

AUTODESK FUSION3 60

Fusion360 Schematic Design Tutorial

<https://www.youtube.com/watch?v=lqwHkB9lsUo>

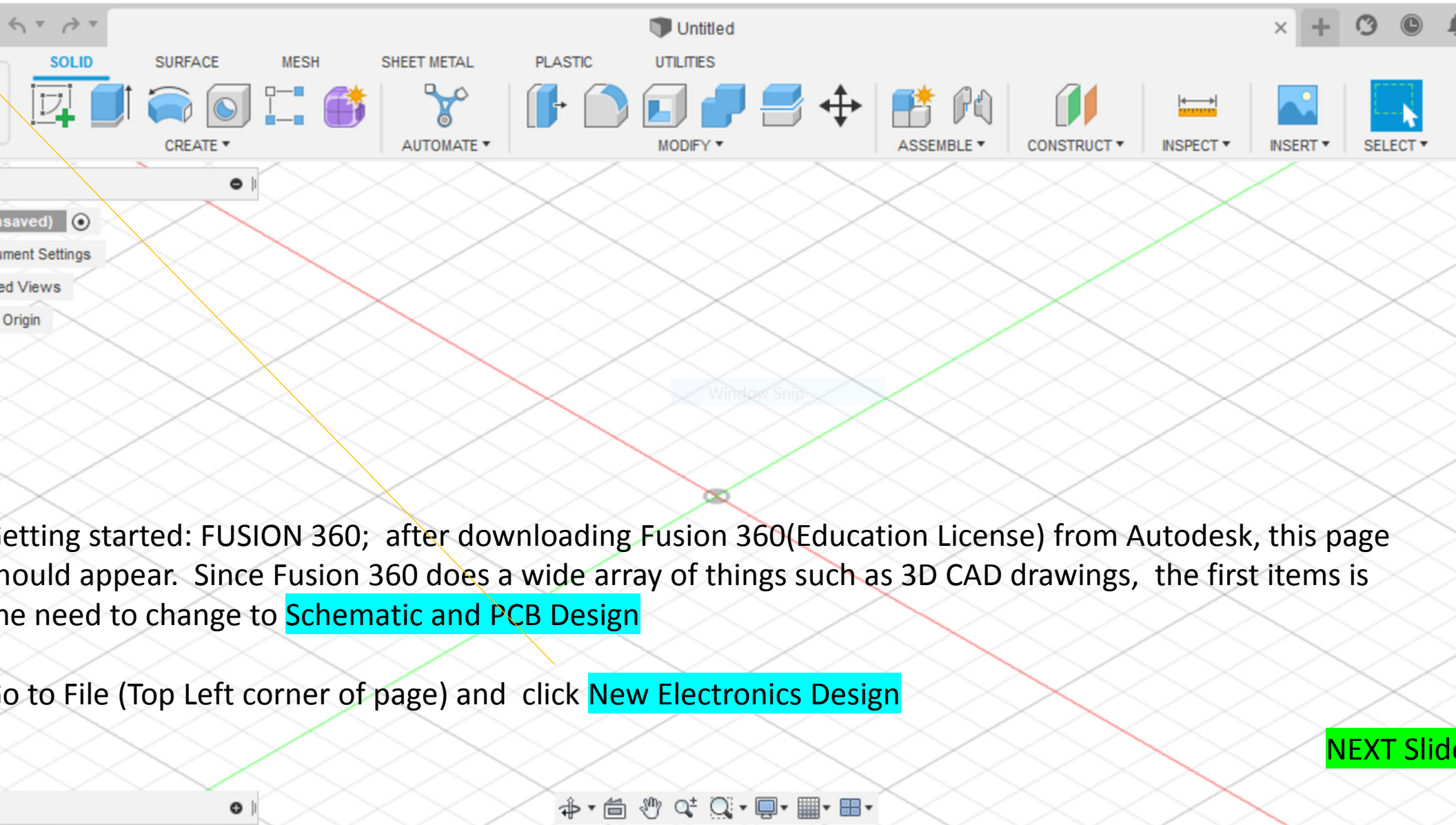
Fusion360 PCB Design Tutorial

<https://www.youtube.com/watch?v=VZZBEocoYDA>

Fusion 360 is more advanced than Upverter, with the extra and more advanced libraries it has a higher level of complexity.

Without watching the getting started Tutorials it will be difficult to create a Schematic and then the PCB design.

There are many more videos on Youtube such as
<https://www.youtube.com/watch?v=lqwHkB9lsUo>



Getting started: FUSION 360; after downloading Fusion 360(Education License) from Autodesk, this page should appear. Since Fusion 360 does a wide array of things such as 3D CAD drawings, the first items is the need to change to **Schematic and PCB Design**

Go to File (Top Left corner of page) and click **New Electronics Design**

NEXT Slide

Untitled

Untitled

Name: Untitled

This page opens up to start a schematic

Rectangular Snip

Work in millimeters or inches?

Make sure to use a mouse

Take the time to watch the tutorials

Add a part

QUICK SETUP

1 SETUP
Default Units: in
New documents will use in as their default unit.

2 NAVIGATE & VIEW
Maneuver your model using familiar controls.
CAD Experience: New to CAD

Pan: Mouse icon

Zoom: Mouse icon

Orbit: SHIFT + Mouse icon

3 LEARN BY DOING
Start mastering Fusion 360 with guided tutorials.
START HERE

Close

Edit

https://www.youtube.com/watch?v=jgUZeBiusw&list=PLmA_xUT-8UIL80Xm8Gxz98YNum3I9Glnr

16 Bottom Click or press Slash to activate command line mode

Getting started by George Garcia of Fusion 360

A) Open Library Manager

B) Library Manager shows- use the filters
libraries in Blue are already open

No Components

No Selection

Library Manager

Filter results...

Filters

- Status
 - Not in use
 - In use
- Source
 - Fusion Team
 - Local disk
 - Library.io
- Updates
 - Update available
- Used in
 - In current design

All Managed Folders

875 Results

Library	Folder Name	Version	In Use
19inch	Eagle Pcb	3	<input type="checkbox"/>
40xx	Eagle Pcb	7	<input type="checkbox"/>
41xx	Eagle Pcb	3	<input type="checkbox"/>
45xx	Eagle Pcb	6	<input type="checkbox"/>
52101-101-REV-A_v16	Eagle Pcb	1	<input type="checkbox"/>
74ac-logic	Eagle Pcb	4	<input checked="" type="checkbox"/>
74ttl-din	Eagle Pcb	6	<input checked="" type="checkbox"/>
74xx-eu	Eagle Pcb	5	<input type="checkbox"/>
74xx-little-de	Eagle Pcb	6	<input type="checkbox"/>
74xx-little-us	Eagle Pcb	6	<input type="checkbox"/>
74xx-us	Eagle Pcb	3	<input checked="" type="checkbox"/>
751xx	Eagle Pcb	6	<input type="checkbox"/>
Airquality_Sensor	Eagle Pcb	1	<input type="checkbox"/>
Audio Connectors	Hetal @pcblayout	1	<input type="checkbox"/>
Audio-Devices	Fusion Electronics	3	<input checked="" type="checkbox"/>
Audio-Devices	Fusion Electronics	3	<input checked="" type="checkbox"/>
Battery Chargers	Hetal @pcblayout	3	<input type="checkbox"/>
Battery Holder	Hetal @pcblayout	1	<input type="checkbox"/>
Battery_Holder	Fusion Electronics	4	<input type="checkbox"/>
Battery_Holder	Fusion Electronics	4	<input checked="" type="checkbox"/>
BeagleBone_Black_...	Eagle Pcb	14	<input type="checkbox"/>
BeagleBone Blue R3	Eagle Pcb	49	<input type="checkbox"/>

https://www.google.com/search?q=Create+your+own+libraries+in+Fusion360&rlz=1C1GCEB_enUS1034US1034&oq=Create+your+own+libraries+in+Fusion360&aqs=chrome..69i57j33i10i160j33i10i299.16607j0j7&sourceid=chrome&ie=UTF-8#fpstate=ive&vld=cid:635269fa,vid:xNIEXCimRSg,st:78

Video to create your own Library by
George Garcia- Fusion 360

Fusion 360 Create Library

Fusion 360: Using Toolholder Solid Models in the CAM Tool
Library - NYC CNC.

...

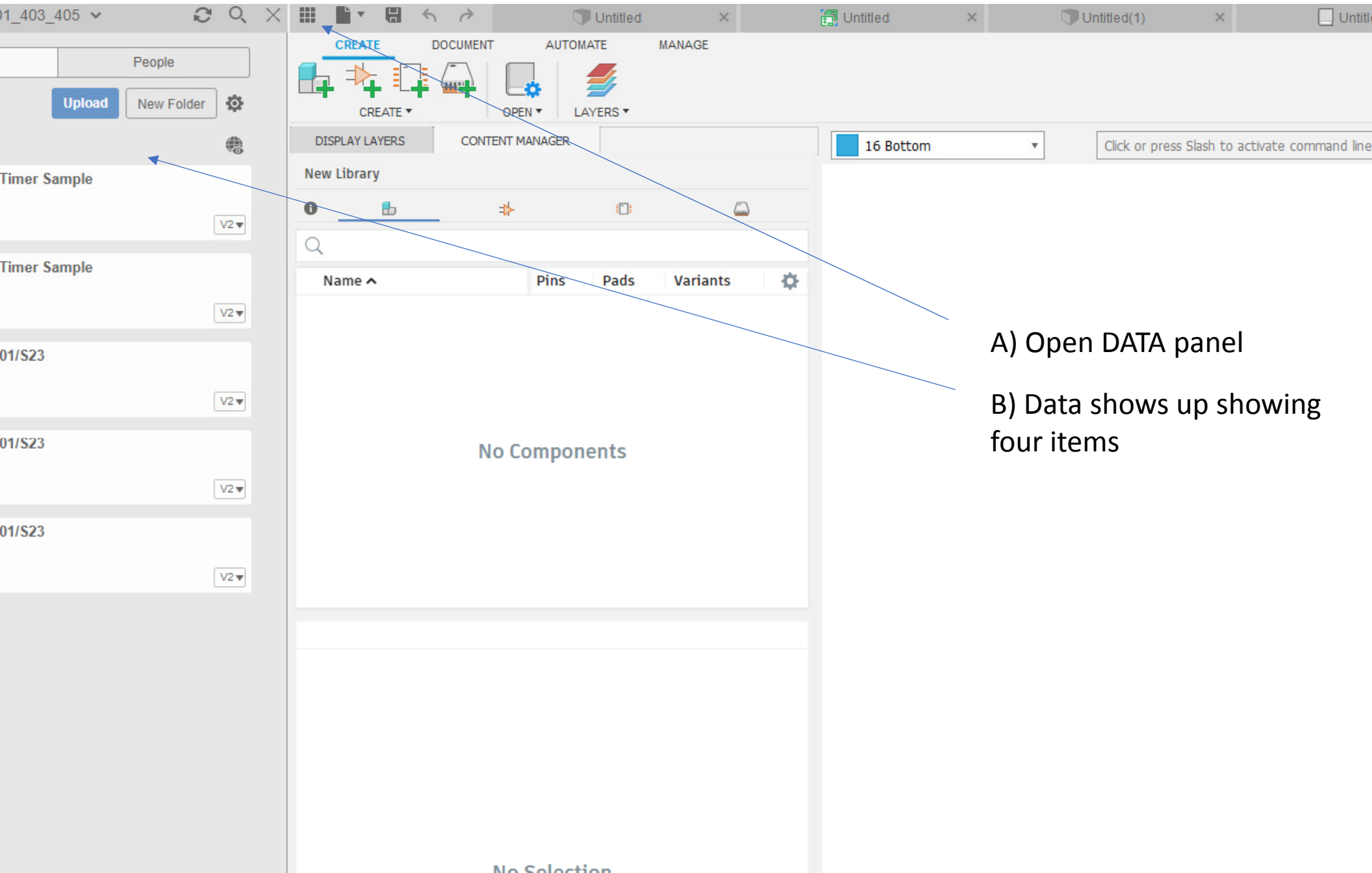
To create a new, custom-defined library:

Go to the Manufacture workspace.

Select Manage -> Tool Library.

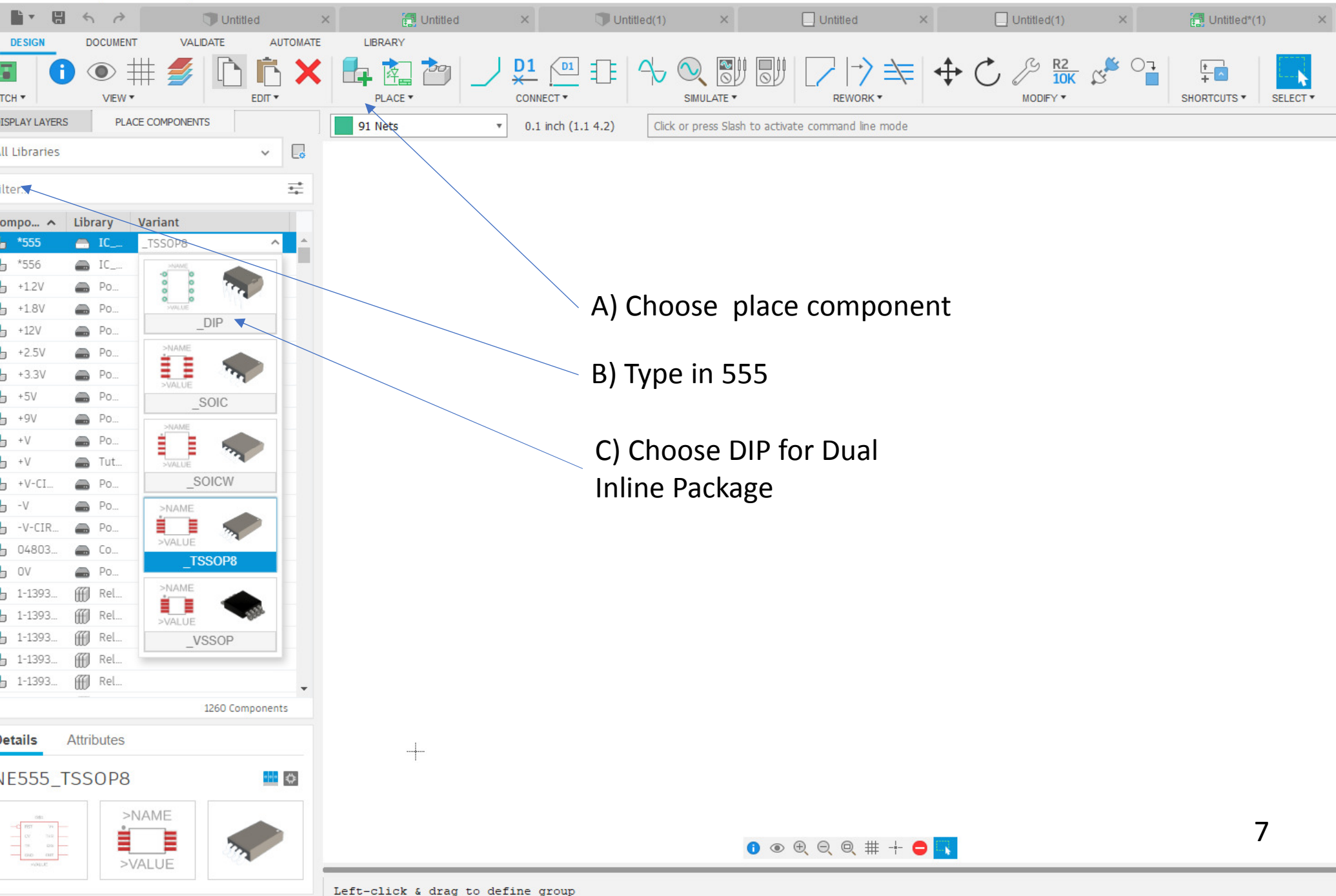
Right-Click on the Local folder.

Select New Tool Library.



A) Open DATA panel

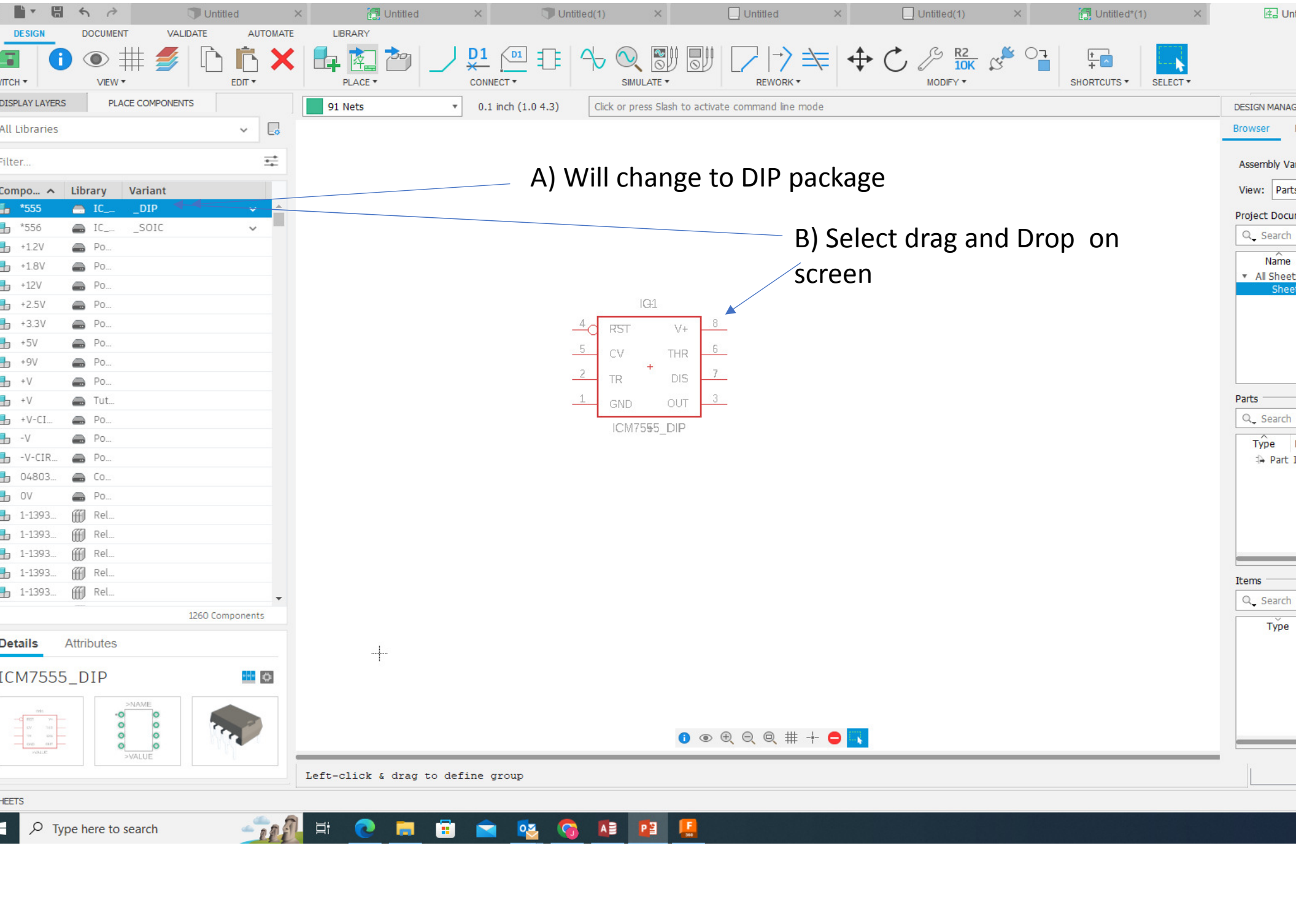
B) Data shows up showing four items



A) Choose place component

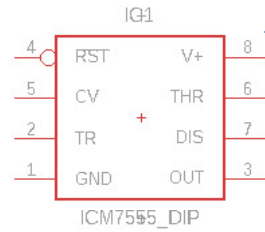
B) Type in 555

C) Choose DIP for Dual Inline Package



A) Will change to DIP package

B) Select drag and Drop on screen



Left-click & drag to define group

DOCUMENT VALIDATE AUTOMATE LIBRARY

VIEW EDIT PLACE CONNECT SIMULATE REWORK MODIFY SHORTCUTS SELECT

91 Nets 0.1 inch (0.2 4.2) Click or press Slash to activate command line mode

Library Variant

IC... _DIP

IC... _SOIC

Po...

Po...

Po...

Po...

Po...

Po...

Po...

Po...

Tut...

Po...

Po...

Po...

Co...

Po...

Re...

Re...

Re...

Re...

Re...

1260 Components

Attributes

55_DIP

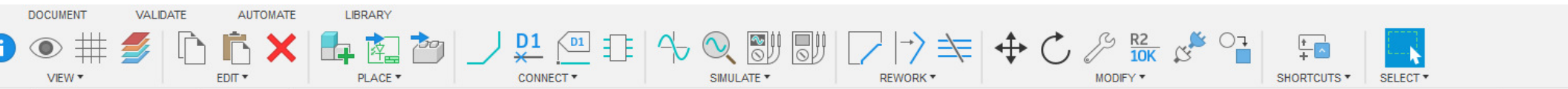
>NAME

>VALUE

Left-click & drag to define group

A) Add resistors in your circuit- Type Resistors

Pin	Label	Connection
4	RST	Red circle
5	CV	Red line
2	TR	Red line
1	GND	Red line
8	V+	Red line
6	THR	Red line
7	DIS	Red line
3	OUT	Red line

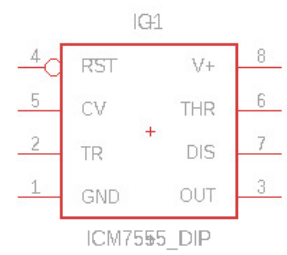


PLACE COMPONENTS

91 Nets 0.1 inch (5.9 3.7) Click or press Slash to activate command line mode

Library	Variant
Res...	
Res...	
Res...	
Res...	
Res...	
Res...	
Res...	
74x...	N
74x...	N
Res...	

- A) Type in resistors
- B) Choose Style- Value is not important at this time



Attributes

5_DIP

>NAME

>VALUE

Left-click & drag to define group

DESIGN MANAGE

Browser

Assembly Vari

View: Parts

Project Docum

Search

Name

All Sheets

Sheet

Parts

Search

Type N

Part IC

Items

Search

Type

The screenshot shows the software interface with the following elements:

- Top Bar:** Includes tabs for 'DESIGN', 'DOCUMENT', 'VALIDATE', 'AUTOMATE', and 'LIBRARY'. Below these are icons for 'SWITCH', 'VIEW', 'EDIT', 'PLACE', 'CONNECT', 'SIMULATE', 'REWORK', 'MODIFY', 'SHORTCUTS', and 'SELECT'.
- Component Library:** A list of components under the 'Resistor' category. The 'AXIAL-7.2MM-PITCH' variant is selected and highlighted in blue. Other variants include 'AXIAL-11.7MM-PITCH', 'CHIP-0402(1005-M...', 'CHIP-0603(1608-M...', 'CHIP-0805(2012-M...', 'CHIP-1206(3216-M...', and 'CHIP-1210(3225-M...'.
- Pinout Diagram:** A diagram for the 'ICM7555_DIP' component. It shows an 8-pin DIP package with the following pin connections:

Pin	Label	Label	Pin
4	RST	V+	8
5	CV	THR	6
2	TR	DIS	7
1	GND	OUT	3
- Annotations:** Three blue arrows point from the text instructions to the software interface:
 - Arrow 1 points to the 'Resistor' dropdown menu.
 - Arrow 2 points to the 'Filter...' text above the component list.
 - Arrow 3 points to the 'AXIAL-7.2MM-PITCH' variant in the list.
- Bottom Bar:** Contains the text 'Left-click & drag to define group' and a set of navigation icons.

A) Choose Resistor

B) Under filter the second selection is through hole

C) Variant is size choose Axial-7.2mm

Never Delete these- always need three

DOCUMENT VALIDATE AUTOMATE LIBRARY

VIEW EDIT PLACE CONNECT SIMULATE REWORK MODIFY SHORTCUTS SELECT

91 Nets 0.1 inch (-0.4 4.3) Click or press Slash to activate command line mode

DESIGN MANAGER

Browser Filter

Assembly Variant: []

View: Parts

Project Documents

Search

Name

All Sheets

Sheet 1/1 She

Parts

Search

Type	Name
Part	IC1 ICM
Part	R1
Part	R2
Part	R3
Part	R4
Part	R5
Part	R6

Items

Search

Type

Left-click & drag to define group

ICM7555_DIP

IC1

4 RST V+ 8

5 CV THR 6

2 TR DIS 7

1 GND OUT 3

R1 R2 R3 R4 R5 R6

R2 10K

>NAME

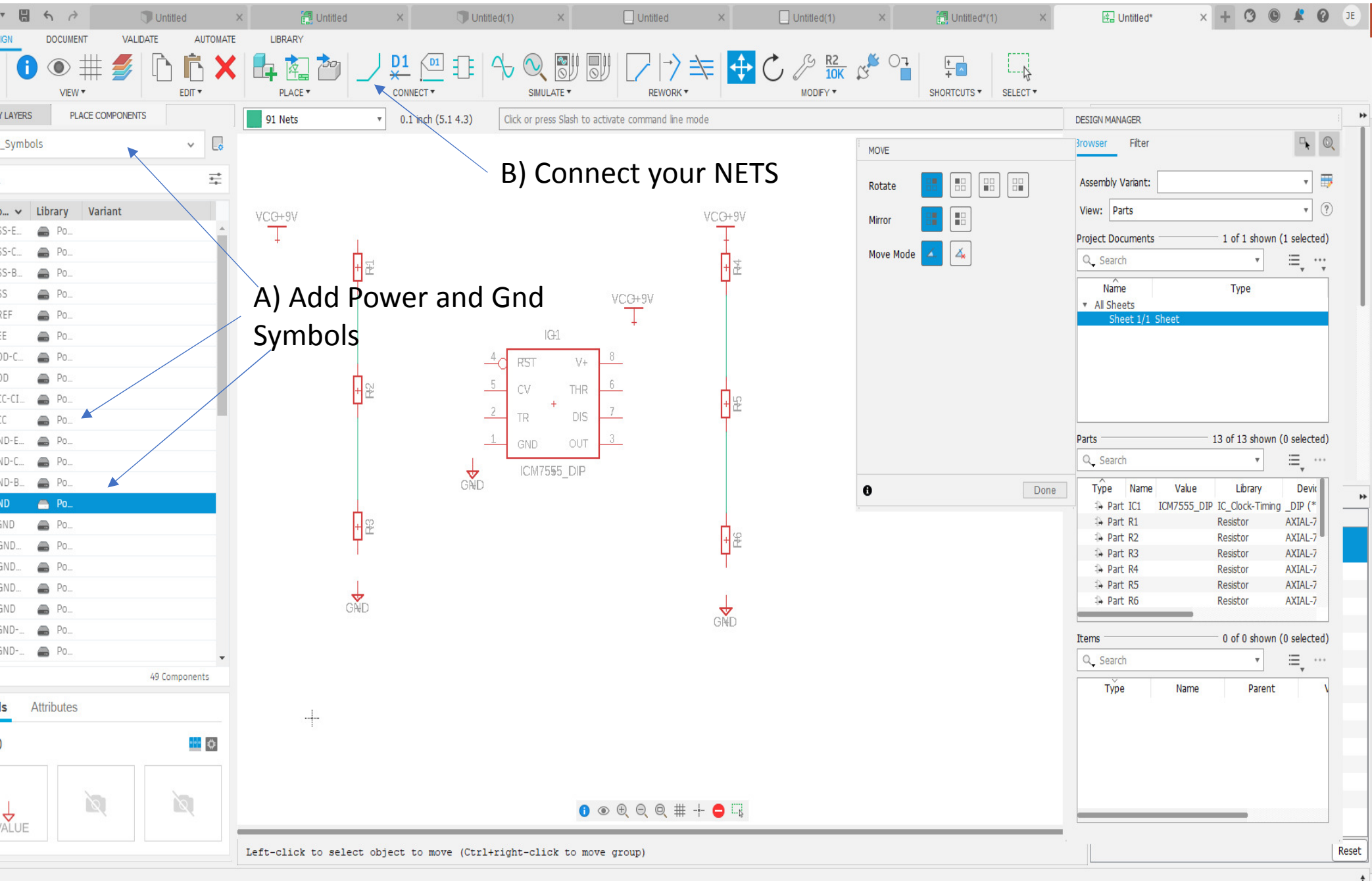
>VALUE

A) Select and insert Resistors wherever required

B) Double right click to rotate components

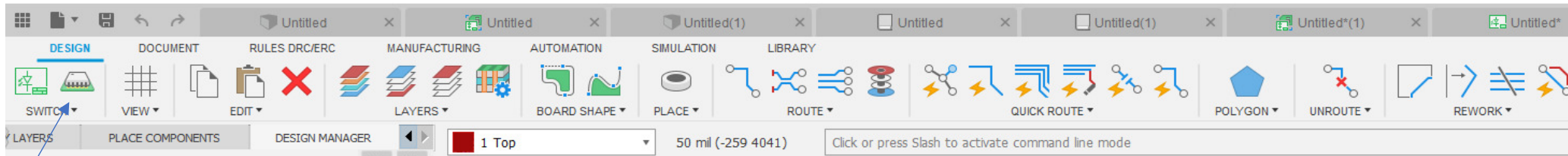
Move Command

Change Value Command



The first Part of PCB Manufacturing is creating a schematic.
Second part is the PCB itself which requires Gerber Files

If your curious what is next, on the next slide look at Design >Switch> Schematic to PCB



Assembly Variant: Default Variant
View: Devices

Device Sets 3 of 3 shown (1 selected)

Search

Device Set

- <All Devices>
- <Bottom Side Devices>
- <Top Side Devices>

Devices 8 of 8 shown (0 selected)

Search

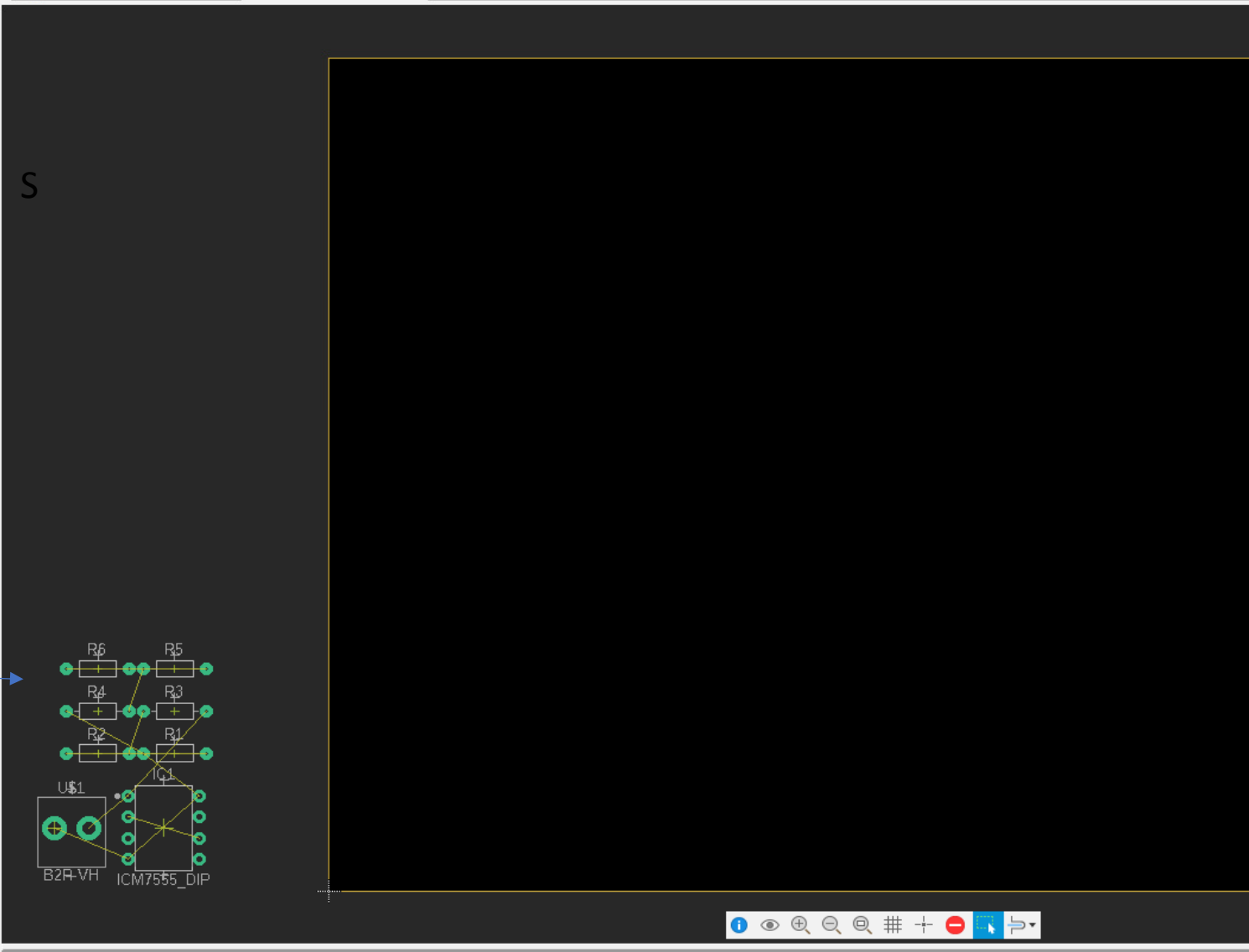
Name	Device	Footprint
IC1	_DIP (*555)	DIP826W53P254L959H508Q8B ICM7555_DIP
R1	AXIAL-7.2MM-PITCH (R)	RESAD724W46L381D1788
R2	AXIAL-7.2MM-PITCH (R)	RESAD724W46L381D1788
R3	AXIAL-7.2MM-PITCH (R)	RESAD724W46L381D1788
R4	AXIAL-7.2MM-PITCH (R)	RESAD724W46L381D1788
R5	AXIAL-7.2MM-PITCH (R)	RESAD724W46L381D1788
R6	AXIAL-7.2MM-PITCH (R)	RESAD724W46L381D1788
U\$1	(B2P-VH)	B2P-VH_396-2N B2P-VH

Items 0 of 0 shown (0 selected)

Search

Type	Name	Signal	Layer
------	------	--------	-------

o Design mode PCB



Left-click & drag to define group

