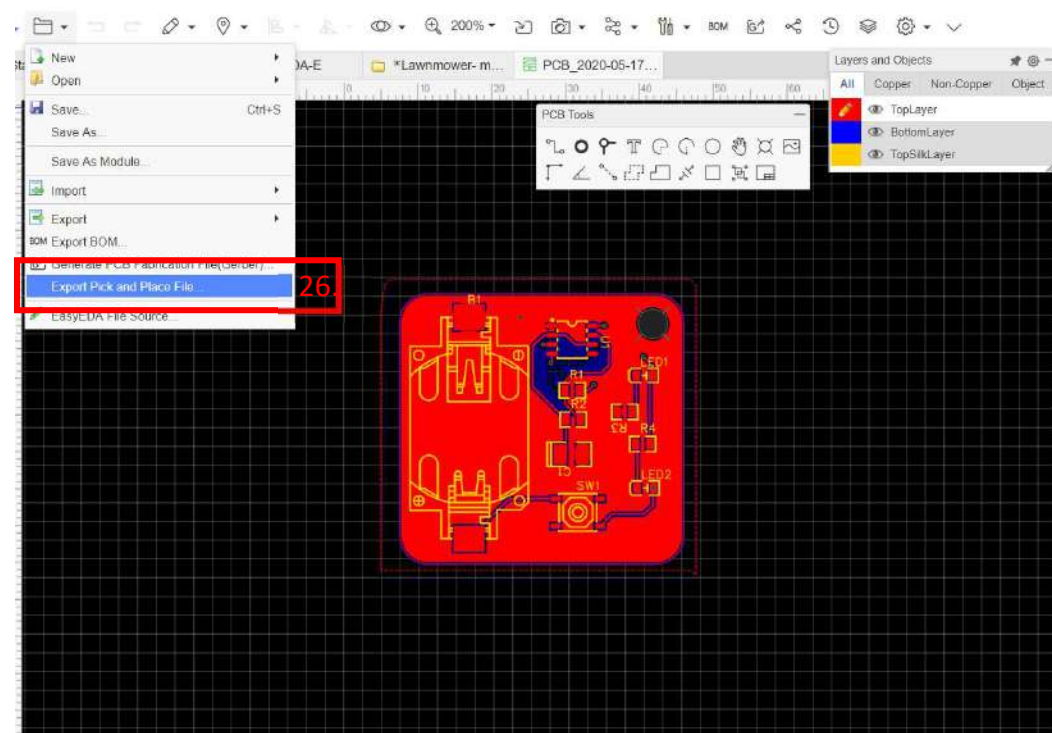
21. Select No to only Generate Gerber.



22. This shows the quantity, price for total quantity and the estimated delievery time.
23. The PCB can be directly ordered from JLCPCB.
24. Gerber files can also be downloaded for manually uploading files on JLCPCB. If you would like fully assembled PCB with all components on it (SMT Service), follow further steps.

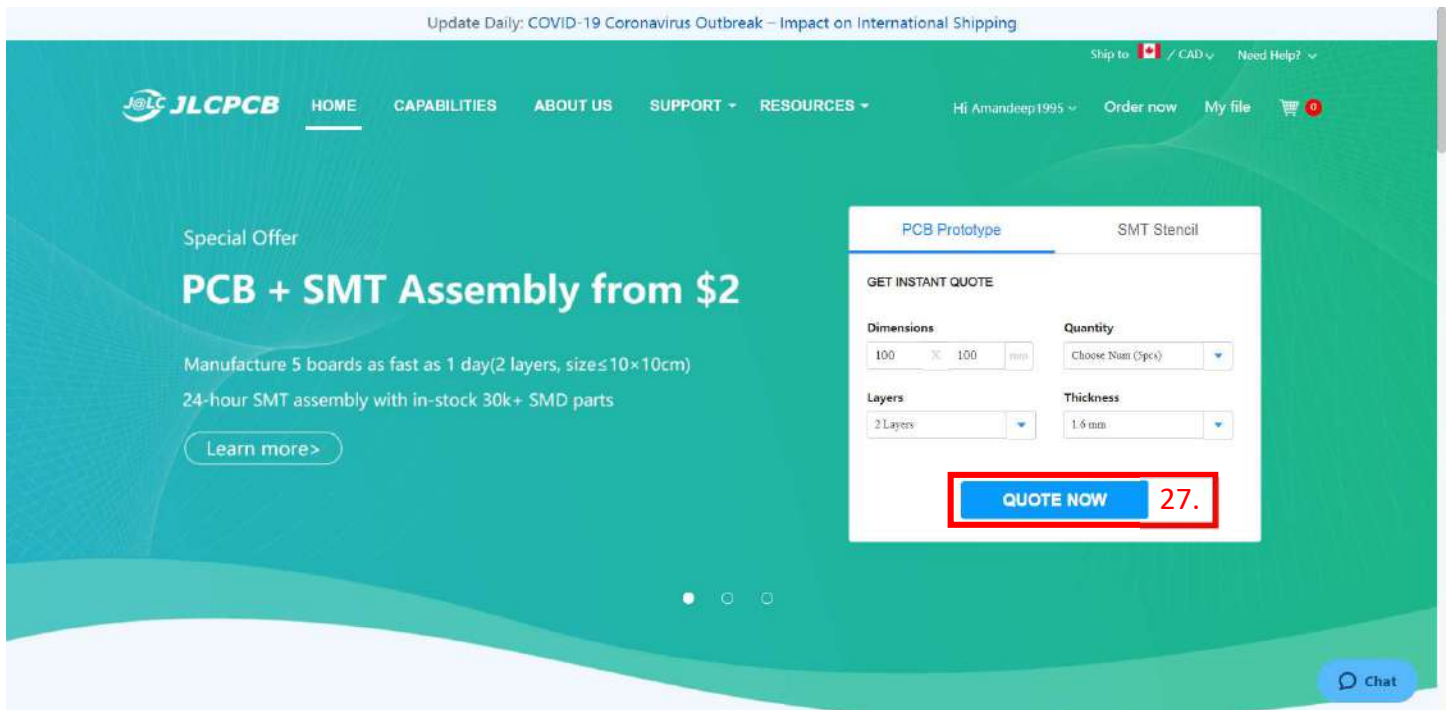


25. Export BOM (Bill of Material) and save for using assembly service (SMT service ) of JLCPCB.

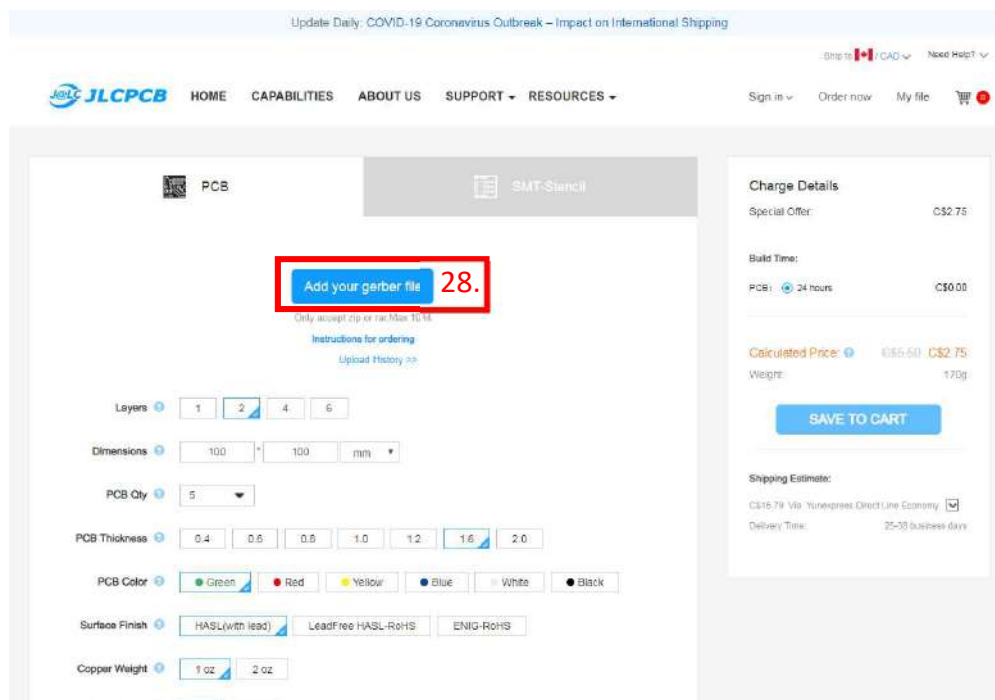


26. Export Pick and Place file and save it for SMT services.





27. Open <https://jlcpcb.com/> and click on Quote now.



28. Upload gerber files downloaded in step 24.

PCB

SMT-Stencil

Detected 2 layer board of 37x38mm(1.44x1.51 inches).

Your upload has finished processing. Enter the project details below and we'll move on to checking all the individual layers to make sure that they're correct.

The gerber viewer is for reference purpose only and may differ from the actual PCB product.

Success this file has been saved to your File Manager

<< Back to Upload File

Layers: 1, 2, 4, 5

Dimensions: 37, 38 mm

PCB Qty: 5

PCB Thickness: 0.4, 0.6, 0.8, 1.0, 1.2, 1.6, 2.0

PCB Color: Green, Red, Yellow, Blue, White, Black

Charge Details

Special Offer: C\$2.75

Build Time: 24 hours C\$0.00

Calculated Price: C\$2.75

Weight: 20g

SAVE TO CART

Shipping Estimate: C\$13.15 Via Yunexpress Direct Line Economy Delivery Time: 25-30 business days

29. 2D image of the PCB can be seen and reviewed, you can order only PCB without any components soldered on it at this point.

SMT Assembly

Free SMT Assembly for your PCB order

Only accept single sided placement, we recommend you choose the side which has more SMD parts.

The parts that are not in JLCPCB SMT Parts Library won't be placed on your board.

The order panelized by v-cut can not be made with SMT assembly.

Assemble top side

Assemble bottom side

SMT QTY: 5, 2

Tooling holes: Added by Customer, Added by JLCPCB

Confirm

Available PCB Specs for SMT Assembly:

Layer: 2-4 Layer Qty: 450pcs

Thickness: 1.6mm/0.5mm/0.8mm Panel: Green Panel: White

Charge Details

Special Offer: C\$2.75

SMT Price: Setup Fee C\$9.63, Stencil C\$2.06, Panel C\$0.00, Components, Extended components for, Assembly

Build Time: PCB: 1-2 days C\$0.00, SMT: 48 hours

Calculated Price: C\$14.45

Weight: 20g

NEXT

Shipping Estimate: C\$13.15 Via Yunexpress Direct Line Economy Delivery Time: 25-30 business days

30. Click on SMT Assembly.
31. Choose Assemble on top side.
32. Click confirm to go further.

Update Daily: COVID-19 Coronavirus Outbreak – Impact on International Shipping

Ship to / CAD Need Help?

**HOME** **CAPABILITIES** **ABOUT US** **SUPPORT** **RESOURCES** Hi Amandeep1... Order now My file

PCB Upload BOM/CPL Select Parts Quote

**33.**

**Add BOM File**  
View Sample BOM

**Add CPL File**  
View Sample CPL

\*Your boards will be assembled by your uploaded files. When you have your PCB panelized, please do remember to upload the complete BOM/CPL files of your PCB panel.  
Not sure where to start? Check our [SMT FAQs page](#)

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33. Upload files downloaded in step 25 and 26 and click next.

Total 7 parts detected, of which 7 parts to be confirmed, 0 parts not selected.

Uploaded BOM Data			Review Matched Parts			
Designator	Name	Footprint	Matched Part Detail	Qty	Unit Price	Operate
SW1	TS-1187A-C-G-A	SW-SMD_4P-L5.1-W5.1-P3.70-L56.4	TS-1187A-C-G-B SMD-SW-4_5.1x5.1x3.3 <a href="#">C316893</a>	1	C\$0.0550	<span>confirmed</span>
B1	CR2032-B5-6-1	BAT-TH_CR2032-B5-6-1	CR2032-B5-6-1 SMD-BAT-CR2032-B5-6-1 <a href="#">C370377</a>	1	C\$0.1770	<span>confirmed</span>
R3,R4	100	R0805	96.3KQ(9532) ±1% 0805 <a href="#">C175973</a>	2	C\$0.0052	<span>confirmed</span>
R1,R2	100K	R0805	100K(100K) ±0.1% ±25P 0805 <a href="#">C346735</a>	2	C\$0.4109	<span>confirmed</span>
LED1,LED2	17-21/T10-CP2R1TY/3T	LED0805-RD	LED_XT_B_Jv=57-140 LED_0805 <a href="#">C83560</a>	2	C\$0.0567	<span>confirmed</span>
C1	10uF	CAP-SMD_L3.5-W2.8-R-RD	10uF(106) ±10% 25V CASE-B_3528 <a href="#">C161582</a>	1	C\$0.1745	<span>confirmed</span>
U1	LMC355CMX/NOPB	SOIC-6_L4.9-W3.9-P1.27-L56.0-BL	LMC355CMX/NOPB SOIC-6_3.9x4.9x1.27P <a href="#">C10763</a>	1	C\$0.4850	<span>confirmed</span>

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34. Confirm all the components and click next.

PCB
Upload BOM/CPL
Select Parts

### Review Parts Placement

The parts placement is for reference purpose only. If you are sure the rotation and polarity of your design are correct, you can omit the preview and continue placing your order.

Selected Parts(7 items)

Part Detail	Selected By	Designator	Price
Uniroyal Elec 0805V8P6032T6E			Qty: 5*2

### Charge Details

Special Offer: C\$2.75

**SMT Price:**

Setup fee: C\$9.03

Stencil: C\$2.06

Panel: C\$0.00

Components: C\$15.04

Extended components fee: C\$28.00

Assembly: C\$0.00

**Build Time:**

PCB: 1-2 days C\$0.00

SMT: 48 hours

**Total Price: C\$58.39**

Weight: 39.55g

**SAVE TO CART**

By placing your order, pls read [the Terms and Conditions of JLCPCB SMT Service](#).

35. A 3D view will be displayed of the PCB, orientation of components in the display might be wrong but it will be correct in the actual ordered PCB. Save to cart and order it with your shipping details.



## Contact Information

Contact us for any information at [makerspace@uwindsor.ca](mailto:makerspace@uwindsor.ca)

Website: [www.epicentreuwindsor.ca](http://www.epicentreuwindsor.ca)

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