

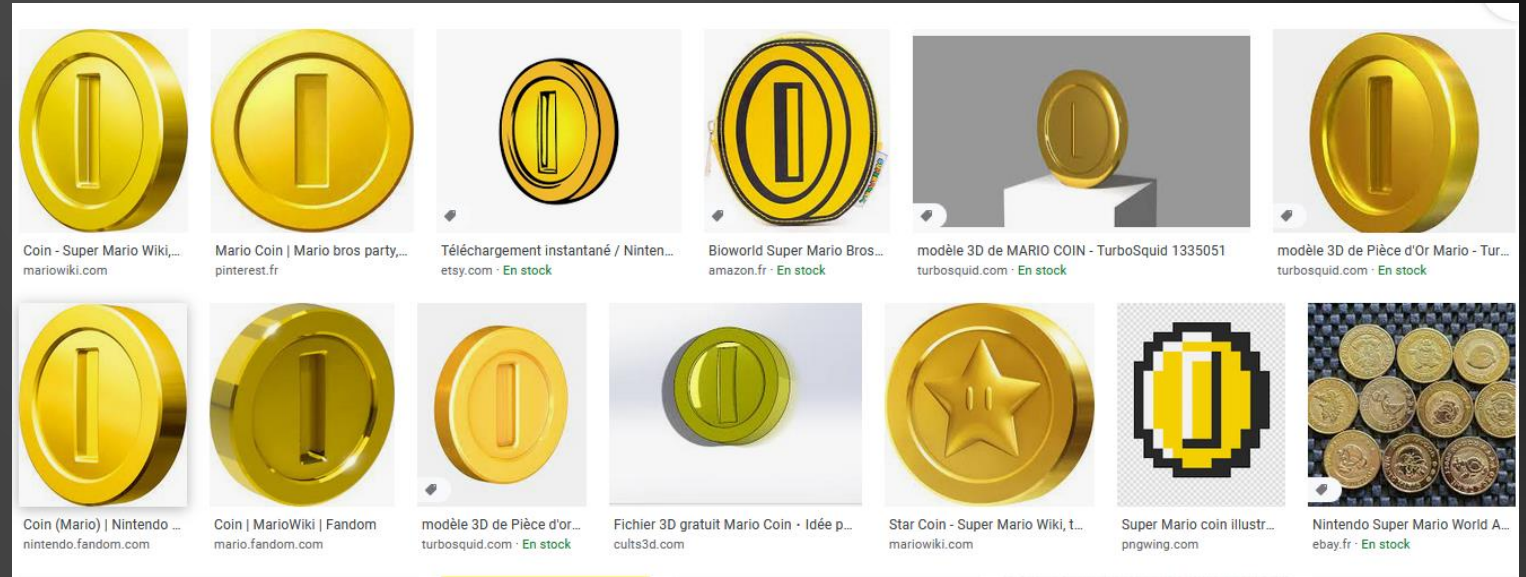
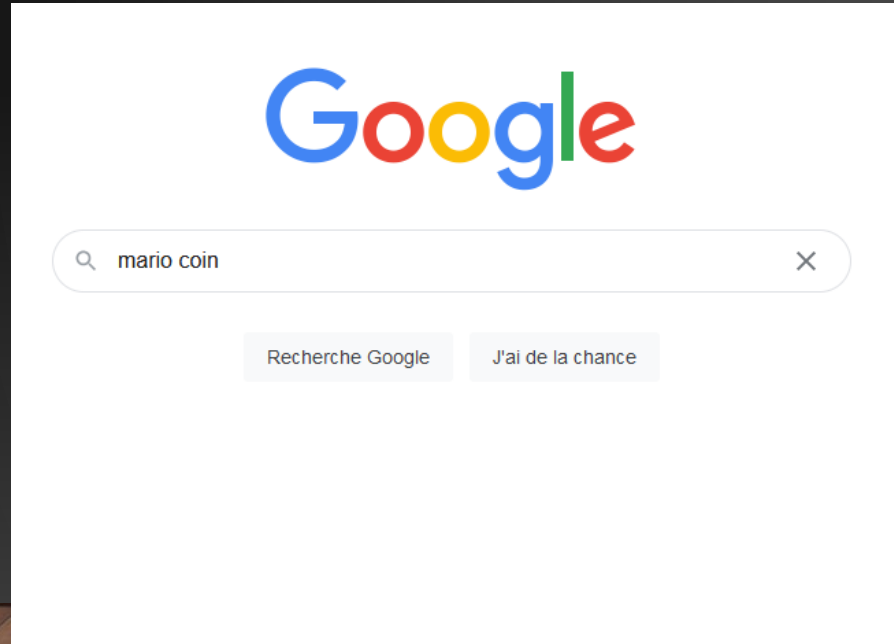
# TUTORIAL TO MAKE A 3D MODEL



# STEP 1: OPEN YOUR SEARCH ENGINE

Before we start our modelisation, we need firstly to find the object we want to modelise. For this, open your search engine and type in the search bar the name of your object.

Here is an example of what you can have when you search « mario coin » on google:



## STEP 2: FIND AN IMAGE AND ANALYZE IT



Now, we have find our image of a mario coin. So now, we will analyze it.

The analyze:

Firstly, we can see that we have to do a circle and an extrusion of him to create the base of the coin.

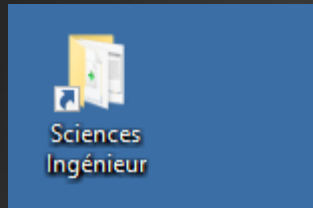
After, we have to create a smaller circle and extrude him too.

Next, we have to do an I hole in the center of the piece. There are also the fact that the 2 last steps need to be realised in the 2 side of our piece.

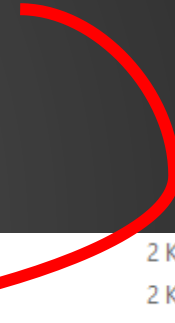
Finally, we have to add the yellow color on all the piece.

## STEP 3: OPEN THE APPLICATION INVENTOR

To open the inventor application, you first have to open the « Sciences Ingénieur » file. After, you have to click on the inventor line to open him.



Arduino	13/10/2020 09:08	Raccourci	2 Ko
Arts plastiques	02/06/2020 14:12	Raccourci	2 Ko
Autodesk Inventor Professional 2020	13/10/2020 17:19	Raccourci	3 Ko
CES EduPack 2013	13/10/2020 09:10	Raccourci	3 Ko
Cura 4.9.1	04/10/2021 16:45	Raccourci	2 Ko

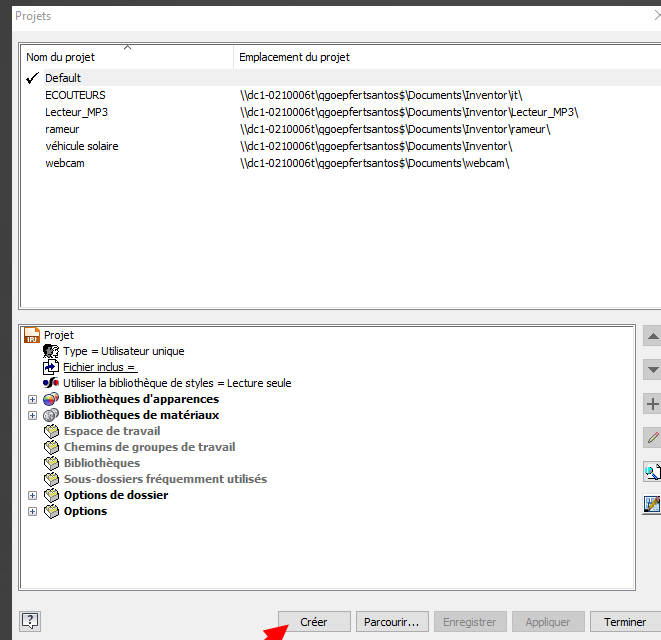
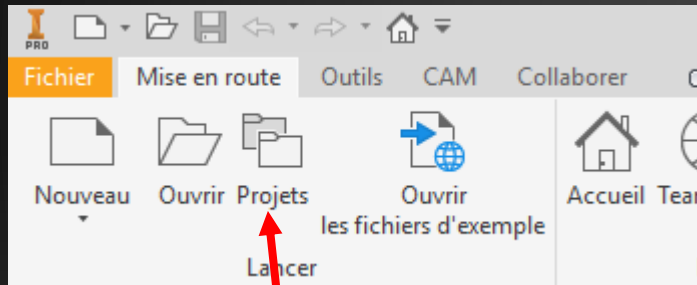




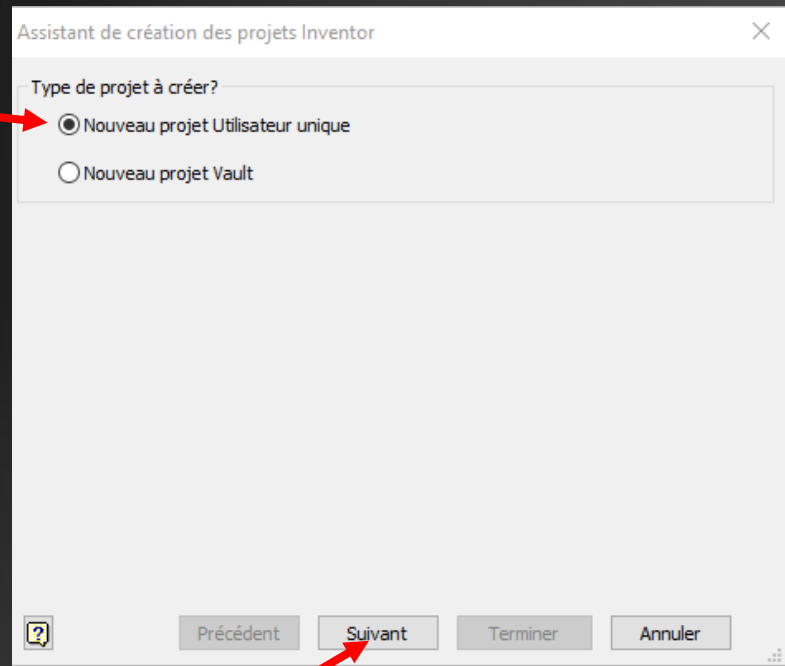
# STEP 4: CREATION OF THE PROJECT

Before you start to modelise your piece, you have to create a new project. You have to do this because, if you want to had piece to your modelisation, it will be easier with project.

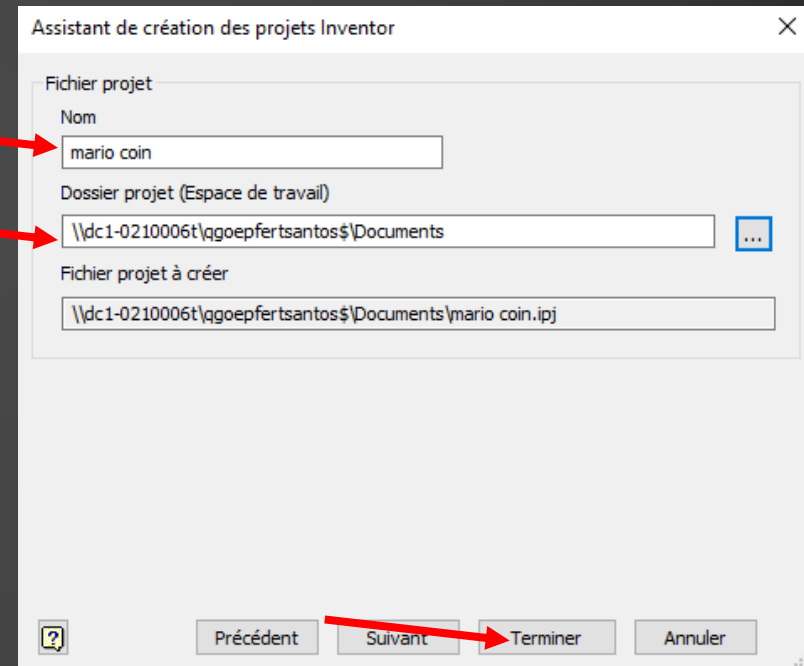
To do this, you just have to click on the icon « project ». After, click on « create ».



Next, click on « new single user project » and press « Next ».

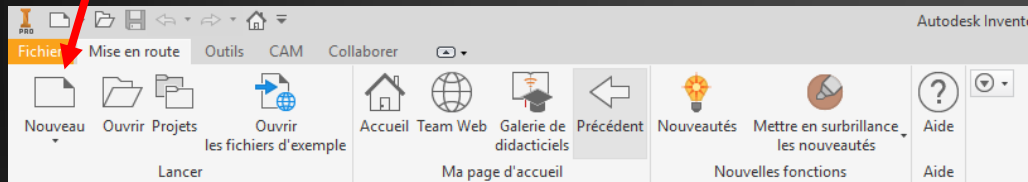


Finally, give a name to your project, here it's « mario coin », and choose where you want to save your project, for example in your document. To save the project, click on « finish » and click again on « finish ».

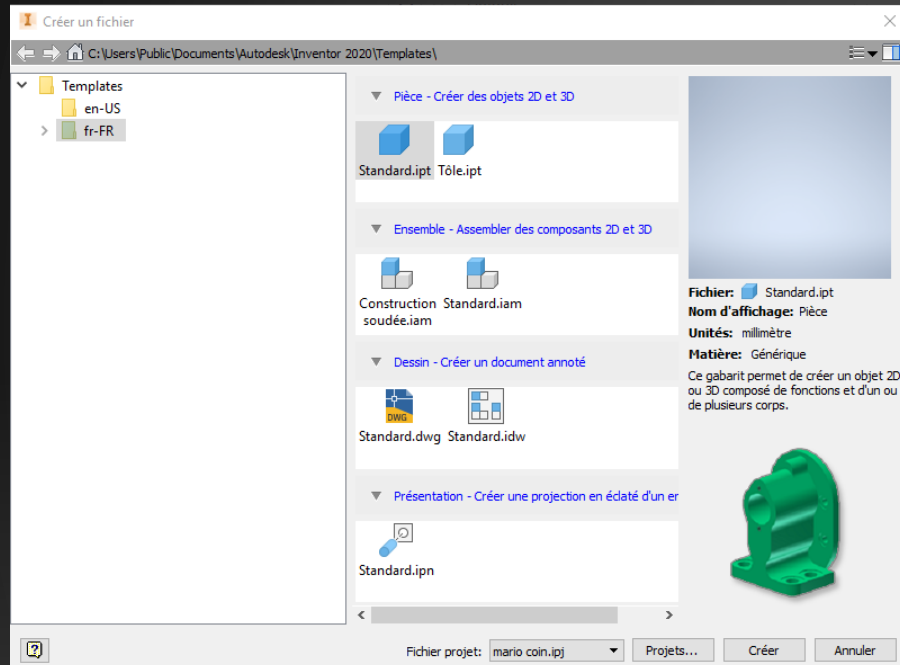


# STEP 5: THE START OF THE MODELISATION

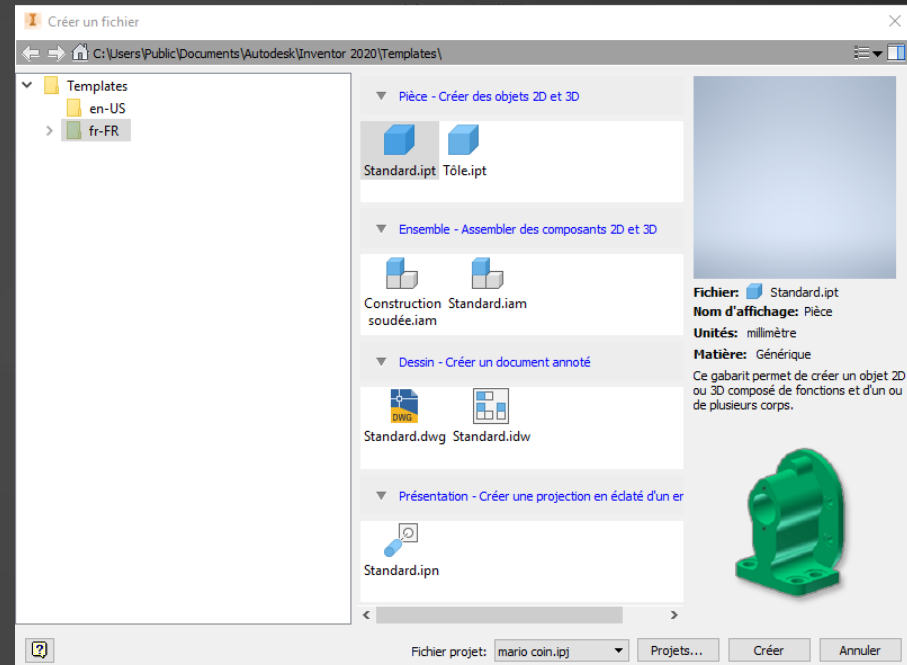
To start a modelisation, you have to create a new piece. To do this, you have firstly to click on « NEW » at top left of the screen.



After we arrived on this page:



Now, click on « standard.ipt » because we only have to do 1 piece. After, simply click on « create ».



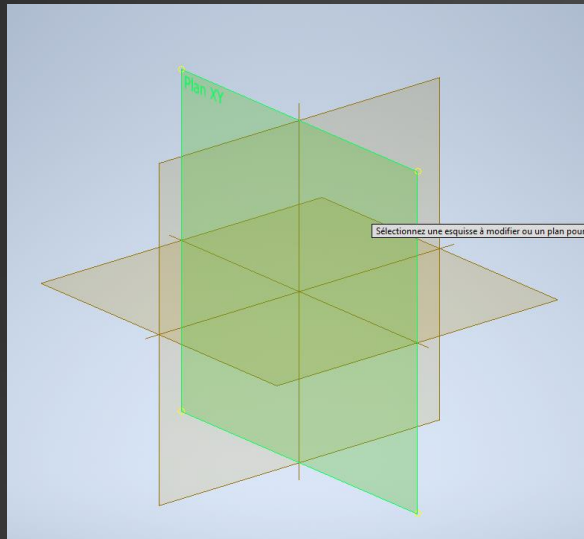
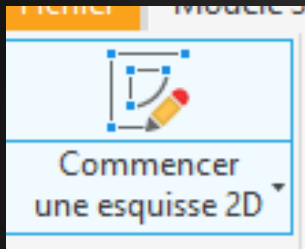


before you continue modeling, don't forget to save your work regularly so that you don't lose it if there is a problem with the application.

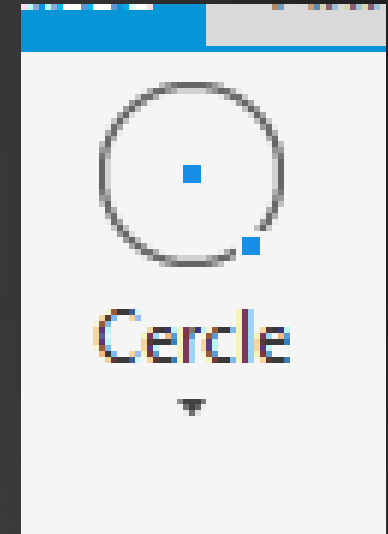


## STEP 6: CREATION OF THE STARTING SKETCH

First, create a new sketch  
and choose the plan XY.

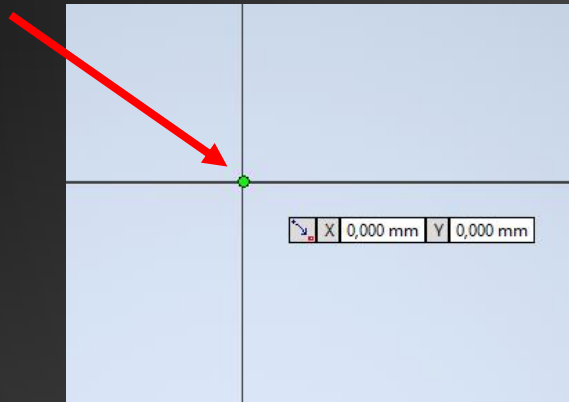


Now, use the tool  
« circle » to create the  
base of our piece.

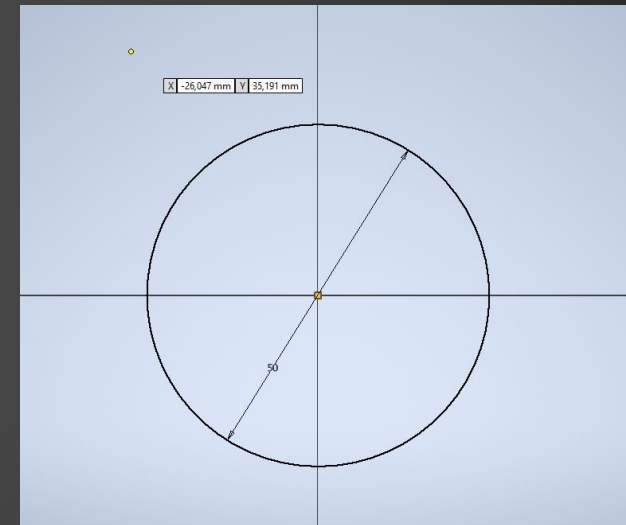


## STEP 7: START OF THE BASE

When you have selected this tool, put your mouse on this point:



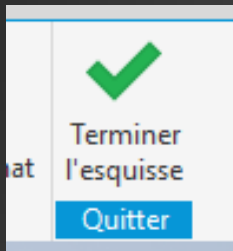
Now click on this point and move your mouse anywhere on the app. After, press 50 and click on enter.



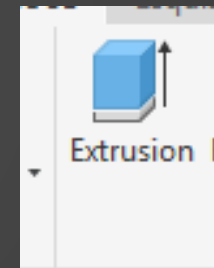
Now, you have this on your screen.

## STEP 8: THE EXTRUSION

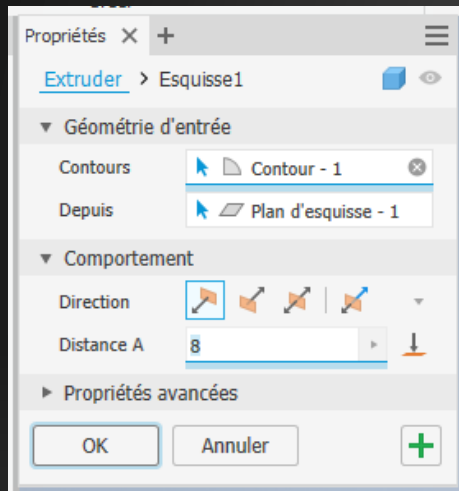
To do the extrusion, you first have to finish the sketch. For this, click on this button:



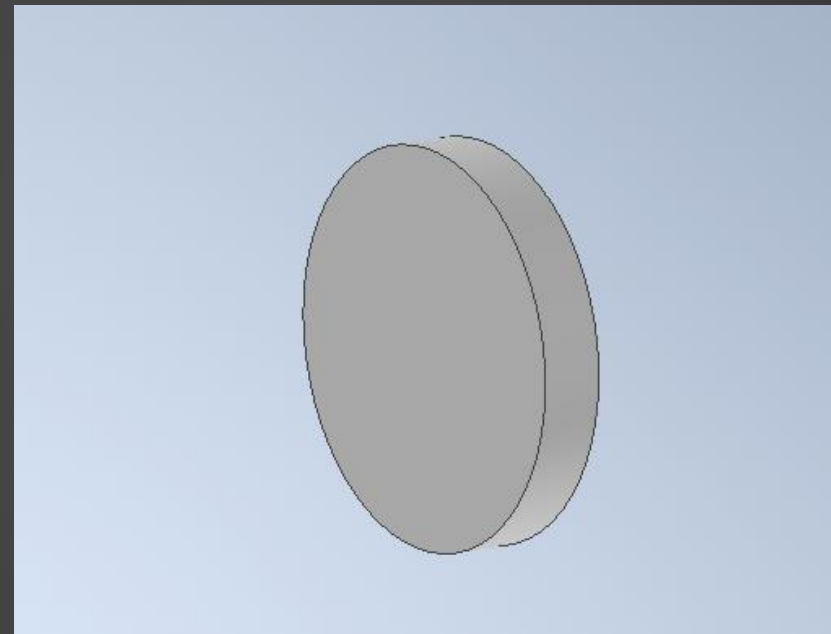
Now you arrived on this, so click on « extrusion », put your mouse on the sketch and click on him.



You have this window who just open:



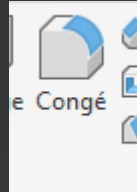
Put 8 on the distance A, click on OK and this is your base now:



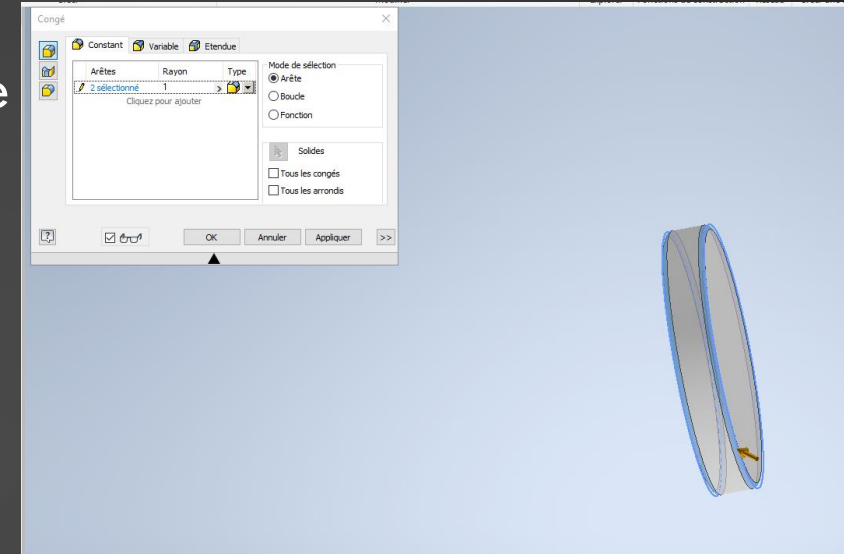


## STEP 9: THE FILLET

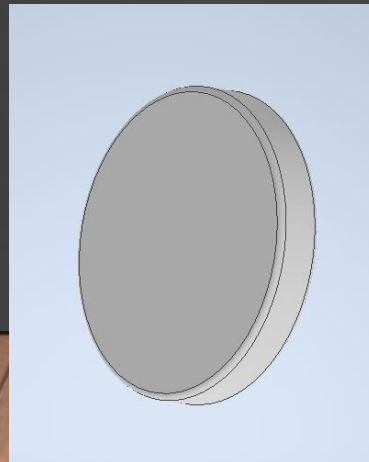
To create the fillet,  
click on this tool:



And put your  
mouse on the  
2 border of  
your piece  
and click:



Put 1 in the radius information  
and click on OK.

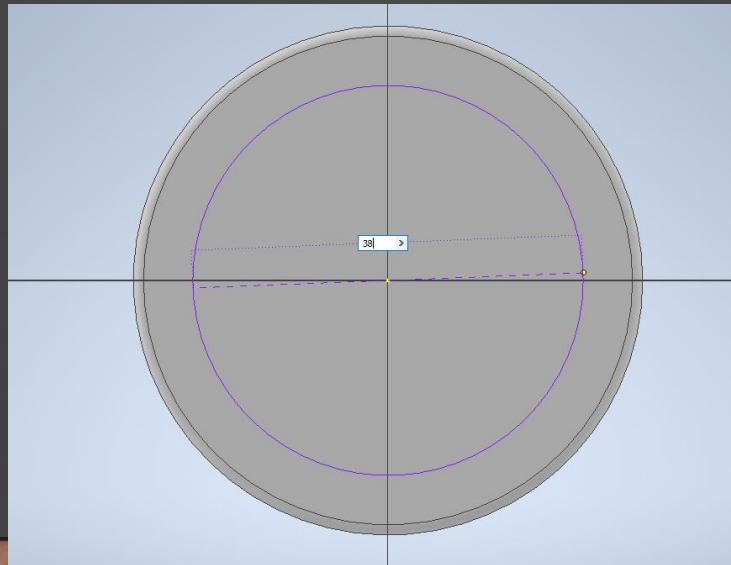


Now you have  
this piece.

## STEP 10: THE RECESS AT THE MIDDLE OF THE PIECE: THE SKETCH

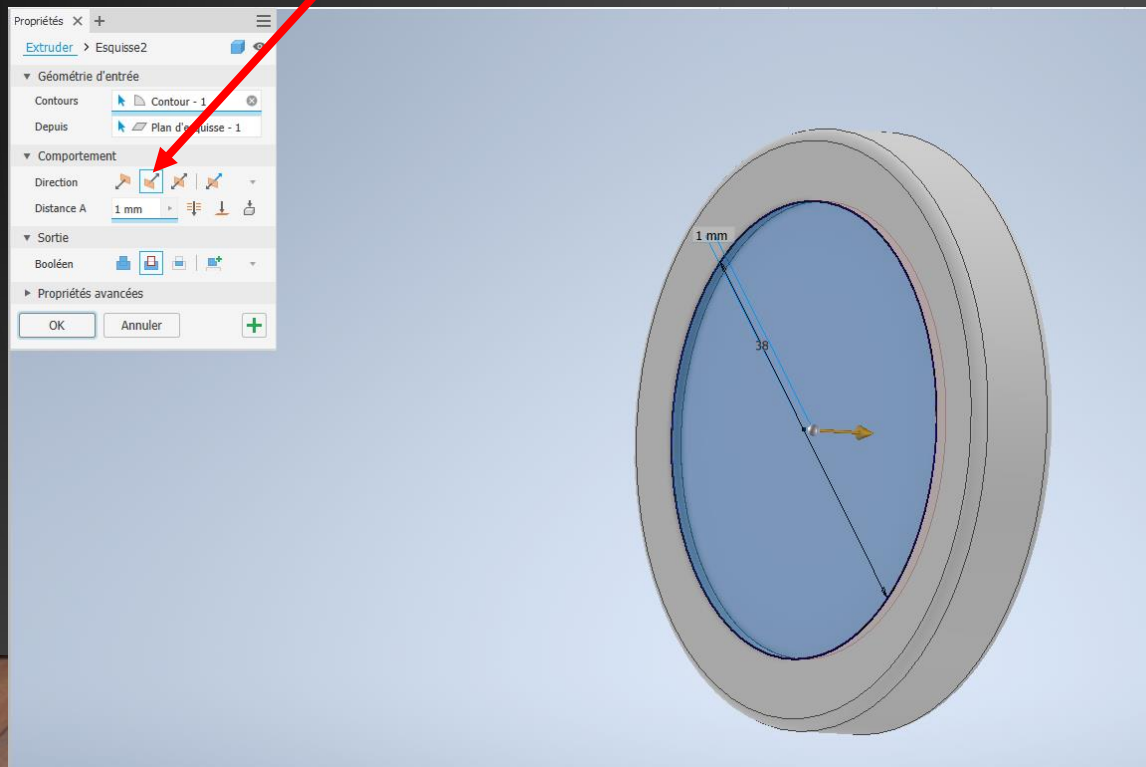


To do this, you have to create a new sketch on one of the face and put a circle with a diameter of 38. After, click on « finish the sketch » .



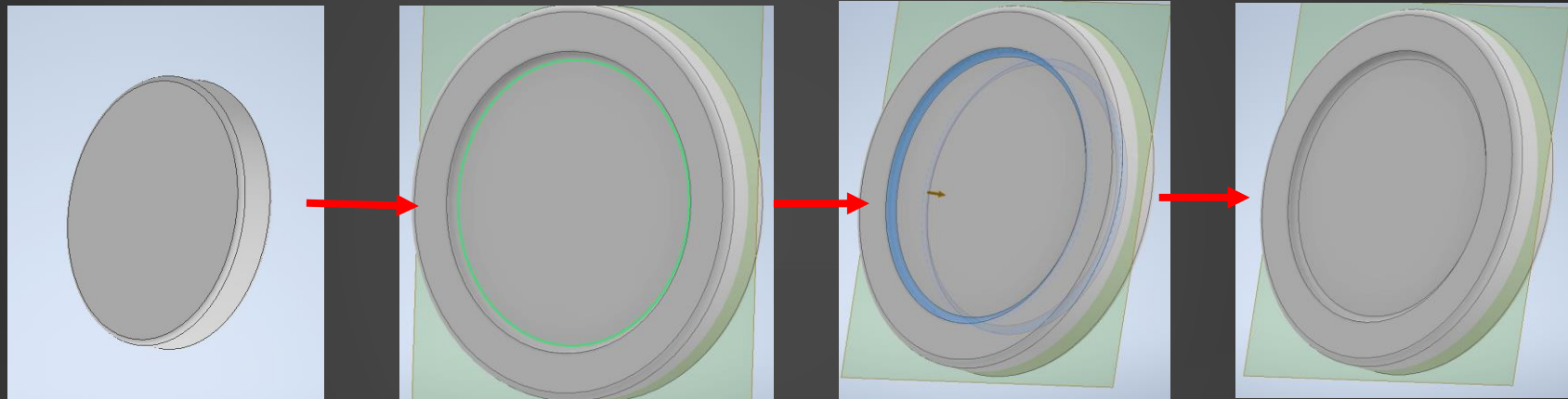
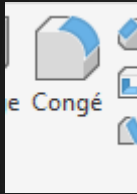
# STEP 11: THE RECESS AT THE MIDDLE OF THE PIECE: THE EXTRUSION

To do the extrusion, you have first to select the tool « extrusion » and select the previous sketch. After, select the second direction named « inversed ». Finally, do a cut of 1 mm of distance.



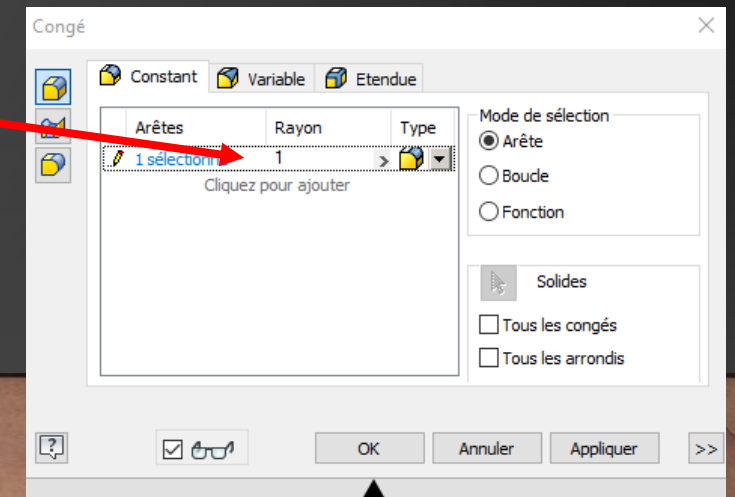
# STEP 12: THE RECESS AT THE MIDDLE OF THE PIECE: THE FILLET

You have to add  
fillet on the  
border in the  
interior of the  
piece:



Here is the result:

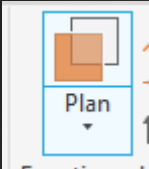
Pit 1 on this  
place.



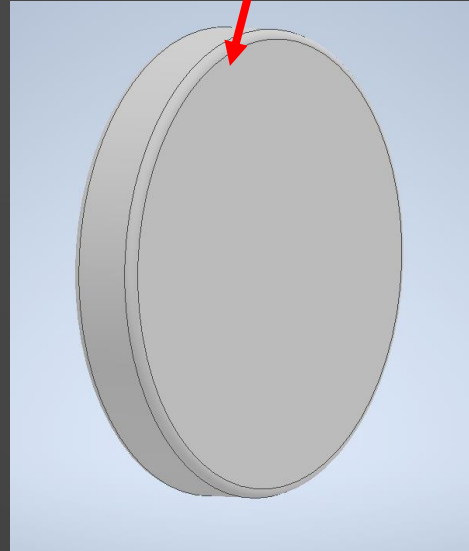
## STEP 13: THE CREATION OF THE MIDDLE PLAN

To do the same hole at the other side, you simply have to do a symmetry on the plan at the middle of the piece.

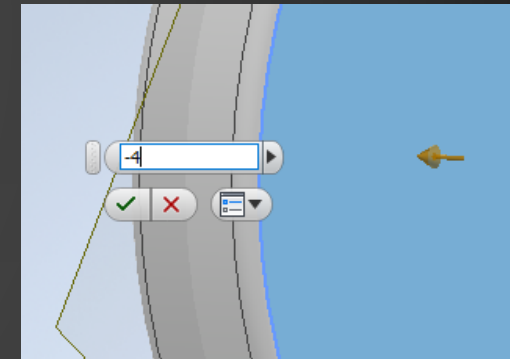
To place a new plan, click on this icon:



After, click on this face and hold the click:

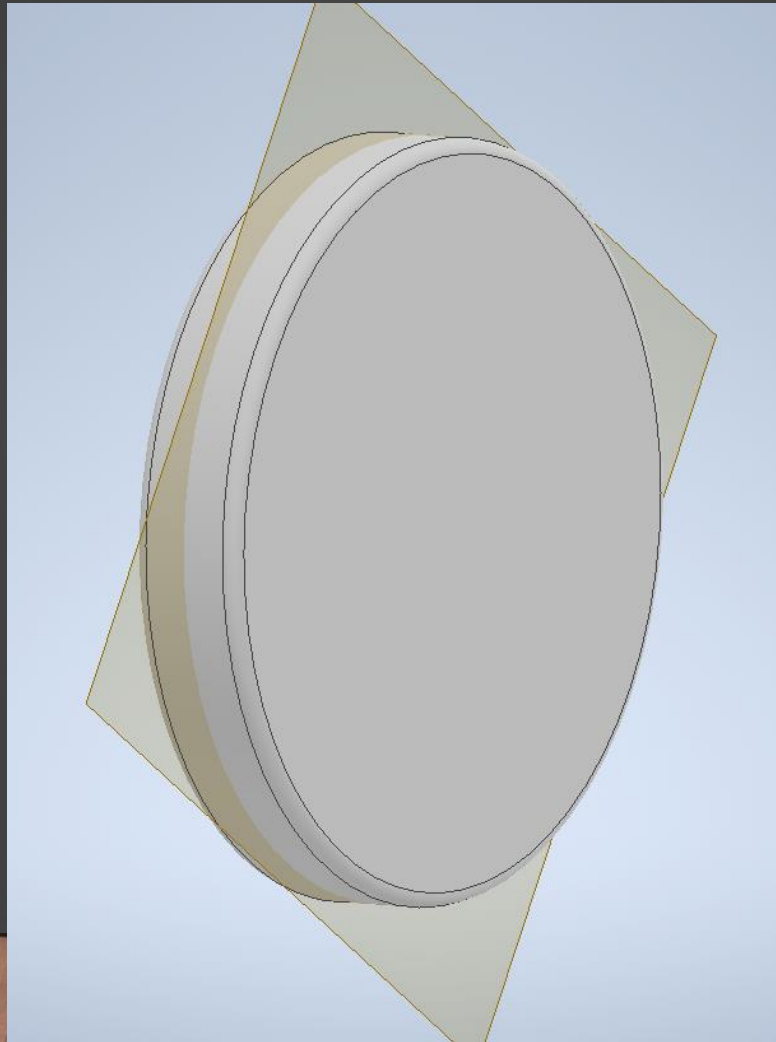


And slide your mouse where you want. Finally, put -4 on this case.



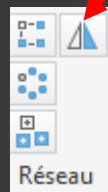


Normally, the plan  
look like this:

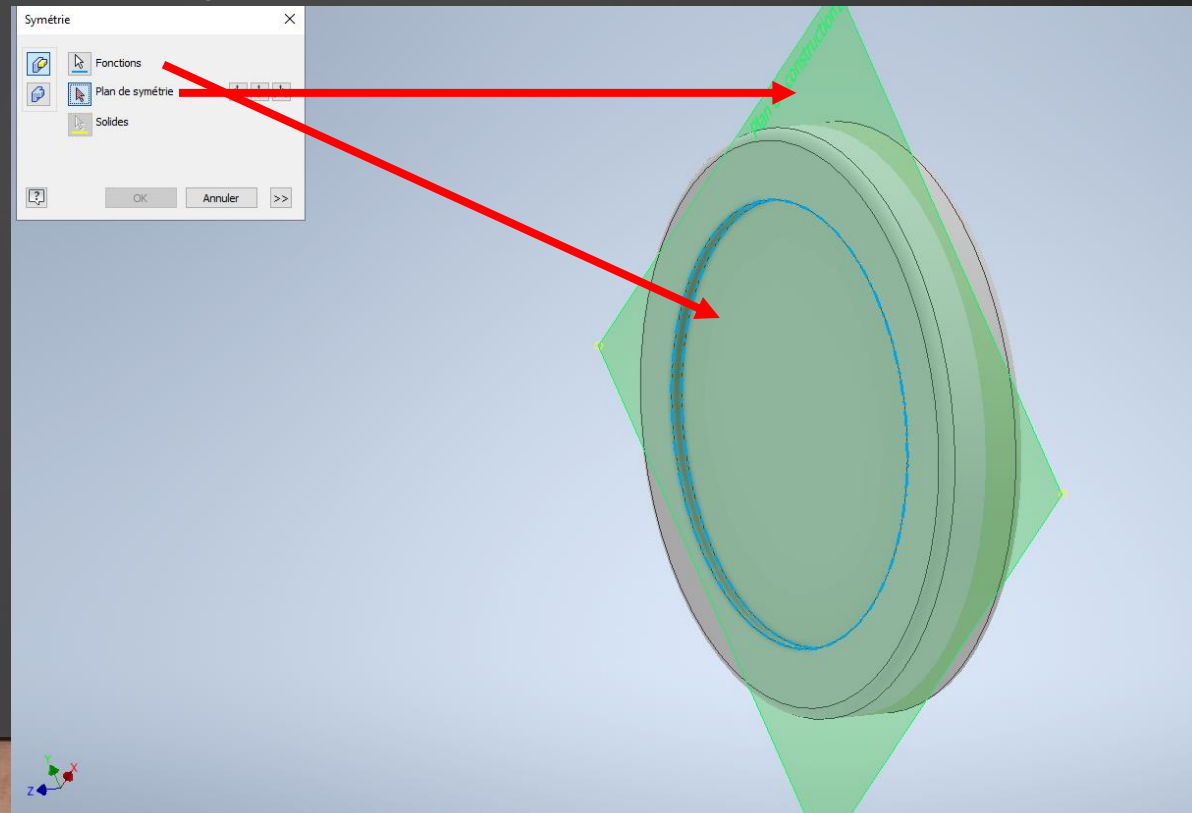


# STEP 14: THE RECESS AT THE MIDDLE OF THE PIECE: THE SYMMETRY

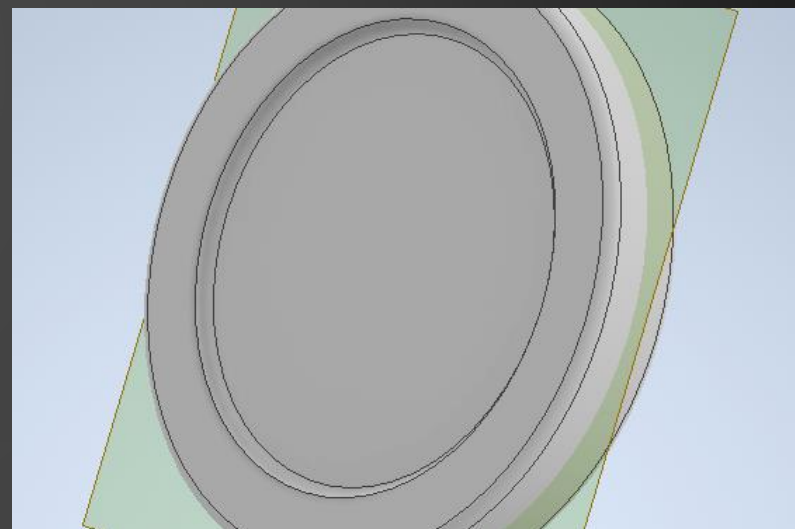
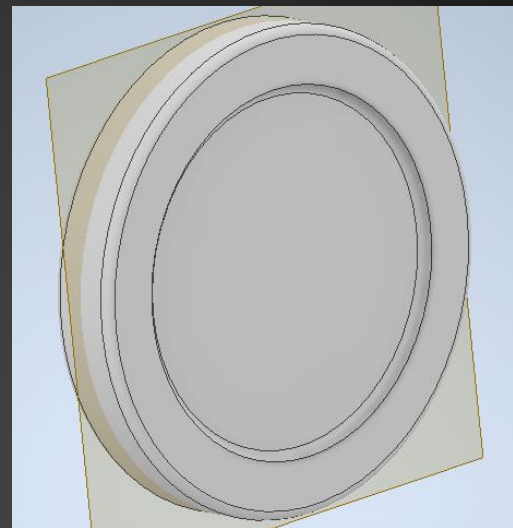
Now, do a symmetry with this icon on the previous plan.



Select this  
settings:



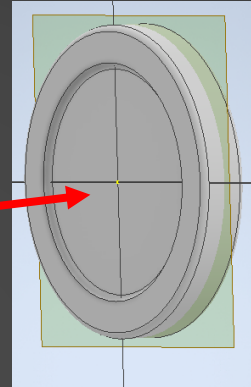
HERE IS THE  
RESULT:



## STEP 15: THE I HOLE: THE SKETCH

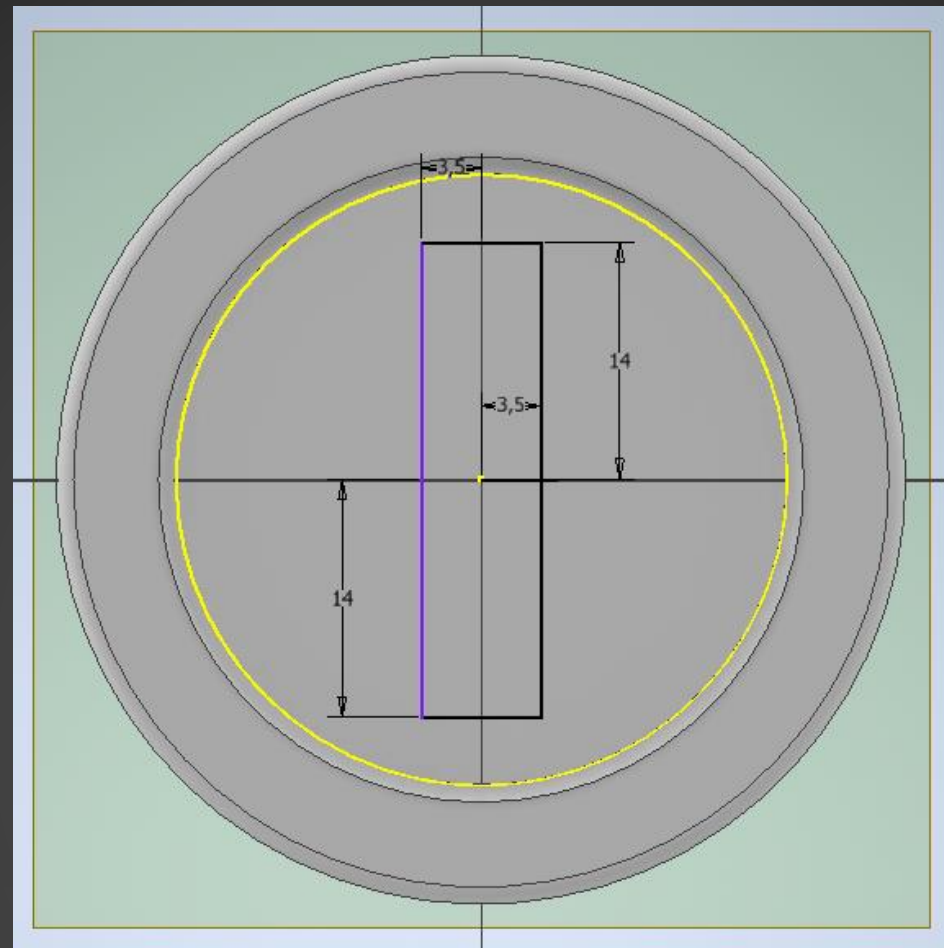


To do this part,  
you have to  
create a new  
sketch on this  
face.



Now, create a I shape on the middle  
of the piece.

In the next page, you will  
have the sketch with the  
dimensions.

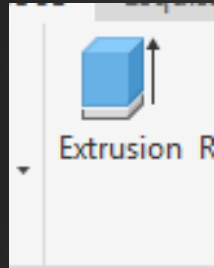


To start, put your mouse on the center of the piece. After, draw a line who go at the right. Her value is 3,5 mm. Now, put an other line in vertical with a value of 14 mm. Finally, repeat the value to do the sketch in the image above and when you have finished, click on « finish the sketch ».



# STEP 16: THE I HOLE: THE EXTRUSION

To do the extrusion, use the tool « extrusion » used before with this image:

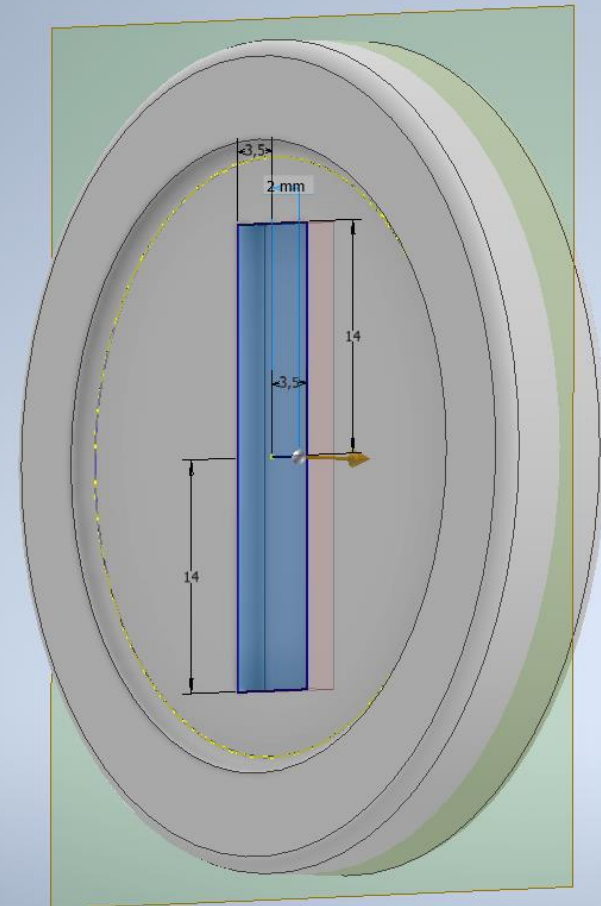
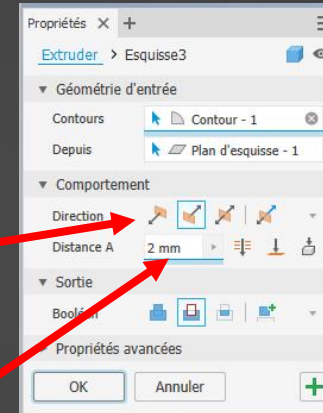


Choose the second icon.

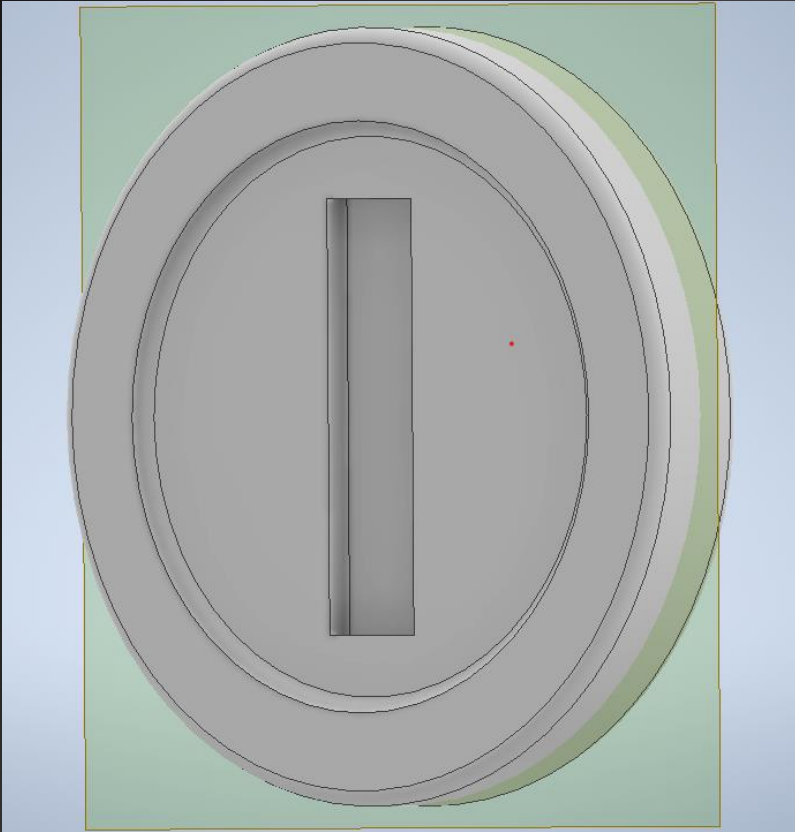
After, click on this tool and also on the previous sketch:

Put 2 mm in this case.

To finish, click on « OK » to confirm.



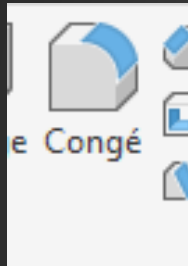
Here, we have the result.



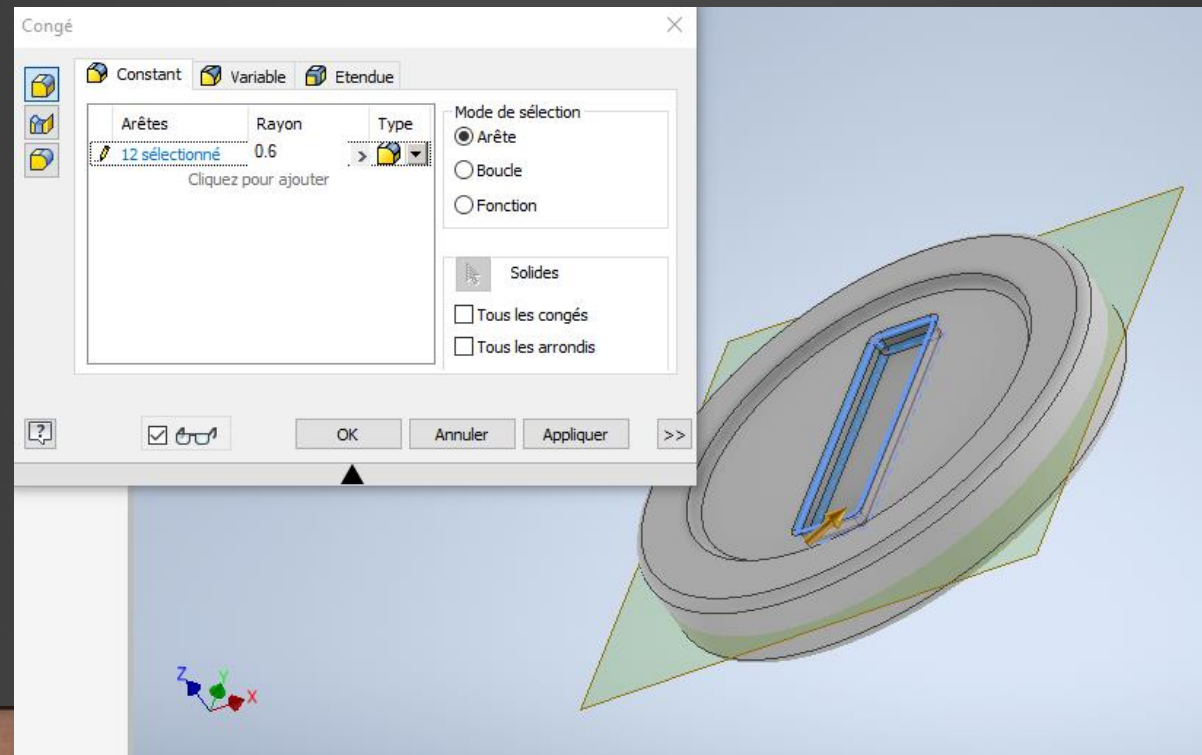
Now, we are gonna to  
had fillet to make it  
more beautiful.

# STEP 17: THE I HOLE: THE FILLET

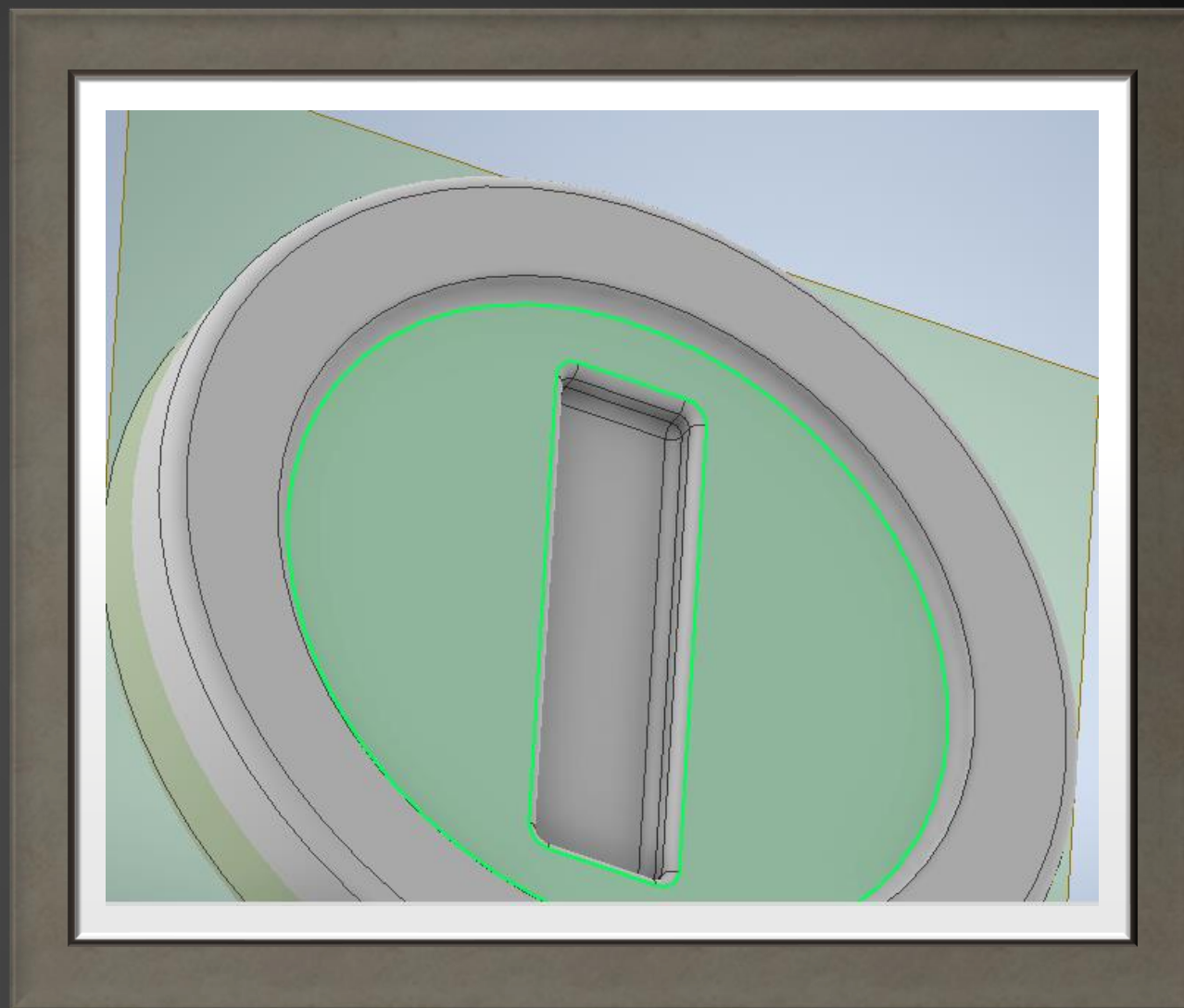
First, click on this icon:



After, click on all the edge of the « I ». Put 0,6 on the value case for the fillet. Finally, simply click on « OK ».



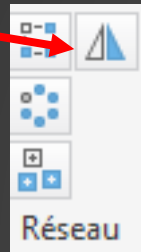
The result that you  
should have is:





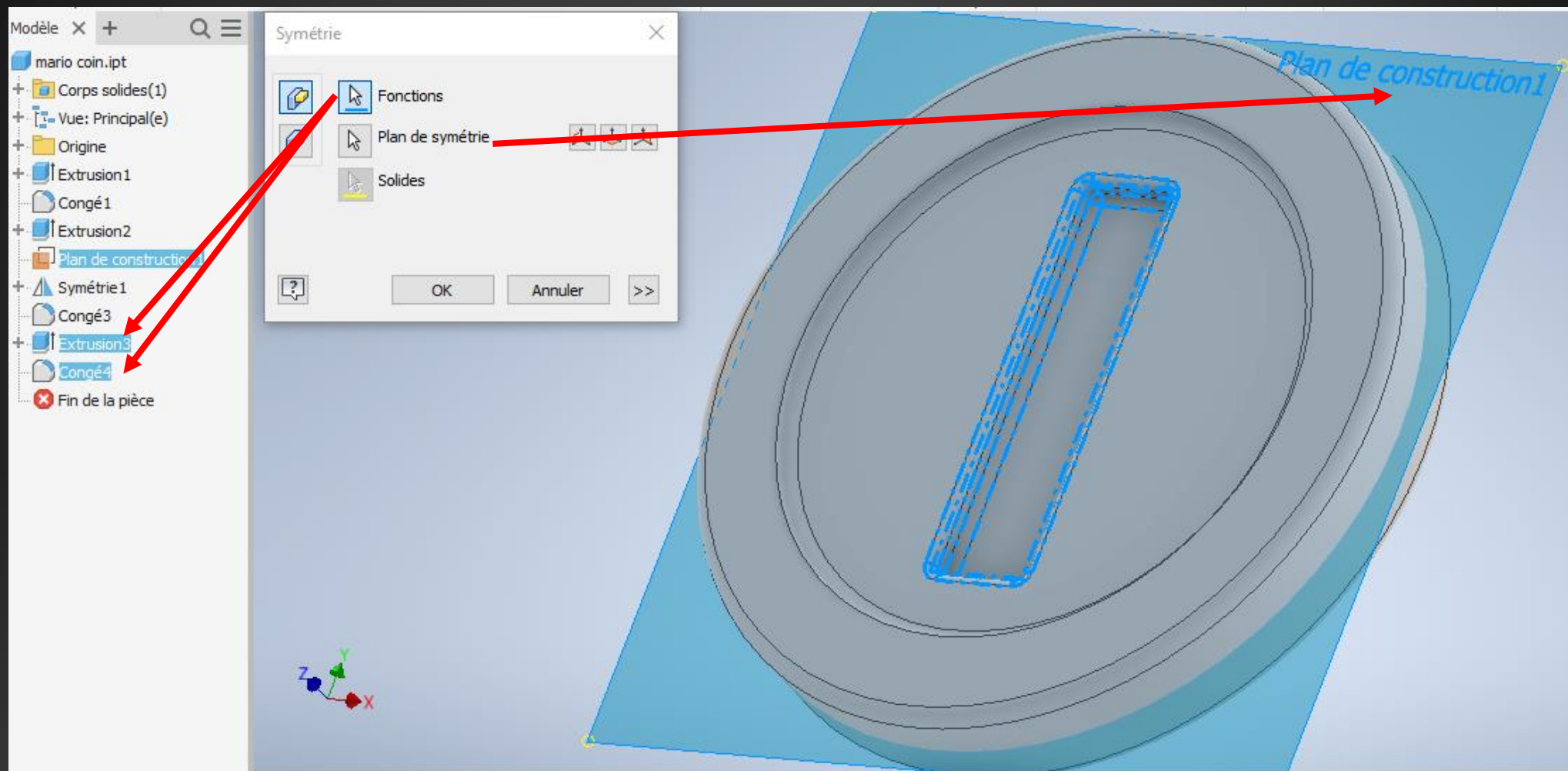
## STEP 18: THE I HOLE: THE SYMMETRY

To do the symmetry, use the same tool as in the step 14.



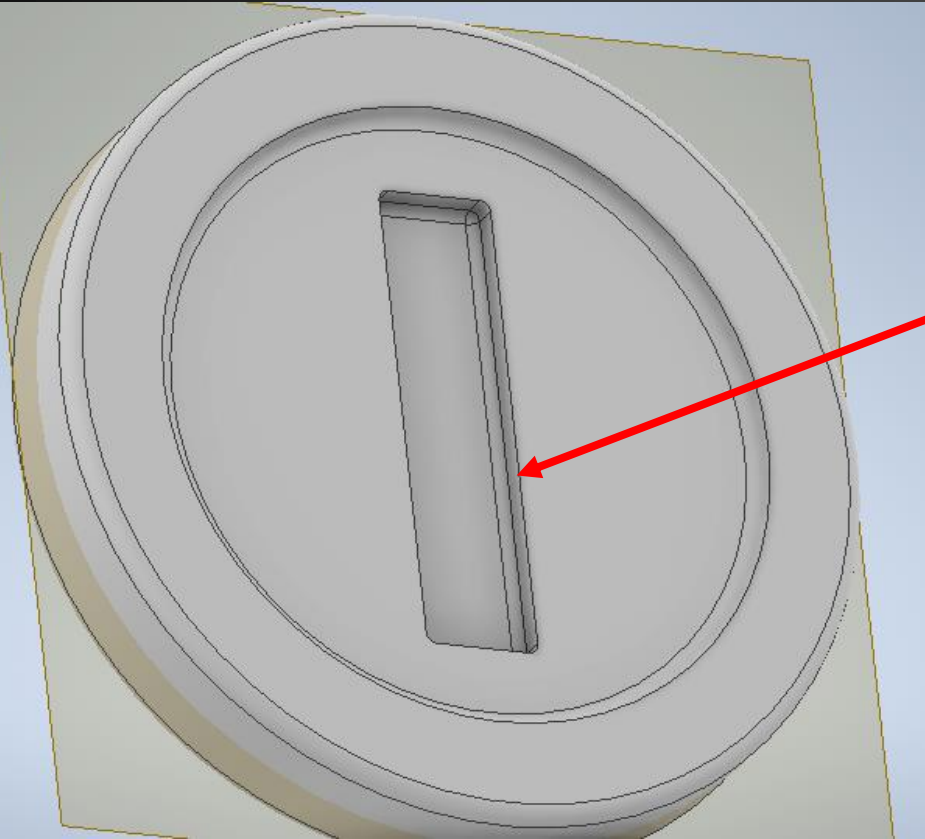
Click on him and select the settings at the next slide.



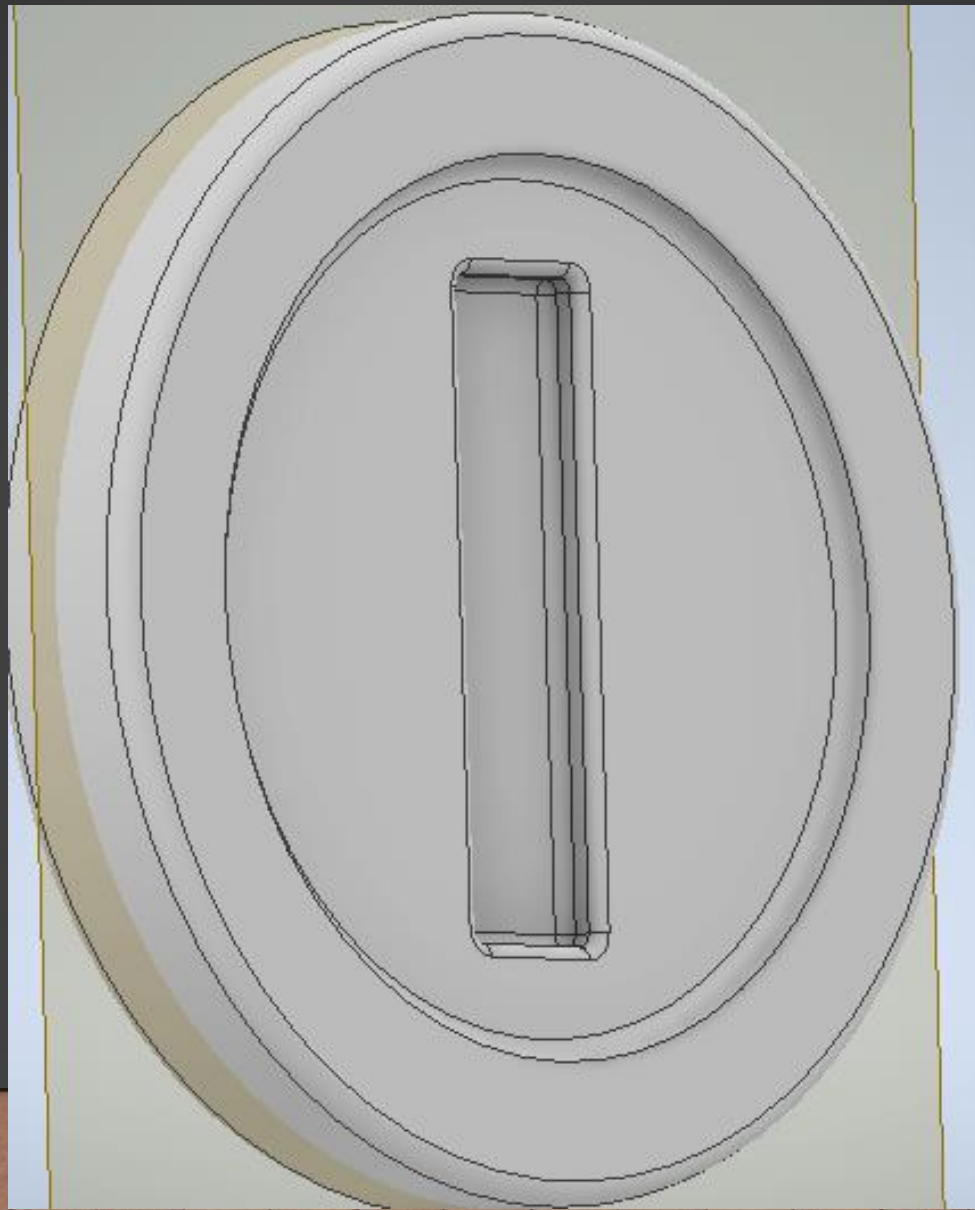


Normally, you have  
this at the other side.

We can see that one  
fillet is not here so we  
have to had him. If this  
is also your case, you  
simply have to select  
the « fillet » tool and  
click on this border  
and finally put 0,6 in  
the value case.

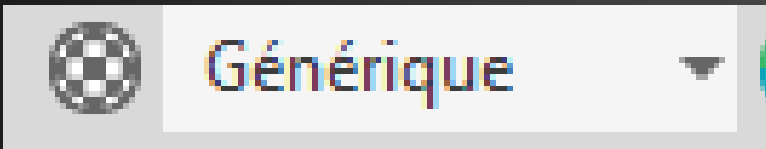


The final results is this:



## STEP 19: THE FINITIONS

So now, we have to add finitions to our mario coin. To do this, we have to add material on the piece with the icon on the top of the screen. He look like this:



After, you simply have to click on it and select the « gold » material. Finally, choose the color « Metal 2400 red ». You can select the color tool at the right of the material tool.



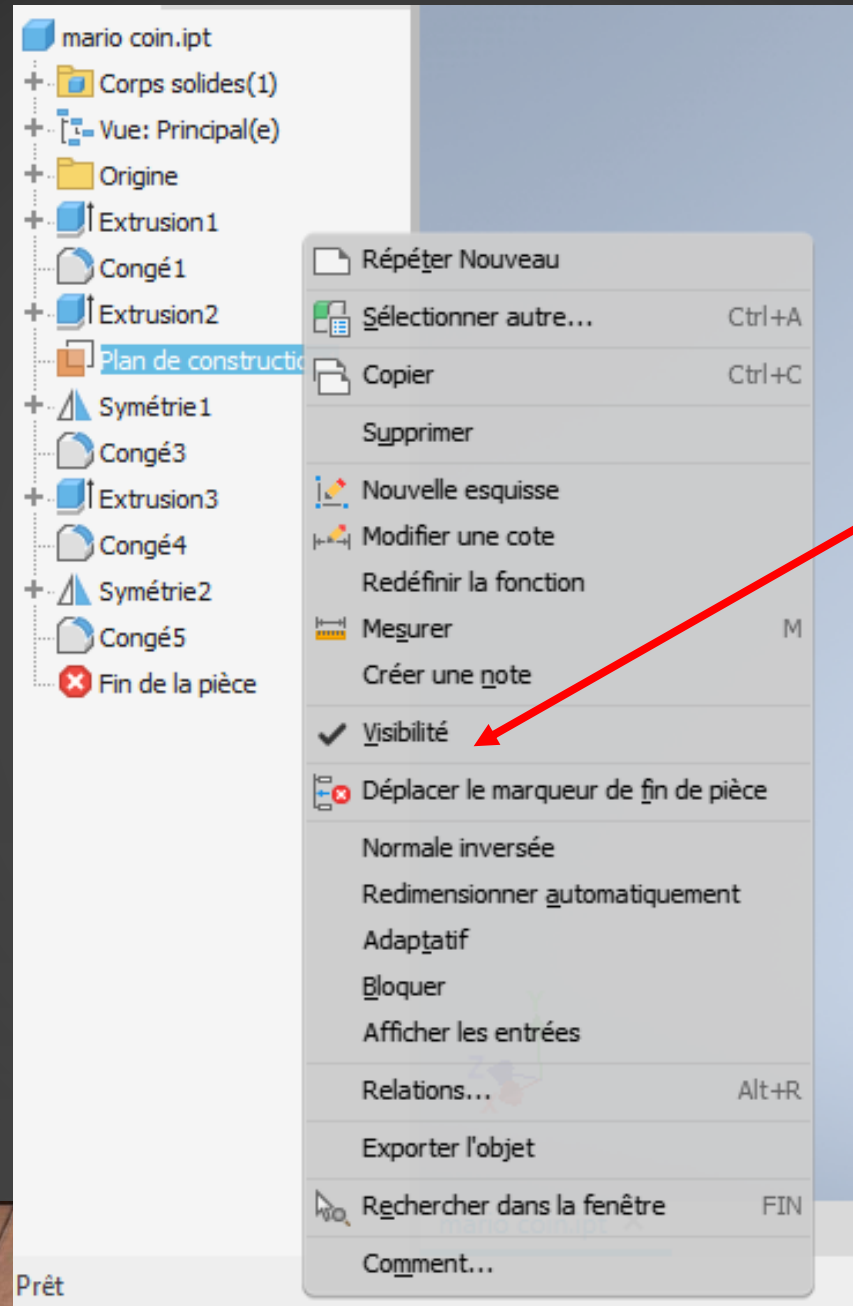


## STEP 20: REMOVE OF THE PLAN

To make your result more beautiful, you can remove the plan that we have add before. Check the next slide to see how we do.



To do this, do a right click on the plan of construction in the column at the left of the screen.



Now, click on visibility to uncheck her.

YOUR FINISHED  
MARIO COIN  
LOOK LIKE THIS:



## STEP 21: AFTER THE MODELISATION

When you have finished the modelisation of your piece, you can print her with a 3d printer, cut with a laser cutter machine or simply enjoy the coin by looking at it.

*The End*