AUTODESK® INVENTOR® PROFESSIONAL 2016

AUTODESK.

INTRODUCTION

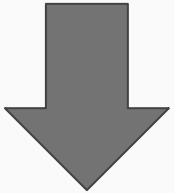
Autodesk Inventor, developed by U.S. based software company **Autodesk**, is a ***computer-aided design*** application for creating 3D digital prototypes used in

- Design
- Visualization
- Simulation of products

GETTING STARTED !!!!

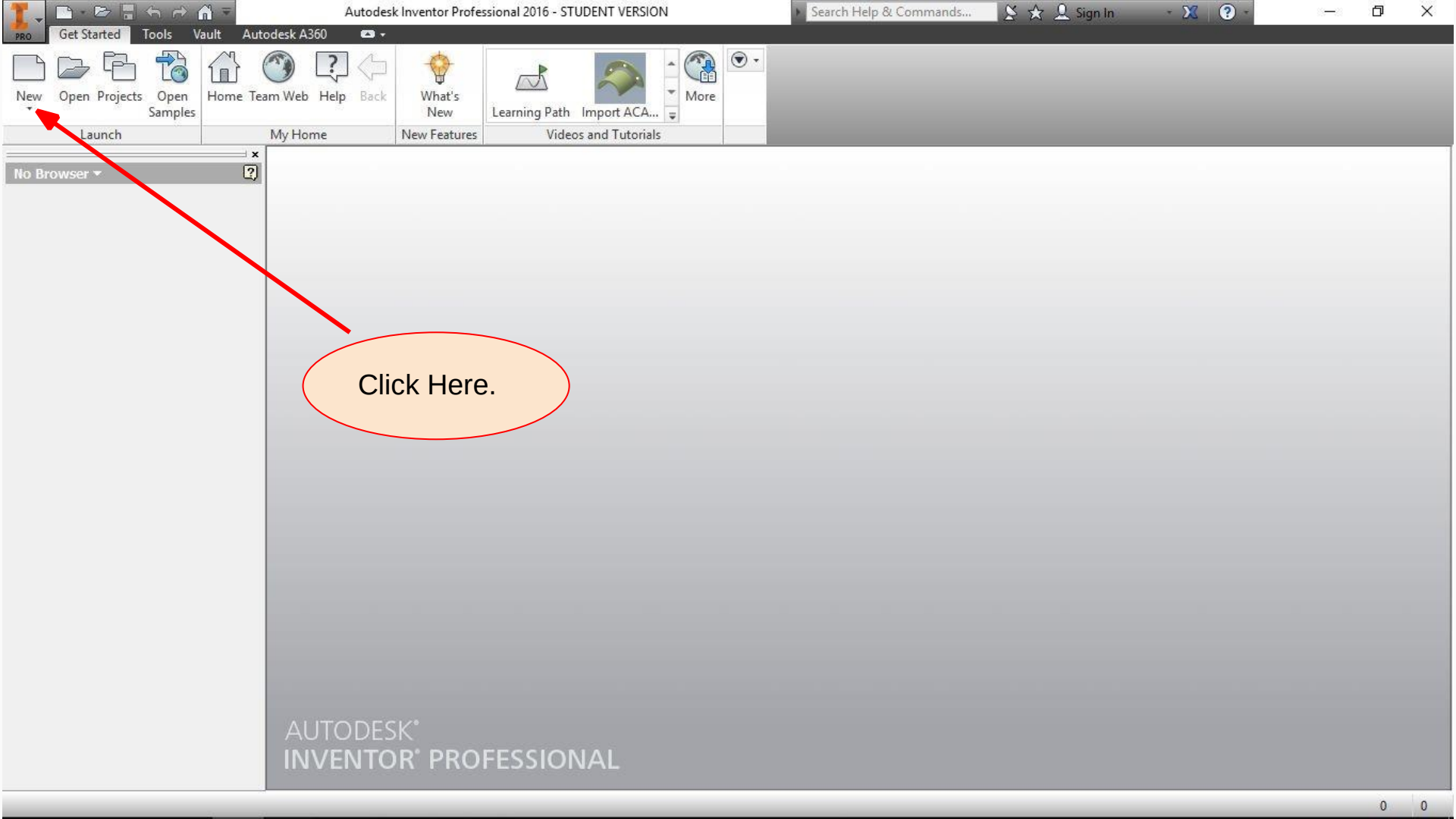
BASIC STRUCTURE

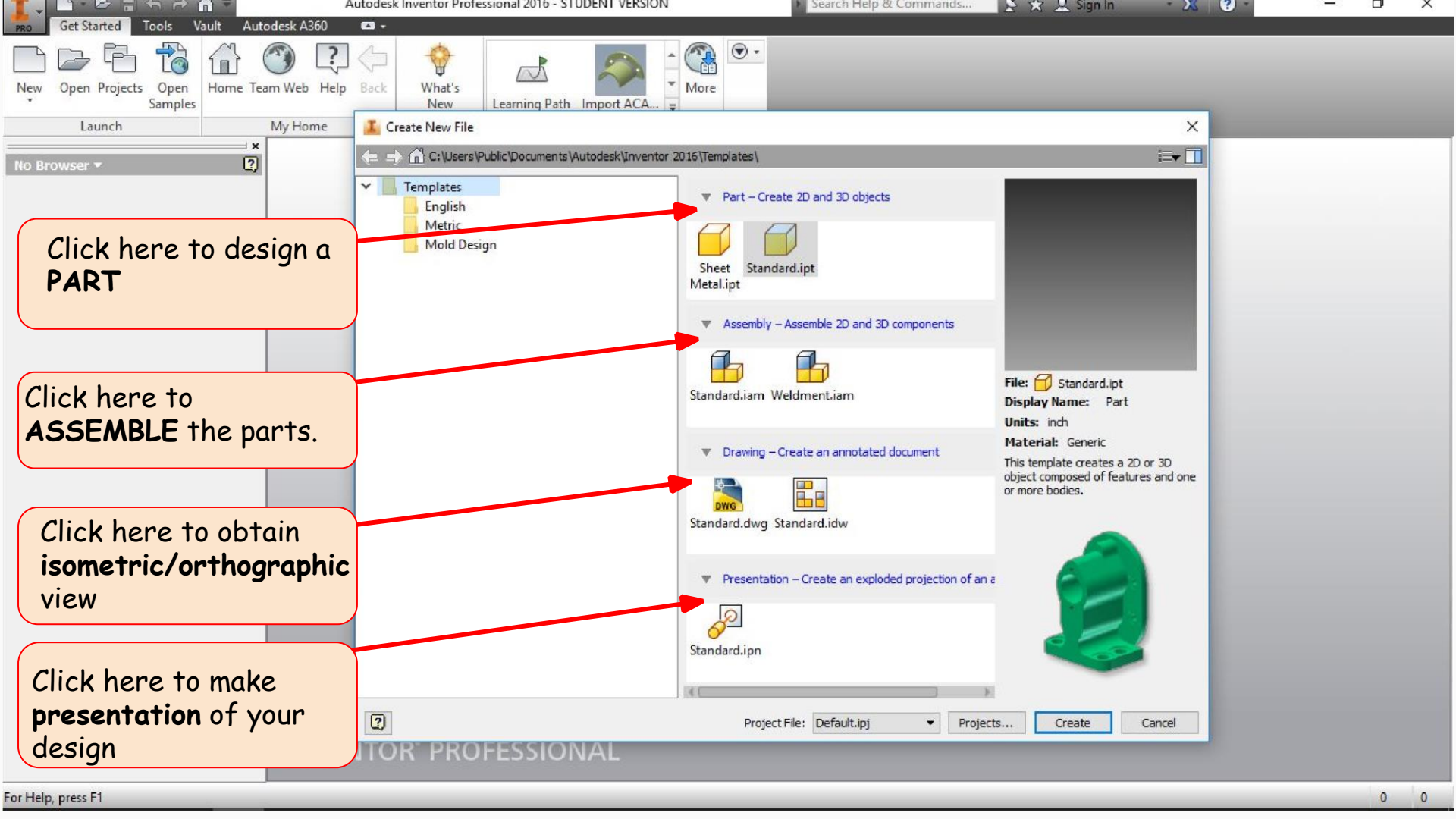
PARTS

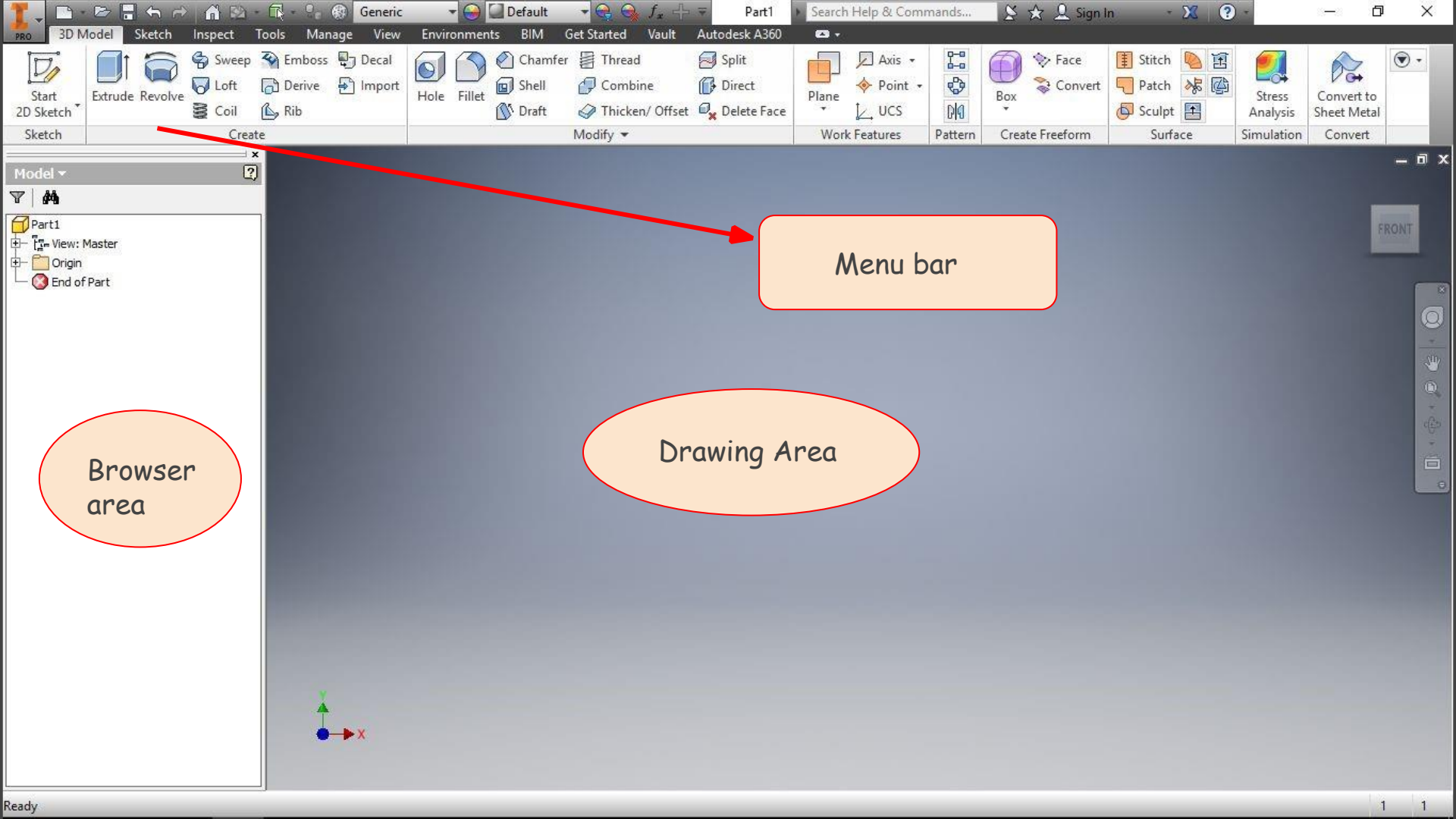


ASSEMBLY

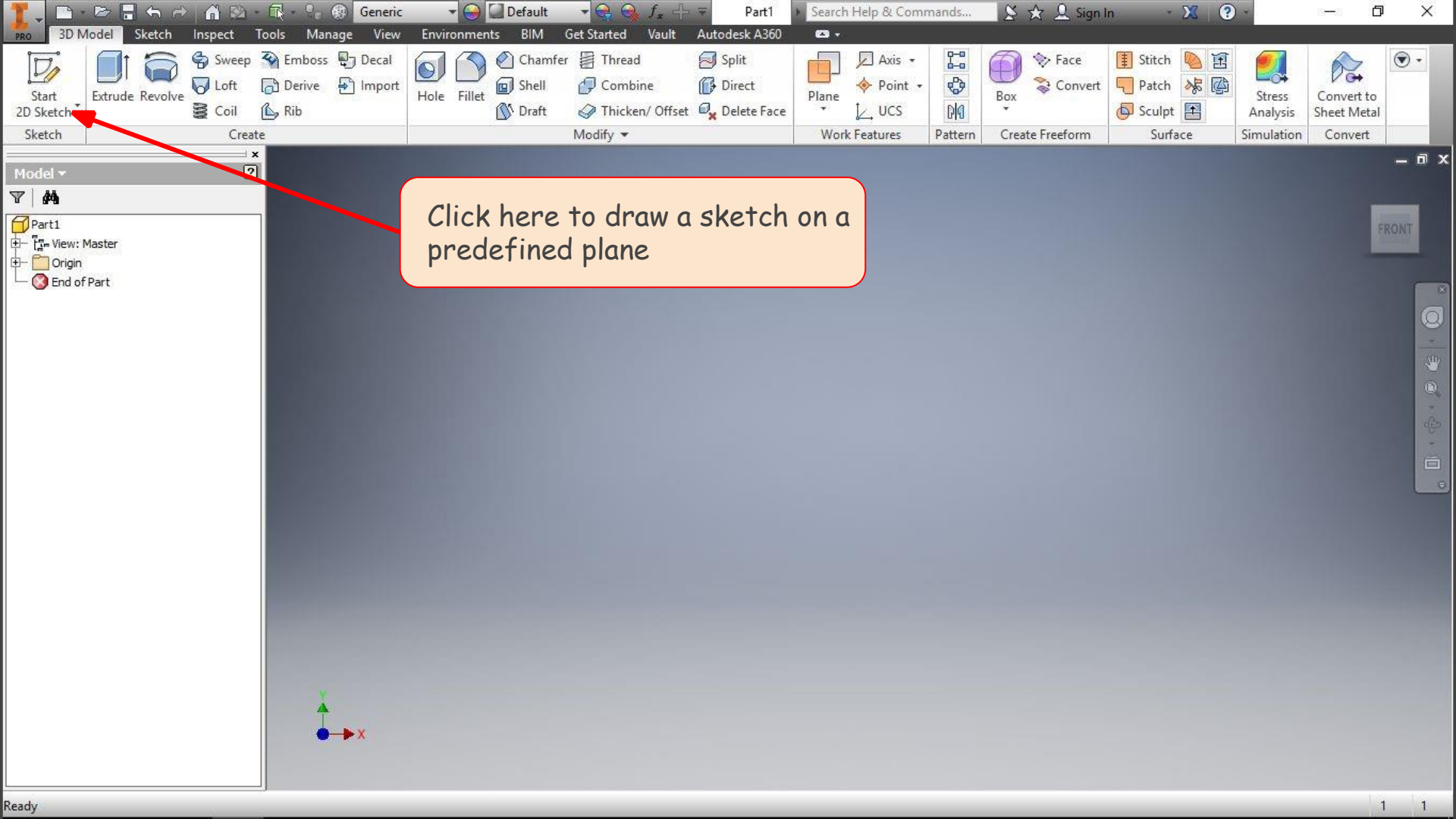
Group of **Parts**, when assembled together with the help of **Joints** and **constraints** , constitute an **Assembly**.


Autodesk Inventor Professional 2016 - STUDENT VERSION
Search Help & Commands...
Sign In
Get Started
Tools
Vault
Autodesk A360
New
Open
Projects
Open Samples
Launch
Home
Team Web
Help
Back
My Home
What's New
New Features
Learning Path
Import ACA...
More
Videos and Tutorials
No Browser
Click Here.
AUTODESK®
INVENTOR® PROFESSIONAL


Click here to design a **PART**
Click here to **ASSEMBLE** the parts.
Click here to obtain **isometric/orthographic** view
Click here to make **presentation** of your design
Create New File
C:\Users\Public\Documents\Autodesk\Inventor 2016\Templates\
Templates
English
Metric
Mold Design
Part – Create 2D and 3D objects
Sheet Metal.ipt
Standard.ipt
Assembly – Assemble 2D and 3D components
Standard.iam
Weldment.iam
Drawing – Create an annotated document
Standard.dwg
Standard.idw
Presentation – Create an exploded projection of an a
Standard.ipn
File: Standard.ipt
Display Name: Part
Units: inch
Material: Generic
This template creates a 2D or 3D object composed of features and one or more bodies.
Project File: Default.ipj
Projects...
Create
Cancel


3D Model
Sketch
Inspect
Tools
Manage
View
Environments
BIM
Get Started
Vault
Autodesk A360
Start 2D Sketch
Extrude
Revolve
Sweep
Loft
Coil
Emboss
Derive
Rib
Decal
Import
Hole
Fillet
Chamfer
Shell
Draft
Thread
Combine
Thicken/ Offset
Split
Direct
Delete Face
Plane
Axis
Point
UCS
Box
Face
Convert
Stitch
Patch
Sculpt
Stress Analysis
Convert to Sheet Metal
Sketch
Create
Modify
Work Features
Pattern
Create Freeform
Surface
Simulation
Convert
Model
Part1
View: Master
Origin
End of Part
FRONT
Menu bar
Browser area
Drawing Area
Ready

LET'S START DRAWING


3D Model
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Fillet
Chamfer
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Thicken/ Offset
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Plane
Axis
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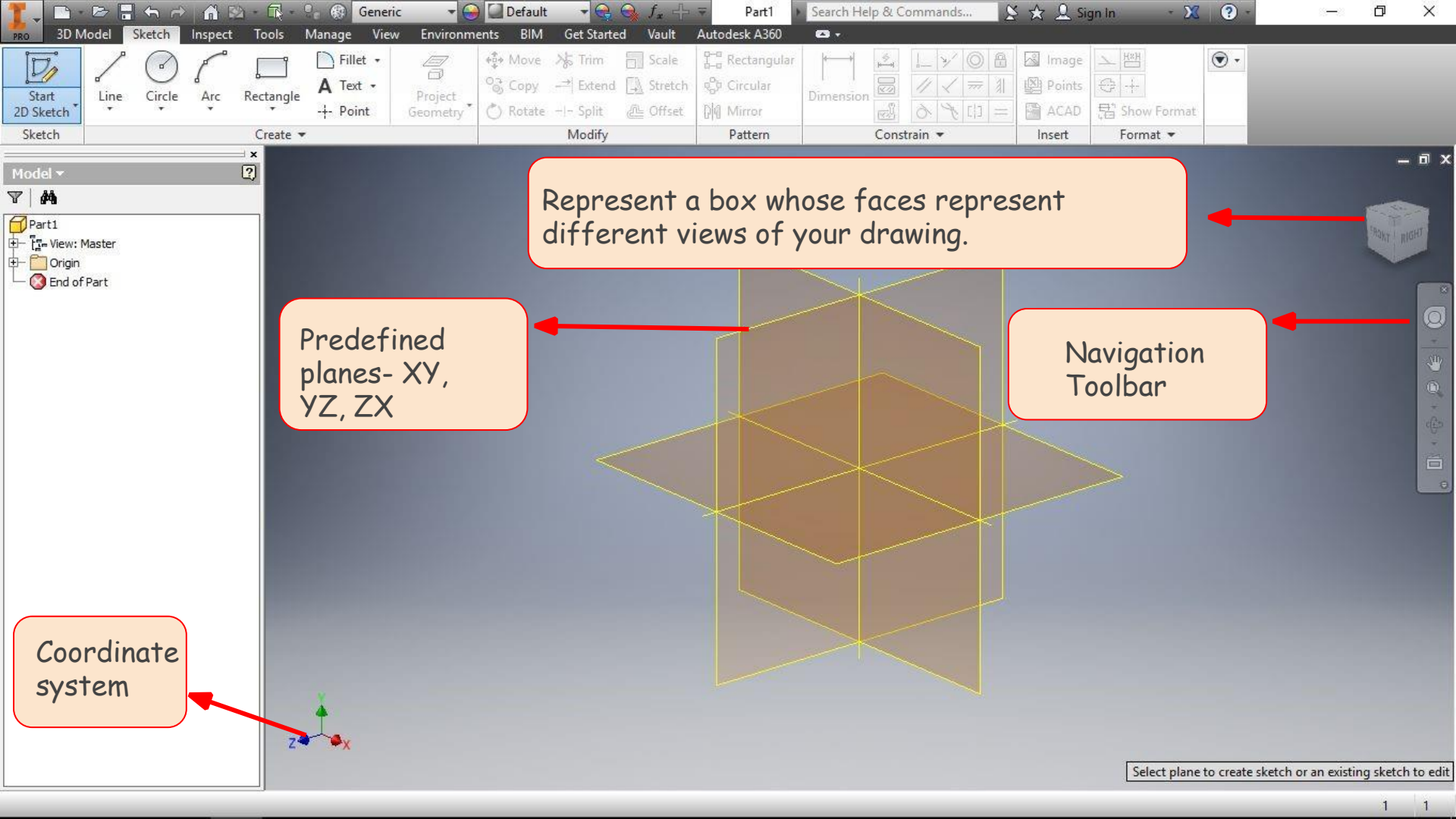
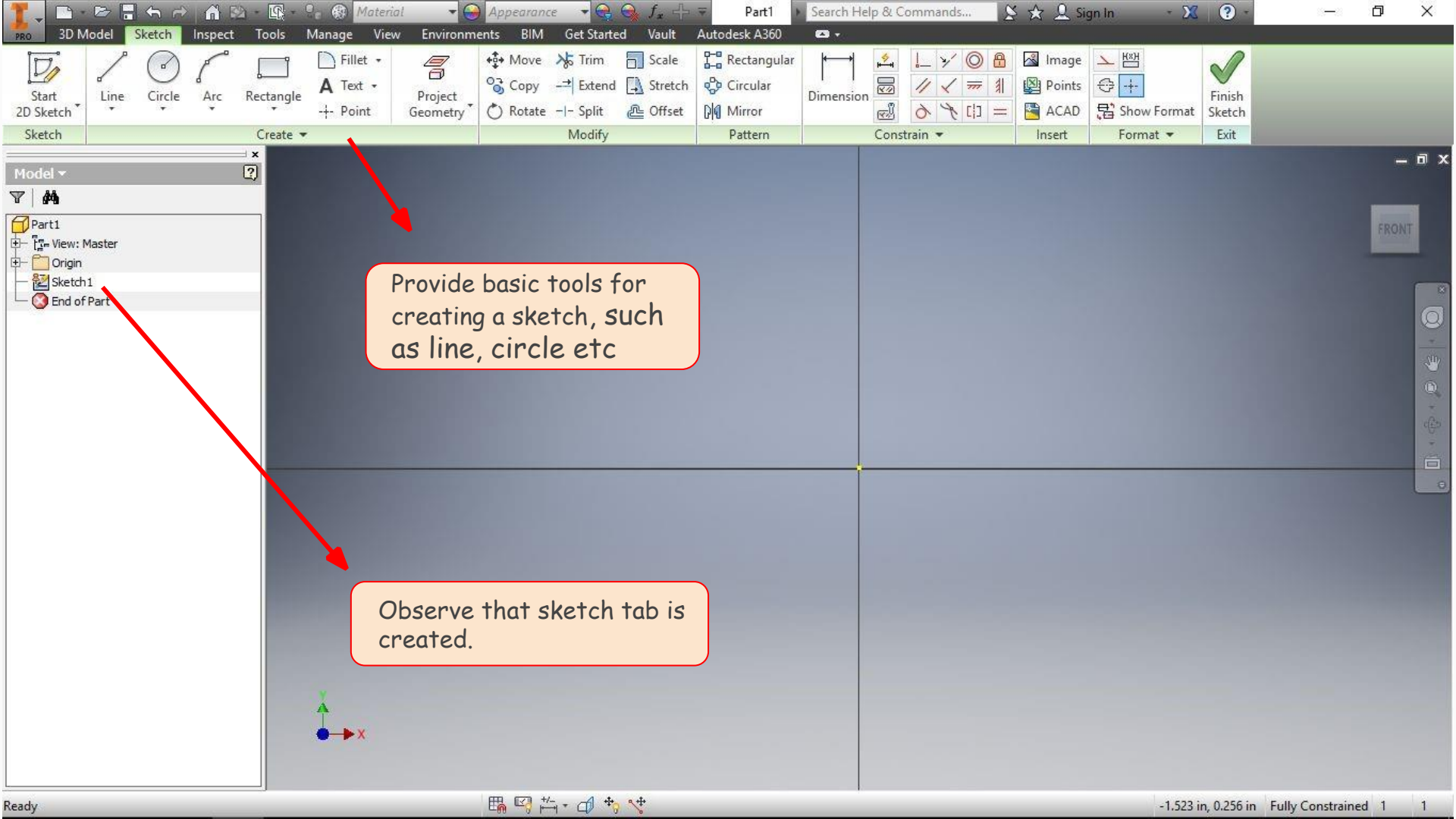
UCS
Box
Face
Convert
Stitch
Patch
Sculpt
Stress Analysis
Convert to Sheet Metal
Sketch
Create
Modify
Work Features
Pattern
Create Freeform
Surface
Simulation
Convert
Model
Part1
View: Master
Origin
End of Part
Click here to draw a sketch on a predefined plane
FRONT
Ready


Represent a box whose faces represent different views of your drawing.
Predefined planes- XY, YZ, ZX
Navigation Toolbar
Coordinate system
Select plane to create sketch or an existing sketch to edit


Material
Appearance
Part1
Search Help & Commands...
Sign In
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Tools
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View
Environments
BIM
Get Started
Vault
Autodesk A360
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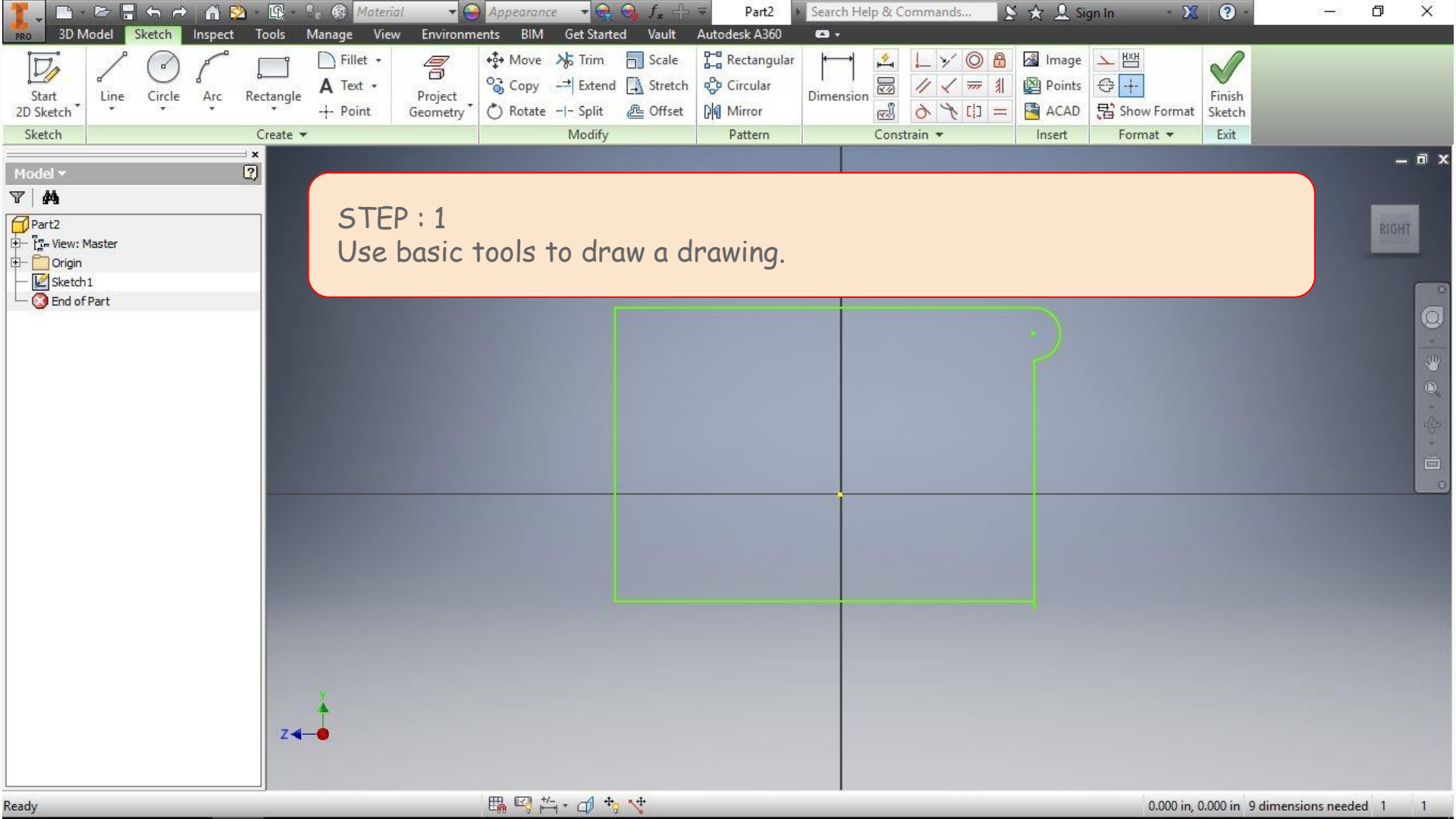
Circle
Arc
Rectangle
Fillet
Text
Point
Project Geometry
Move
Copy
Rotate
Trim
Extend
Split
Scale
Stretch
Offset
Rectangular
Circular
Mirror
Dimension
Image
Points
ACAD
Show Format
Finish Sketch
Sketch
Create
Modify
Pattern
Constrain
Insert
Format
Exit
Model
Part1
View: Master
Origin
Sketch1
End of Part
FRONT
Provide basic tools for creating a sketch, such as line, circle etc
Observe that sketch tab is created.
Ready
-1.523 in, 0.256 in
Fully Constrained


Material
Appearance
Part2
Search Help & Commands...
Sign In
3D Model
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BIM
Get Started
Vault
Autodesk A360
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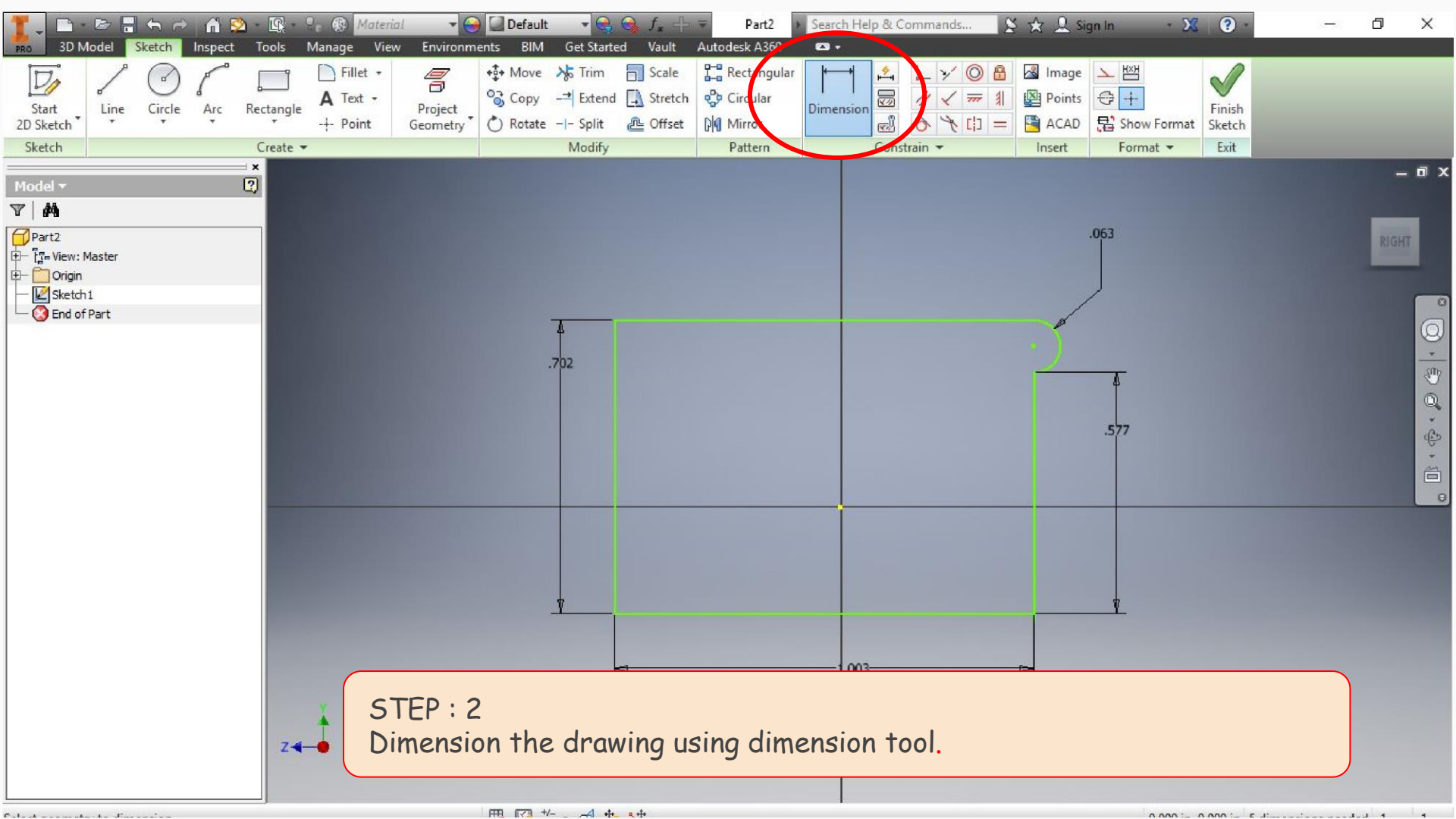
Mirror
Dimension
Image
Points
ACAD
Show Format
Finish Sketch
Sketch
Create
Modify
Pattern
Constrain
Insert
Format
Exit
Model
Part2
View: Master
Origin
Sketch1
End of Part
STEP : 1
Use basic tools to draw a drawing.
RIGHT
Ready
0.000 in, 0.000 in
9 dimensions needed


Material
Default
Part2
Search Help & Commands...
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Circular
Mirror
Dimension
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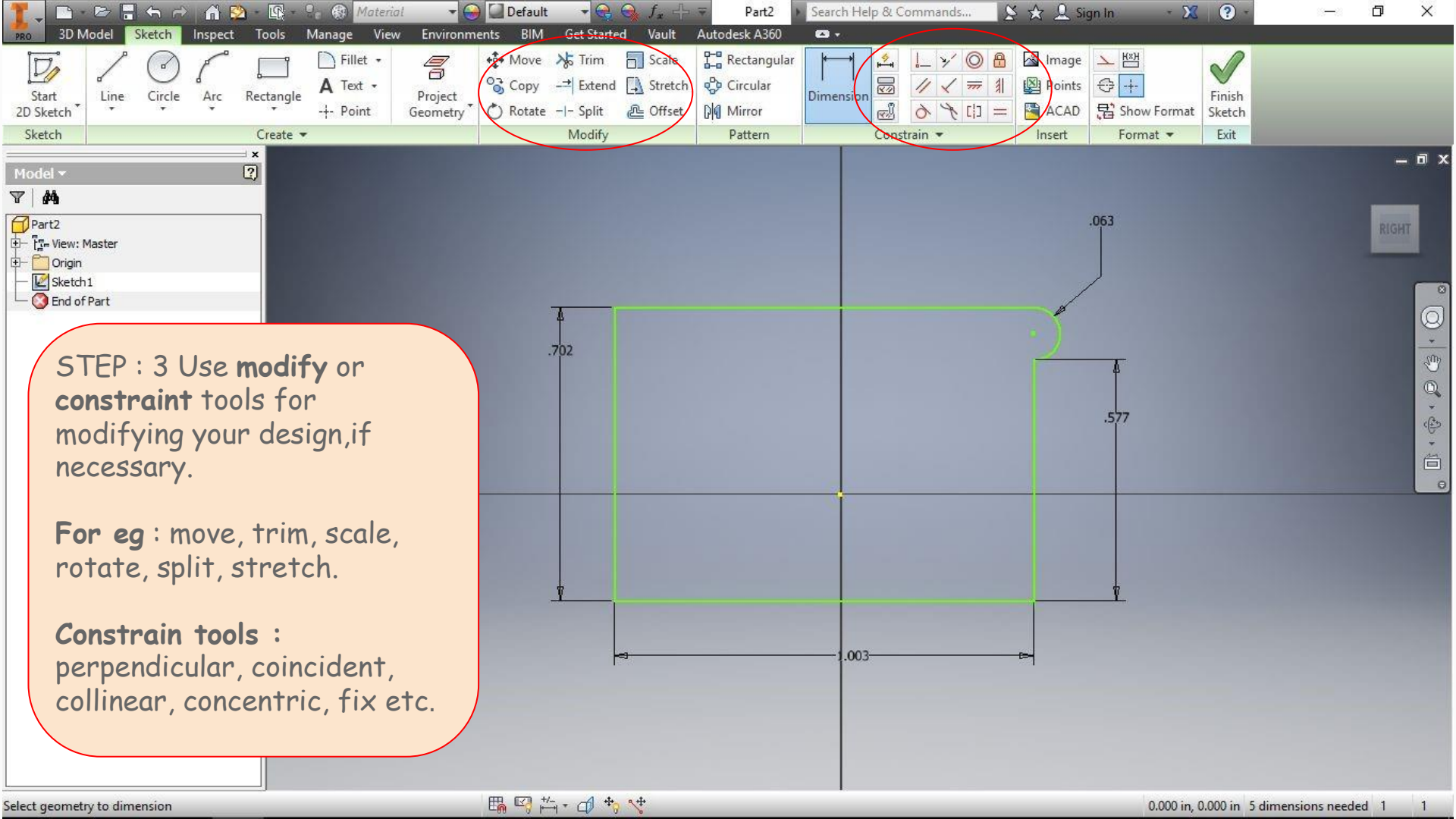
Show Format
Finish Sketch
Sketch
Create
Modify
Pattern
Constrain
Insert
Format
Exit
Model
Part2
View: Master
Origin
Sketch1
End of Part
.063
.702
.577
1.003
RIGHT
STEP : 2
Dimension the drawing using dimension tool.


Part2
3D Model
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BIM
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Autodesk A360
Start 2D Sketch
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Rectangular
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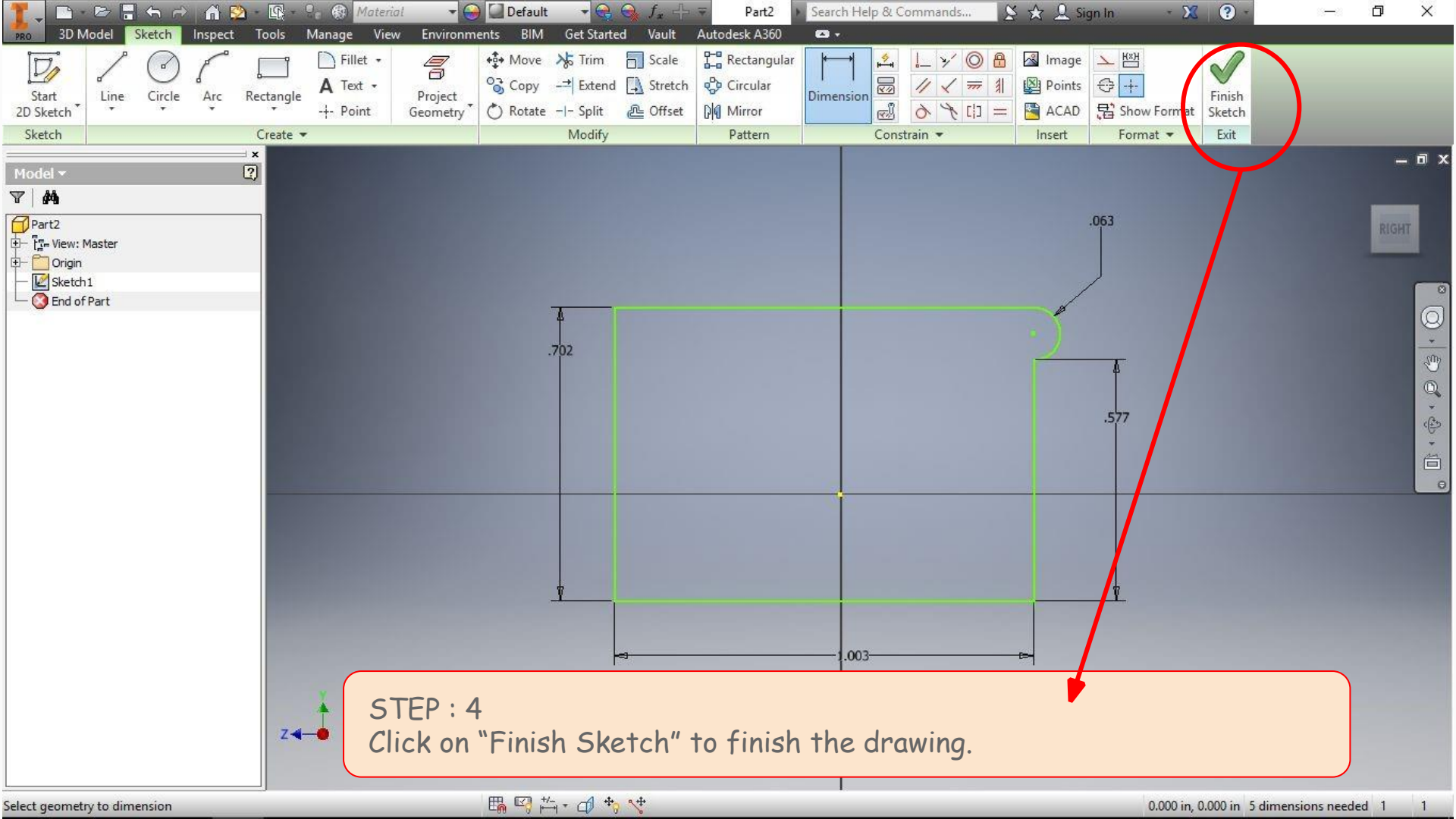
Finish Sketch
Sketch
Create
Modify
Pattern
Constrain
Insert
Format
Exit
Model
Part2
View: Master
Origin
Sketch1
End of Part
.063
.702
.577
1.003
RIGHT
STEP : 3 Use modify or constraint tools for modifying your design,if necessary.
For eg : move, trim, scale, rotate, split, stretch.
Constrain tools : perpendicular, coincident, collinear, concentric, fix etc.
Select geometry to dimension
0.000 in, 0.000 in
5 dimensions needed


Part2
Search Help & Commands...
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View
Environments
BIM
Get Started
Vault
Autodesk A360
Start 2D Sketch
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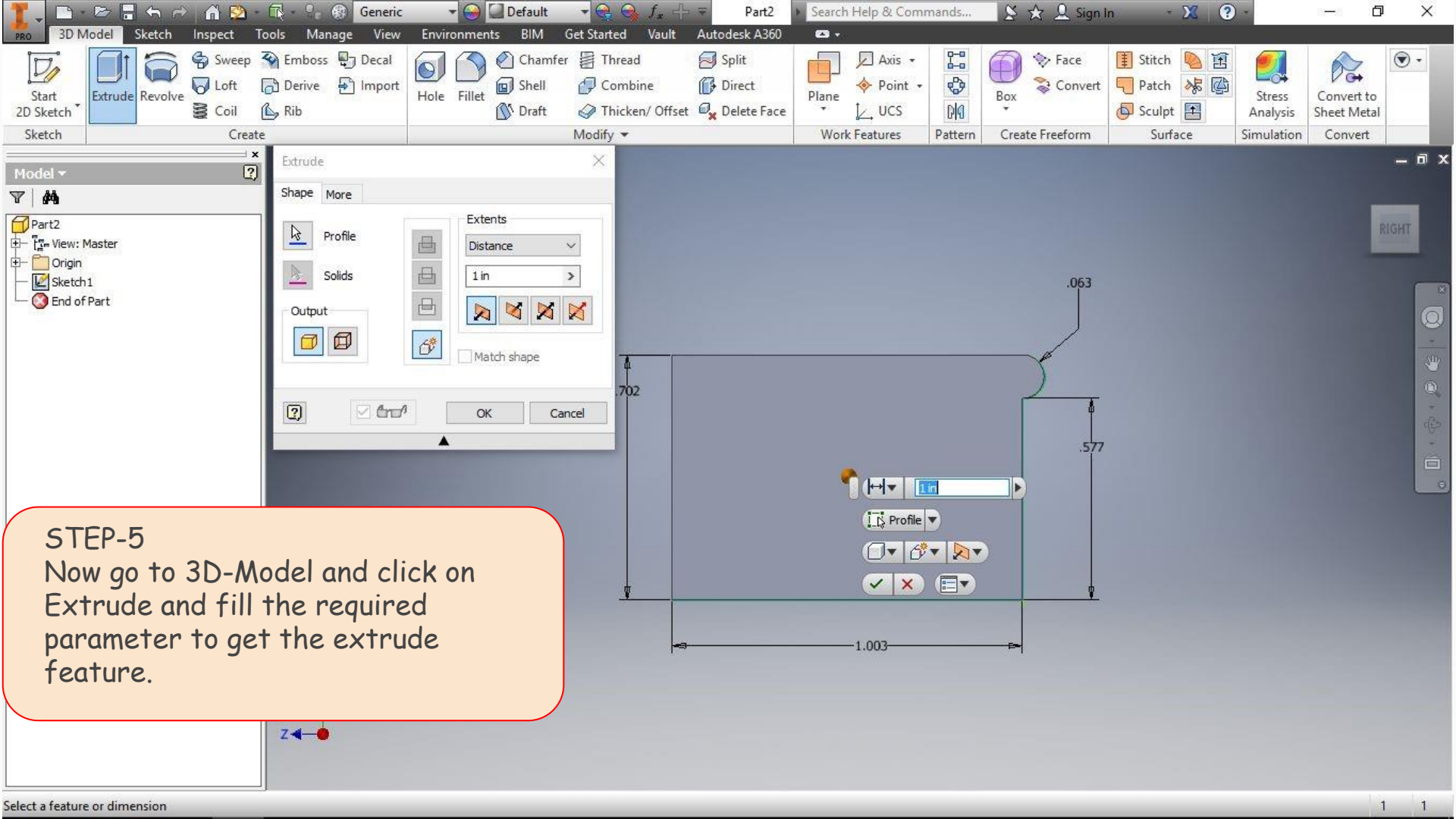
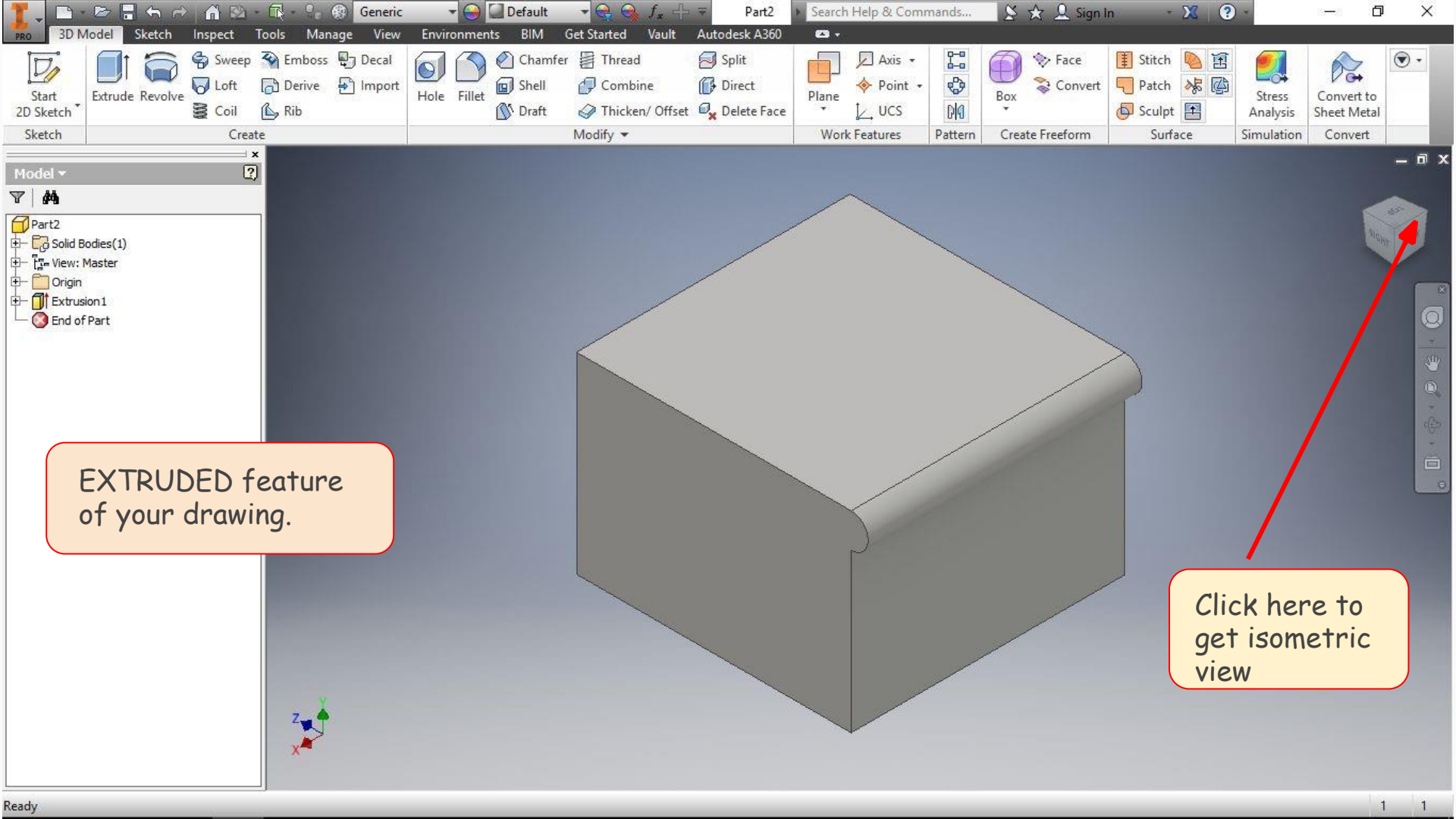
Arc
Rectangle
Fillet
Text
Point
Project Geometry
Move
Copy
Rotate
Trim
Extend
Split
Scale
Stretch
Offset
Rectangular
Circular
Mirror
Dimension
Image
Points
ACAD
Show Format
Finish Sketch
Sketch
Create
Modify
Pattern
Constrain
Insert
Format
Exit
Model
Part2
View: Master
Origin
Sketch1
End of Part
.063
.702
.577
1.003
RIGHT
STEP : 4
Click on "Finish Sketch" to finish the drawing.
Select geometry to dimension
0.000 in, 0.000 in
5 dimensions needed



STEP-5

Now go to 3D-Model and click on Extrude and fill the required parameter to get the extrude feature.


Part2
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Coil
Emboss
Derive
Rib
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Chamfer
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Convert to Sheet Metal
Sketch
Create
Modify
Work Features
Pattern
Create Freeform
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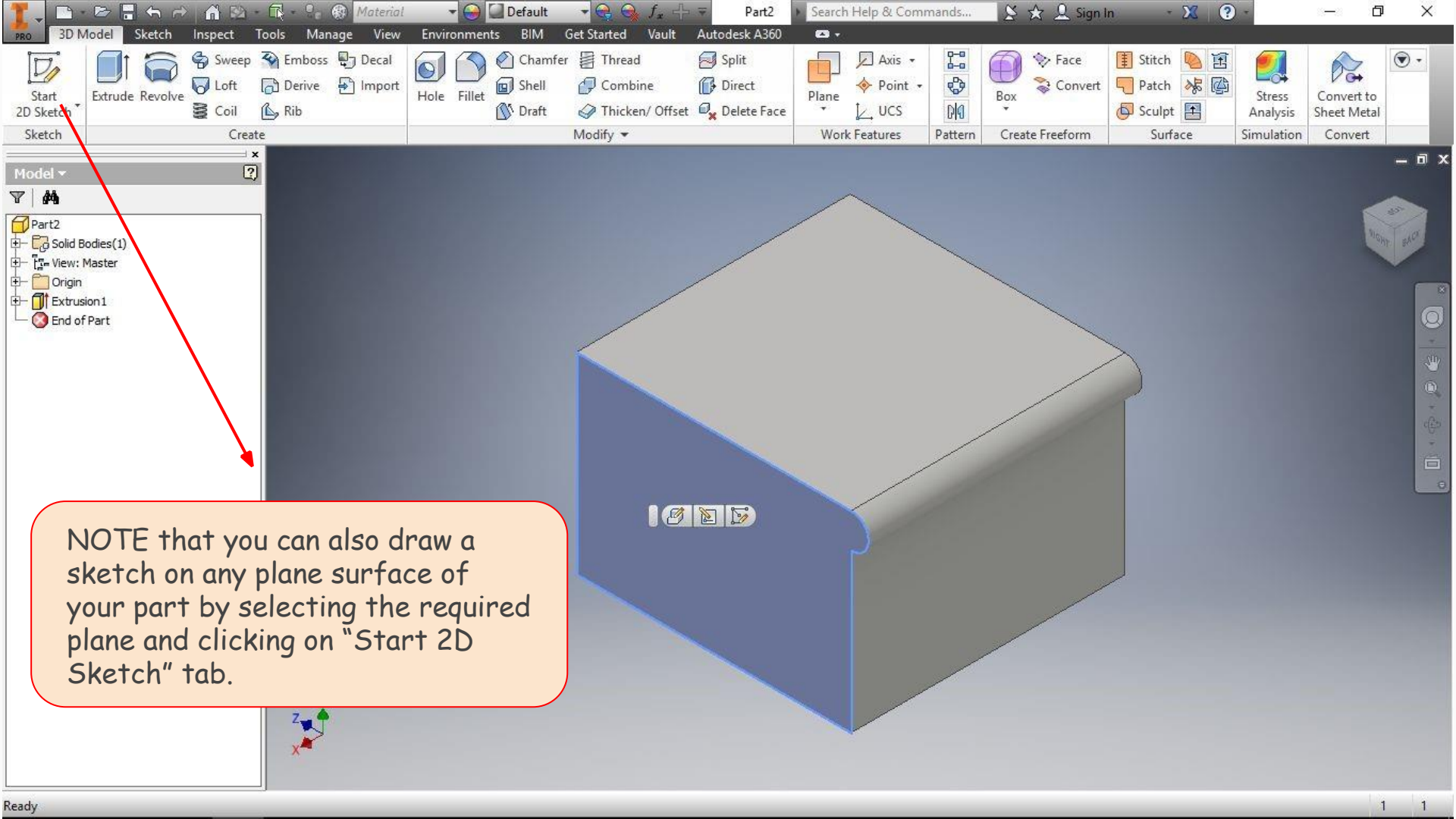
Model
Part2
Solid Bodies(1)
View: Master
Origin
Extrusion1
End of Part
EXTRUDED feature of your drawing.
Click here to get isometric view
Ready


3D Model
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Work Features
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Create Freeform
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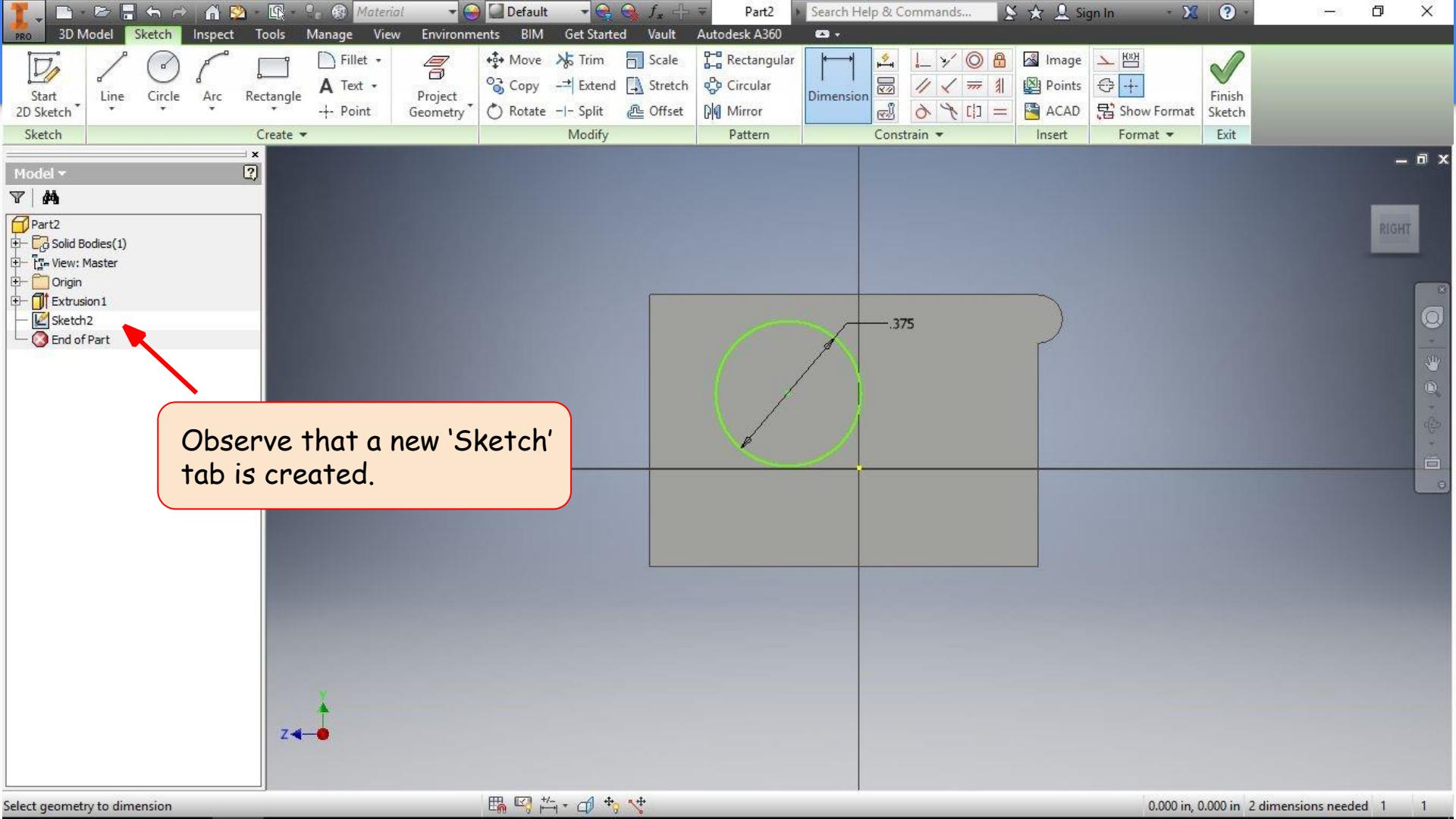
Model
Part2
Solid Bodies(1)
View: Master
Origin
Extrusion1
End of Part
NOTE that you can also draw a sketch on any plane surface of your part by selecting the required plane and clicking on "Start 2D Sketch" tab.
Ready


Material
Default
Part2
Search Help & Commands...
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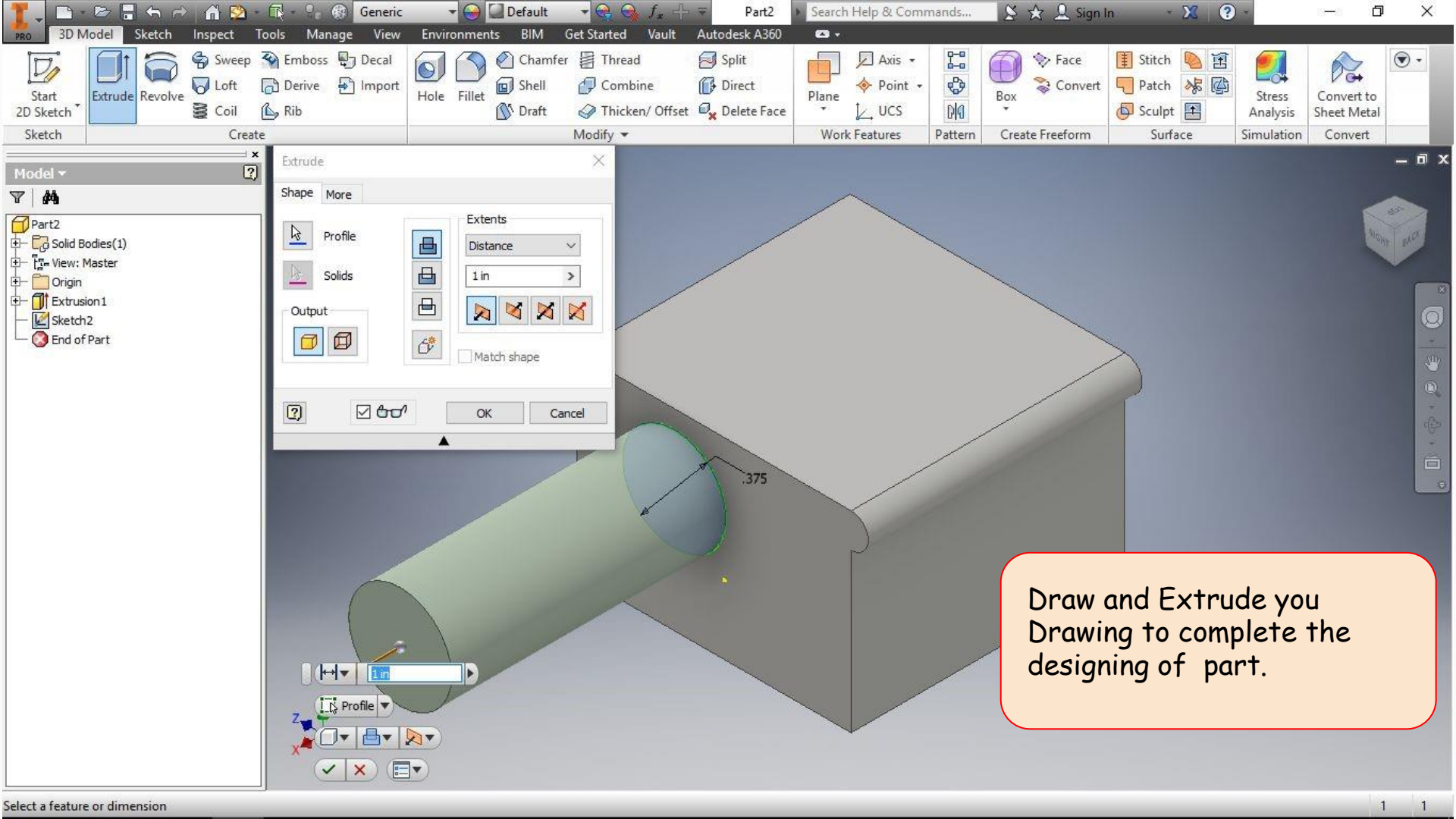
Show Format
Finish Sketch
Sketch
Create
Modify
Pattern
Constrain
Insert
Format
Exit
Model
Part2
Solid Bodies(1)
View: Master
Origin
Extrusion1
Sketch2
End of Part
Observe that a new 'Sketch' tab is created.
.375
RIGHT
Y
Z
Select geometry to dimension
0.000 in, 0.000 in
2 dimensions needed
1
1


Part2
Search Help & Commands...
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Work Features
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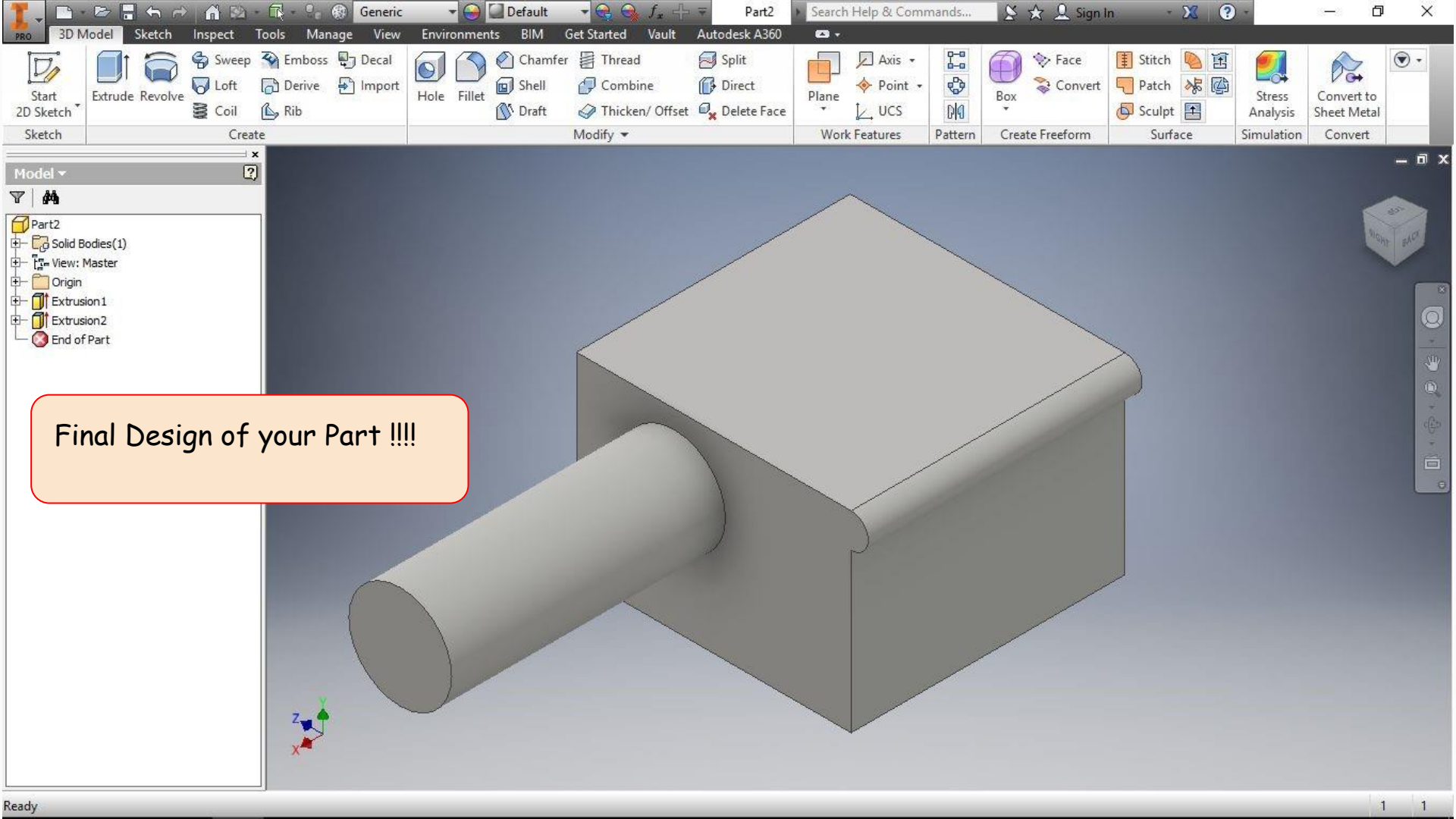
Convert
Model
Part2
Solid Bodies(1)
View: Master
Origin
Extrusion1
Sketch2
End of Part
Extrude
Shape
More
Profile
Solids
Output
Extents
Distance
1 in
Match shape
OK
Cancel
.375
1 in
Profile
Draw and Extrude you Drawing to complete the designing of part.
Select a feature or dimension


Generic
Default
Part2
Search Help & Commands...
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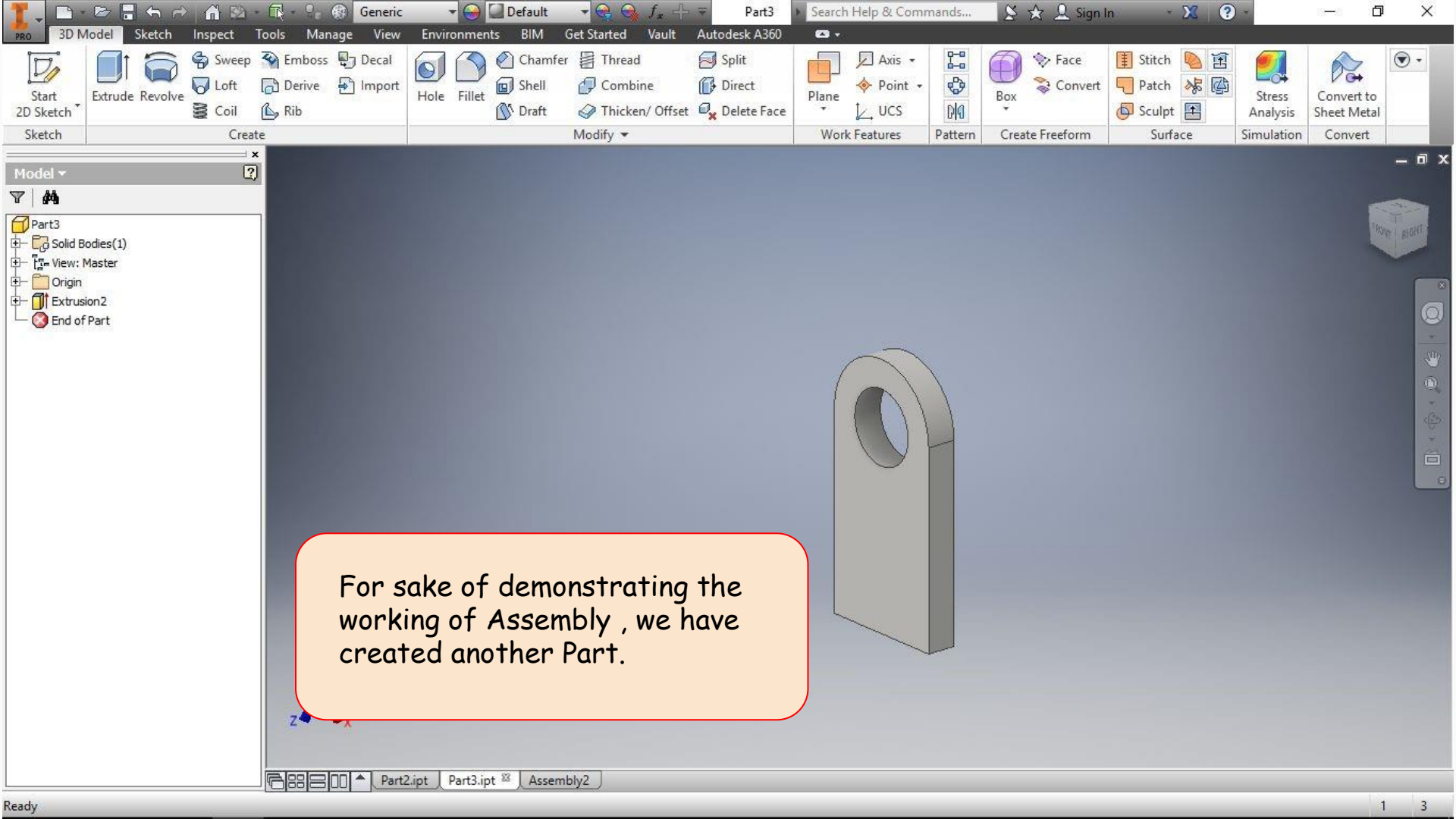
Convert to Sheet Metal
Sketch
Create
Modify
Work Features
Pattern
Create Freeform
Surface
Simulation
Convert
Model
Part2
Solid Bodies(1)
View: Master
Origin
Extrusion1
Extrusion2
End of Part
Final Design of your Part !!!!
Ready

NOW MOVING ON TO ASSEMBLY !!!!!


Generic
Default
Part3
Search Help & Commands...
Sign In
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Convert to Sheet Metal
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Modify
Work Features
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Create Freeform
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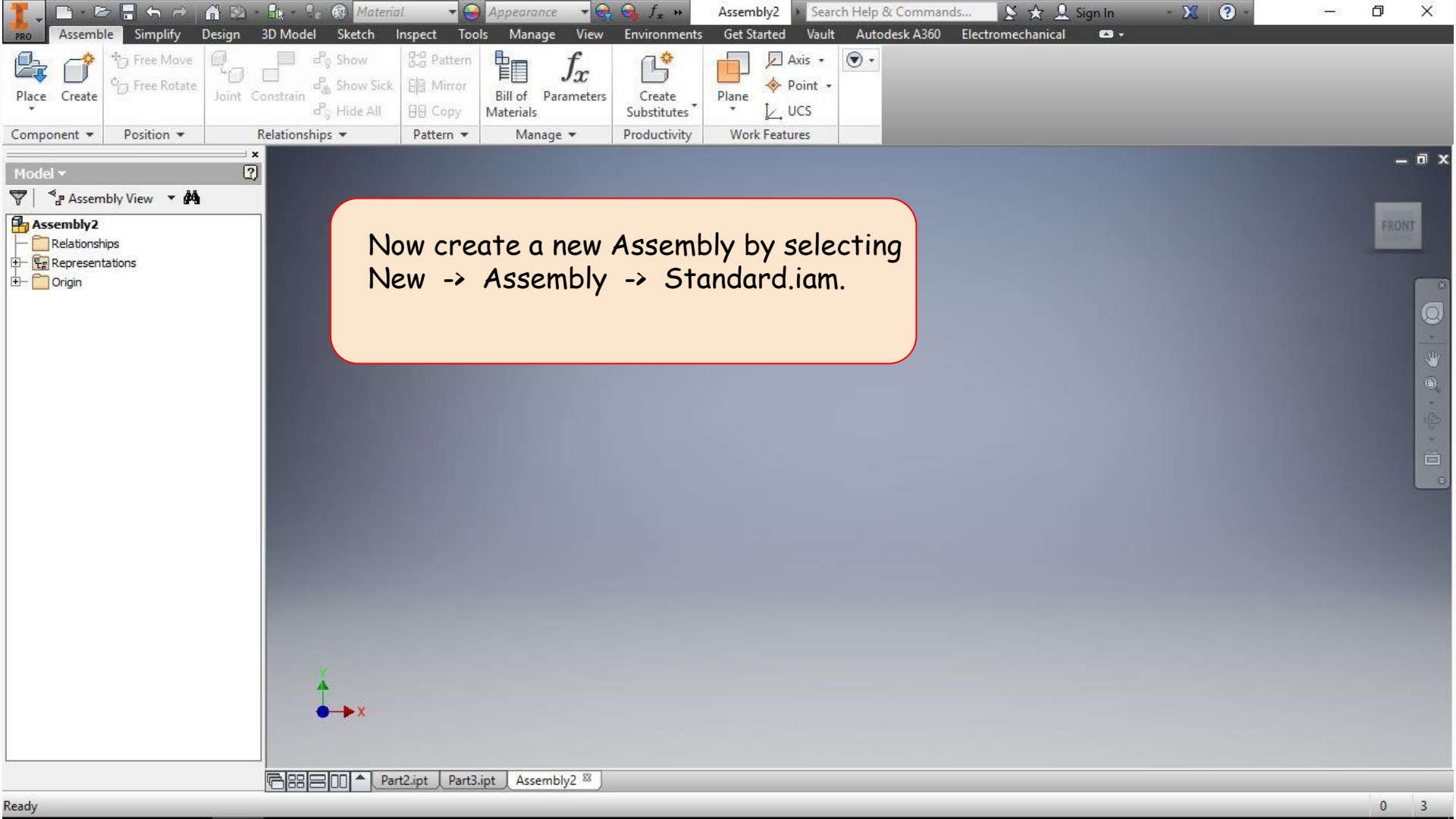
Model
Part3
Solid Bodies(1)
View: Master
Origin
Extrusion2
End of Part
For sake of demonstrating the working of Assembly , we have created another Part.
Part2.ipt
Part3.ipt
Assembly2
Ready


Assembly2
Search Help & Commands...
Sign In
Assemble
Simplify
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Sketch
Inspect
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Manage
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Get Started
Vault
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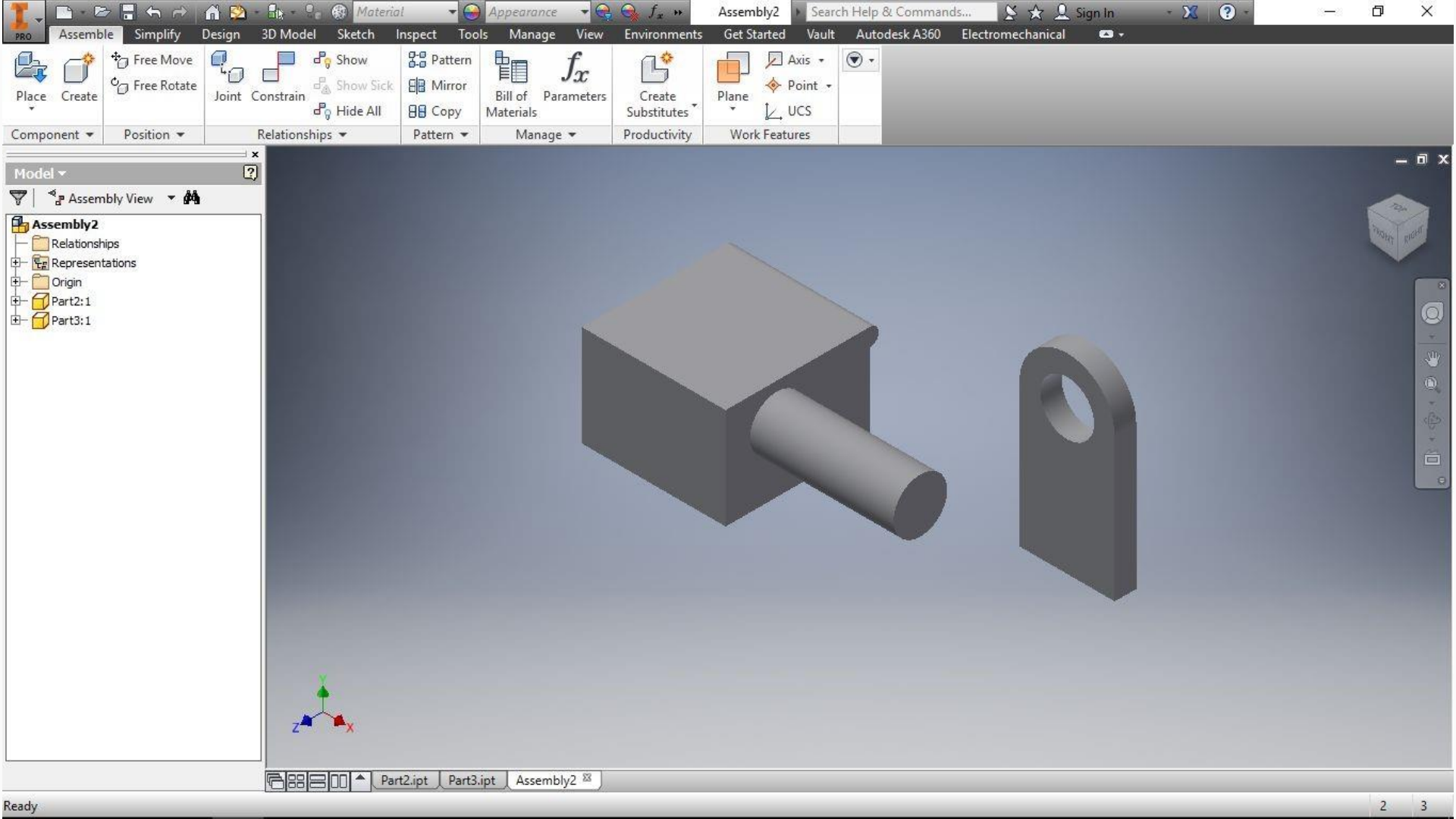
Create
Free Move
Free Rotate
Joint
Constrain
Show
Show Sick
Hide All
Pattern
Mirror
Copy
Bill of Materials
Parameters
Create Substitutes
Plane
Axis
Point
UCS
Component
Position
Relationships
Pattern
Manage
Productivity
Work Features
Model
Assembly View
Assembly2
Relationships
Representations
Origin
Now create a new Assembly by selecting
New -> Assembly -> Standard.iam.
FRONT
Part2.ipt
Part3.ipt
Assembly2
Ready


Material
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Assembly2
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Component
Position
Relationships
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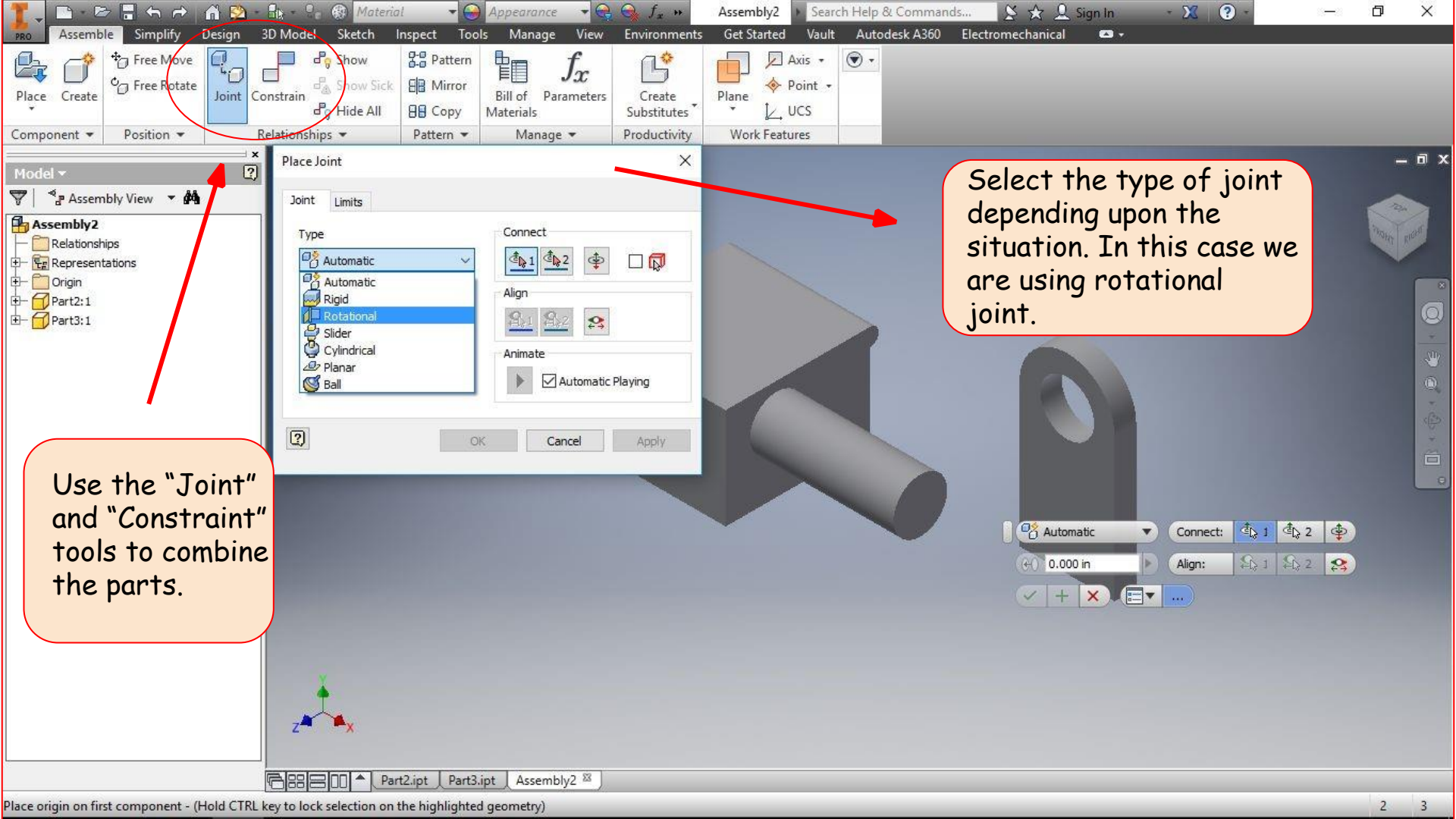
Work Features
Model
Assembly View
Assembly2
Relationships
Representations
Origin
Part2:1
Part3:1
Part2.ipt
Part3.ipt
Assembly2
Ready


Assemble
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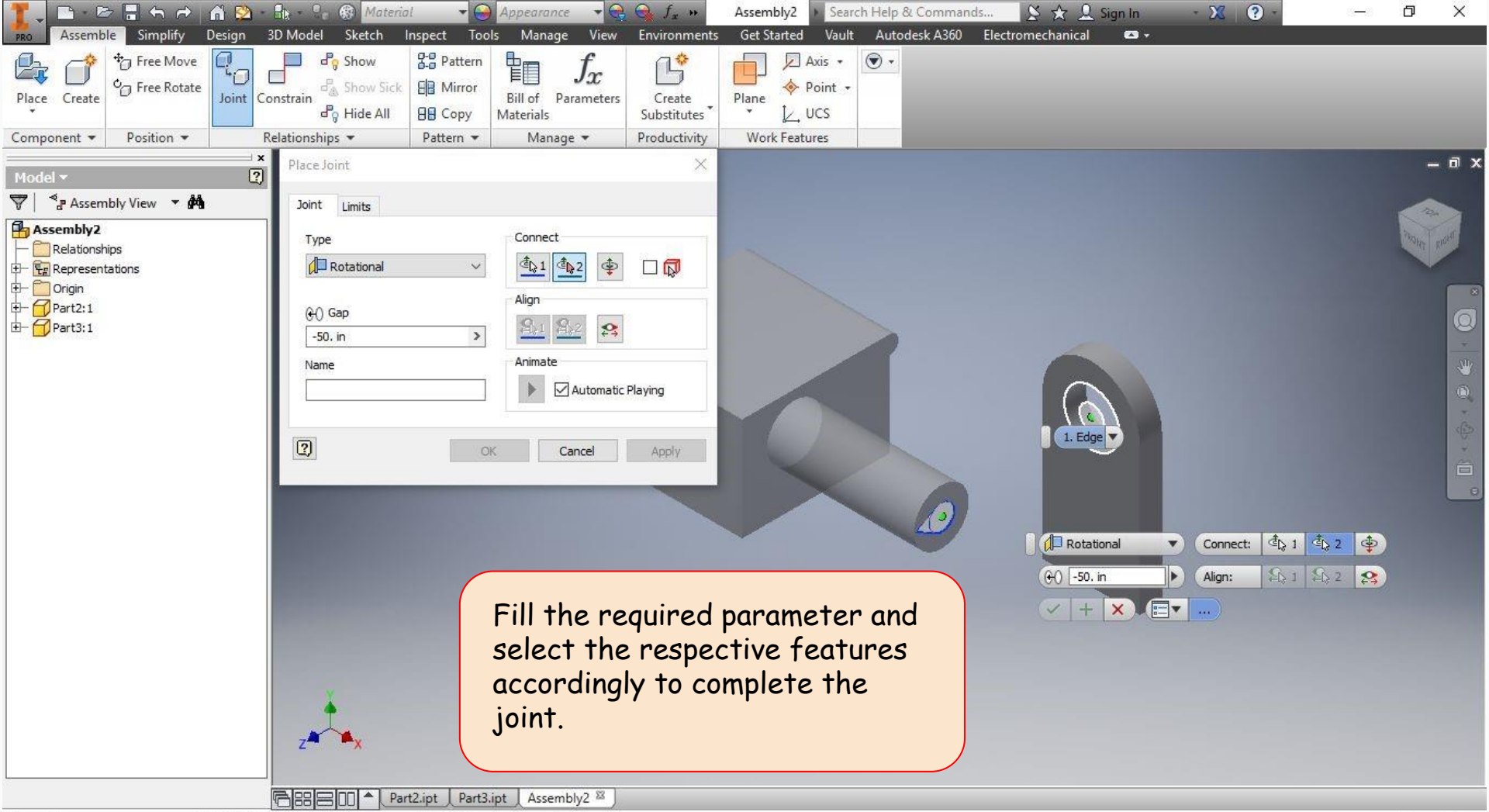
Model
Assembly View
Assembly2
Relationships
Representations
Origin
Part2:1
Part3:1
Place Joint
Joint
Limits
Type
Automatic
Automatic
Rigid
Rotational
Slider
Cylindrical
Planar
Ball
Connect
Align
Animate
Automatic Playing
OK
Cancel
Apply
Select the type of joint depending upon the situation. In this case we are using rotational joint.
Use the "Joint" and "Constraint" tools to combine the parts.
Automatic
Connect:
0.000 in
Align:
Part2.ipt
Part3.ipt
Assembly2
Place origin on first component - (Hold CTRL key to lock selection on the highlighted geometry)


Assemble
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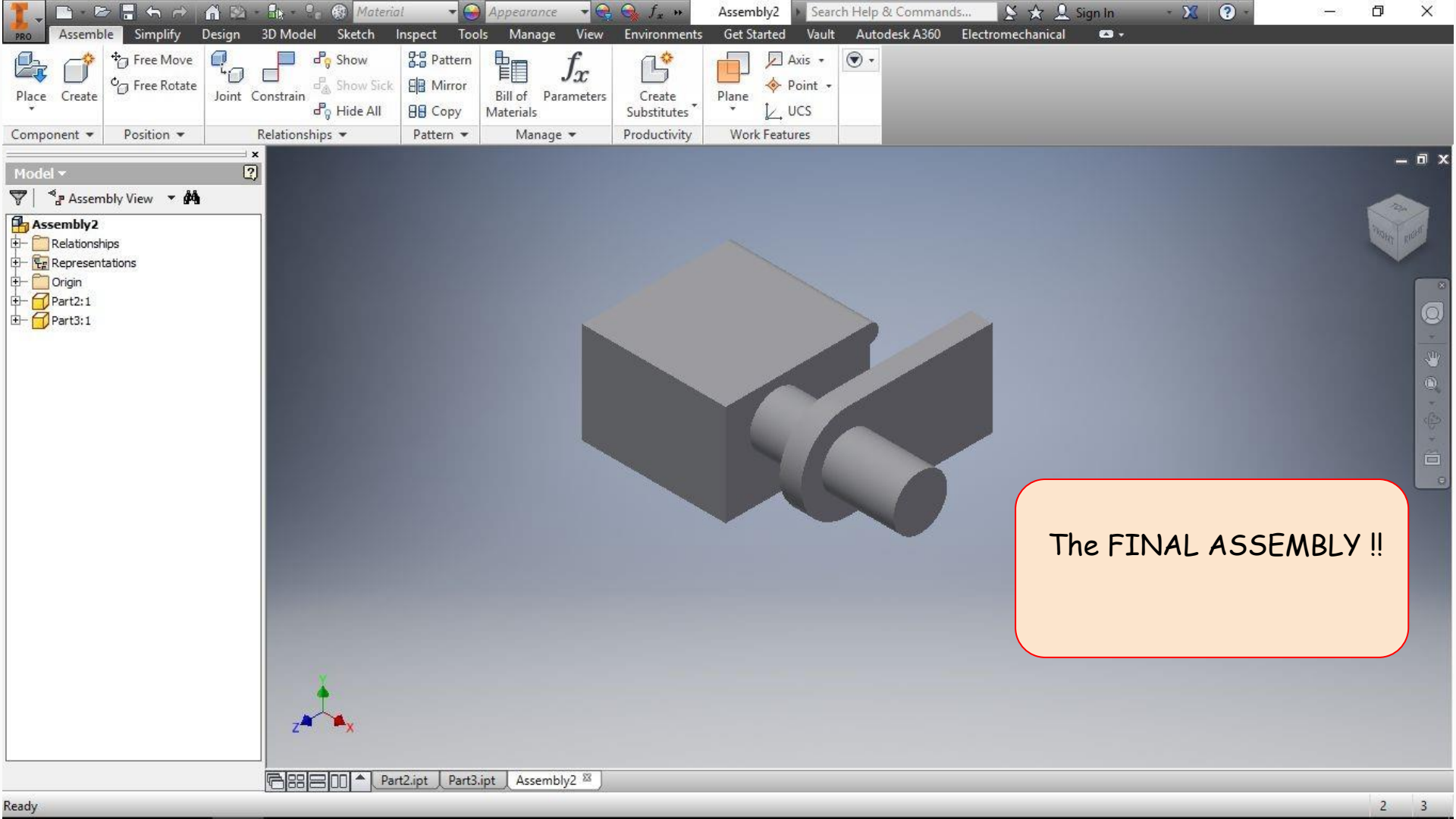
Free Move
Free Rotate
Joint
Constrain
Show
Show Sick
Hide All
Pattern
Mirror
Copy
Bill of Materials
Parameters
Create Substitutes
Plane
Axis
Point
UCS
Component
Position
Relationships
Pattern
Manage
Productivity
Work Features
Model
Assembly View
Assembly2
Relationships
Representations
Origin
Part2:1
Part3:1
Place Joint
Joint
Limits
Type
Rotational
Gap
-50. in
Name
Connect
Align
Animate
Automatic Playing
OK
Cancel
Apply
1. Edge
Rotational
Connect:
-50. in
Align:
Fill the required parameter and select the respective features accordingly to complete the joint.
Part2.ipt
Part3.ipt
Assembly2
Place origin on next component - (Hold CTRL key to lock selection on the highlighted geometry)


Assembly2
Search Help & Commands...
Sign In
Assemble
Simplify
Design
3D Model
Sketch
Inspect
Tools
Manage
View
Environments
Get Started
Vault
Autodesk A360
Electromechanical
Place
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Free Move
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Assembly View
Assembly2
Relationships
Representations
Origin
Part2:1
Part3:1
The FINAL ASSEMBLY !!
Part2.ipt
Part3.ipt
Assembly2
Ready

TO LEARN MORE VISIT:-

https://www.youtube.com/watch?v=uUkiycxSWkM&list=PLkMYhICFMsGYkVrkVbX4xngskLzxTBStJ