



3D Printing Guidance

Step by Step

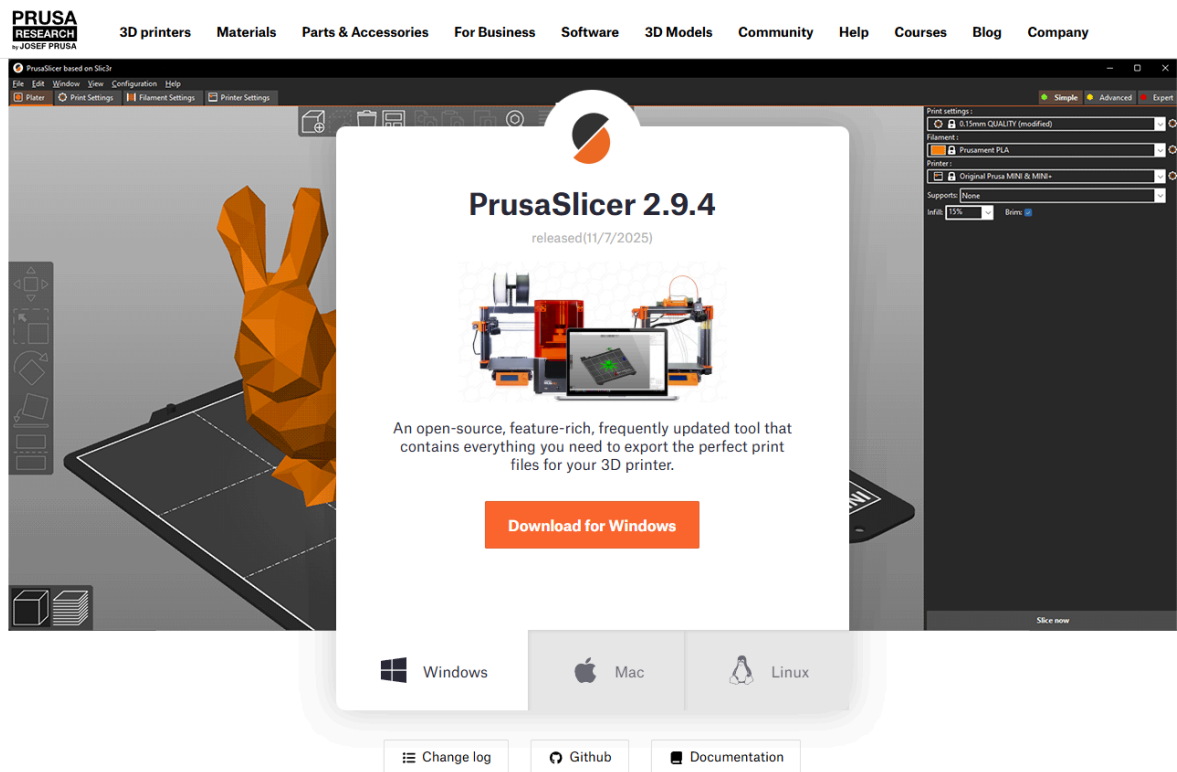
set up Prusa slicer and 3D Printers

Zihan Miao

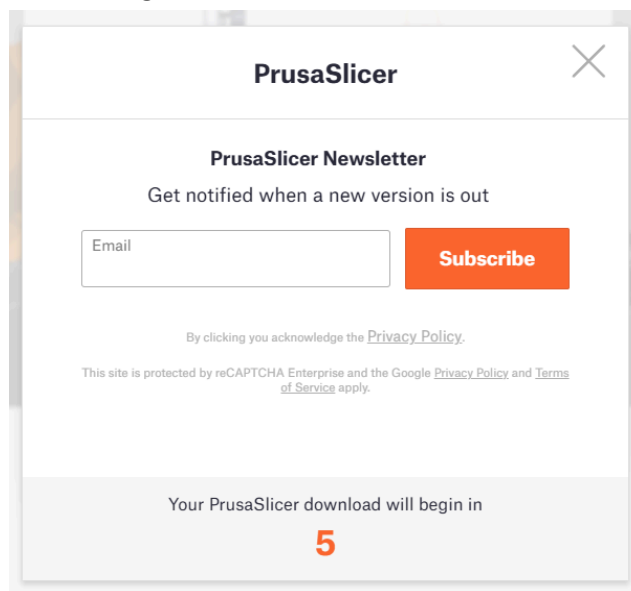
13/11/2025

The main tools we used for 3D printing is **Prusa slicer**


Prusa slicer Download Link- https://www.prusa3d.com/page/prusaslicer_424/



It's free to use and you don't have to sign up or enter your email address. Find the computer system you are using and click download.

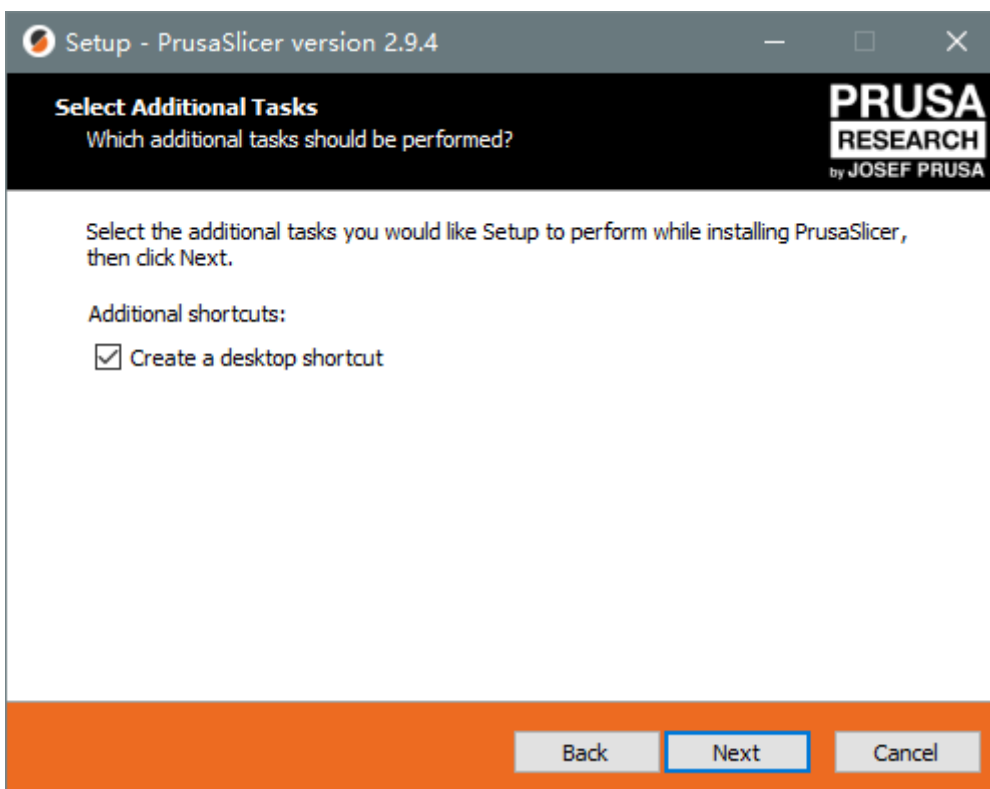
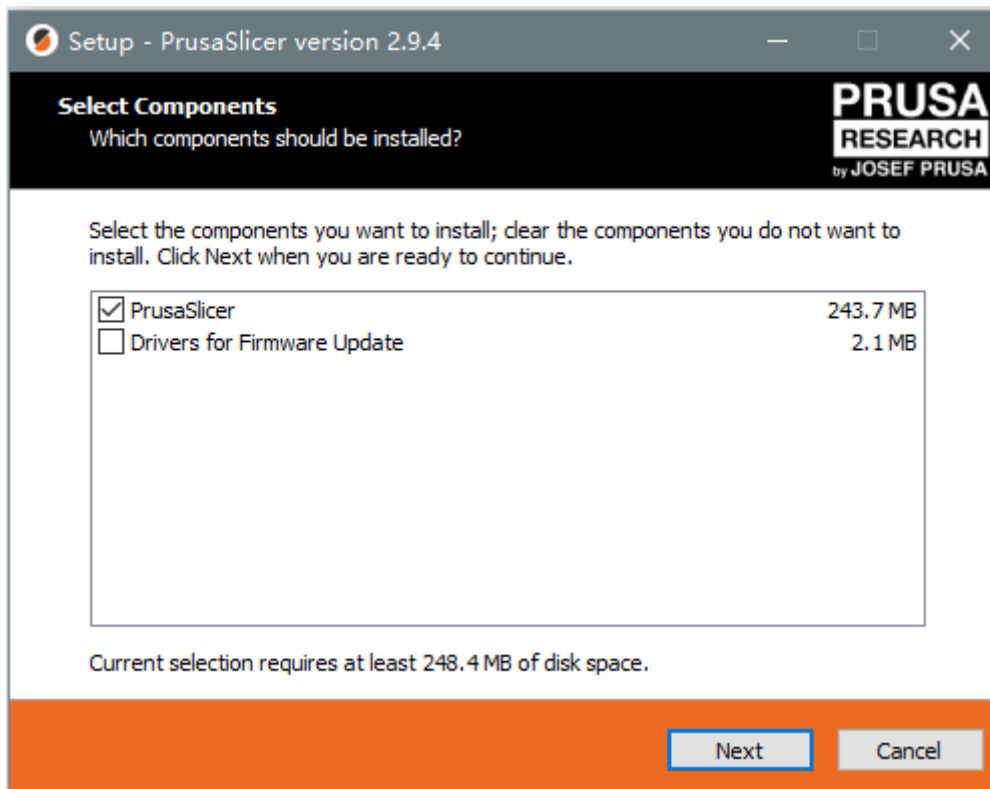


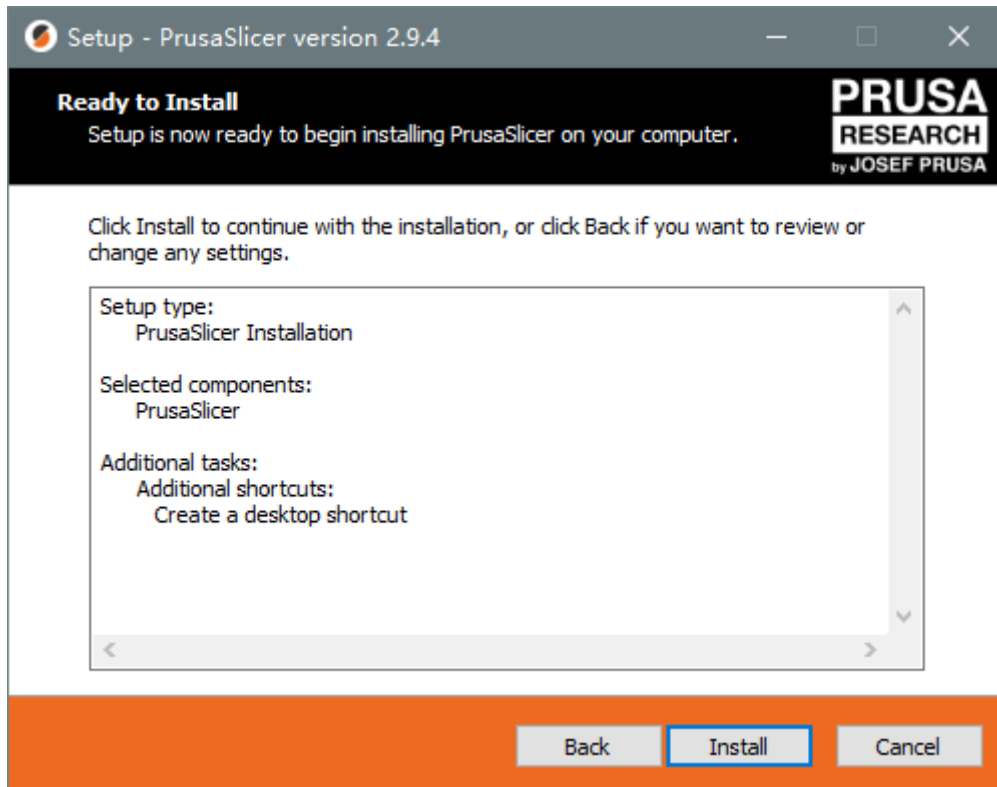
After waiting 10 seconds, it will start downloading.

 prusa3d_win_2_9_4

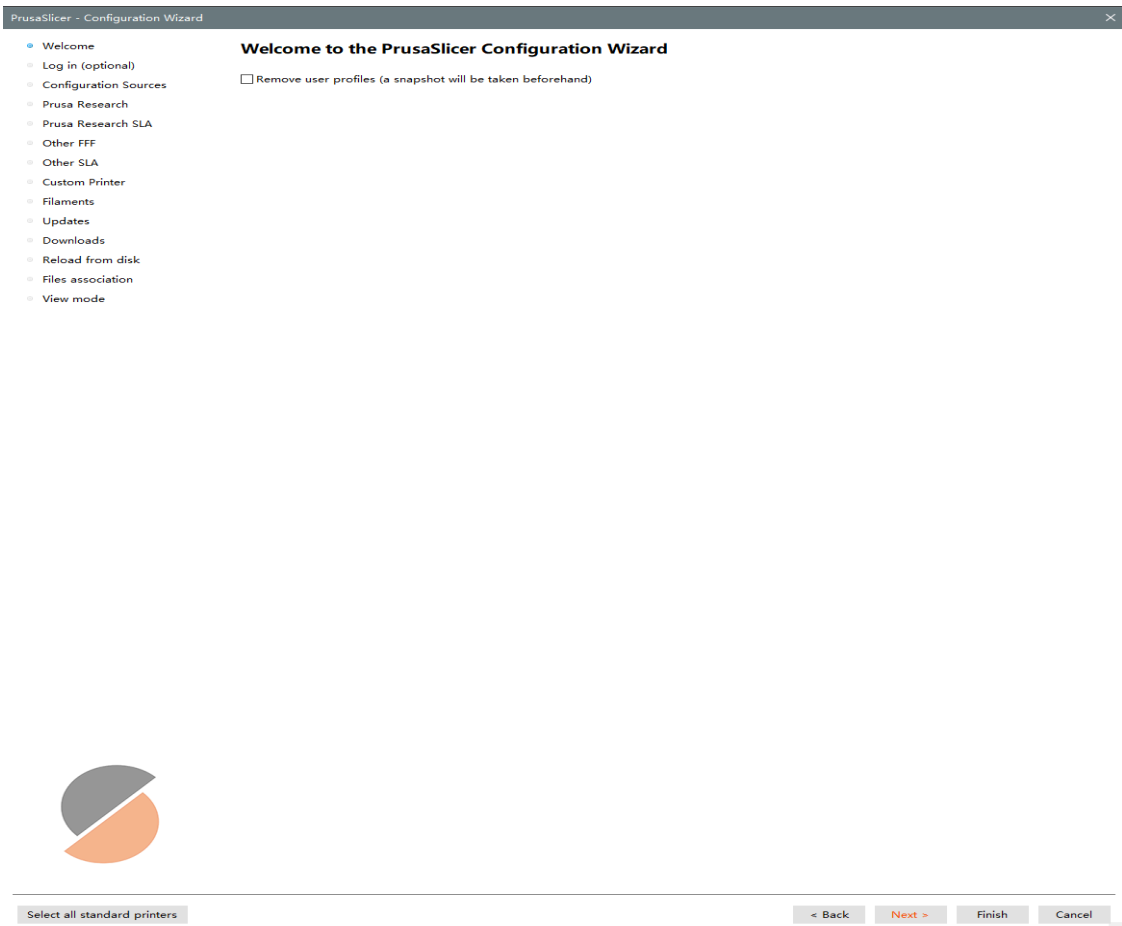
13/11/2025 16:04

After downloading click the file you downloaded then get started to set up the installation.






You don't have to do any other settings in this installation, just click ***Next-Next-Install-Finish*** the only setting might be the folder path, choose any folder path you want it be then click Finish.



After installation you will see the welcome page, Keep clicking Next till Prusa research, select **Original Prusa MK4 Input Shaper 0.4 mm nozzle**. ***Important*** Choose the right printer.

- Welcome
- Log in (optional)
- Configuration Sources
- Prusa Research
- Prusa Research SLA
- Other FFF
- Other SLA
- Custom Printer
- Filaments
- Updates
- Downloads
- Reload from disk
- Files association
- View mode

MK4 Family

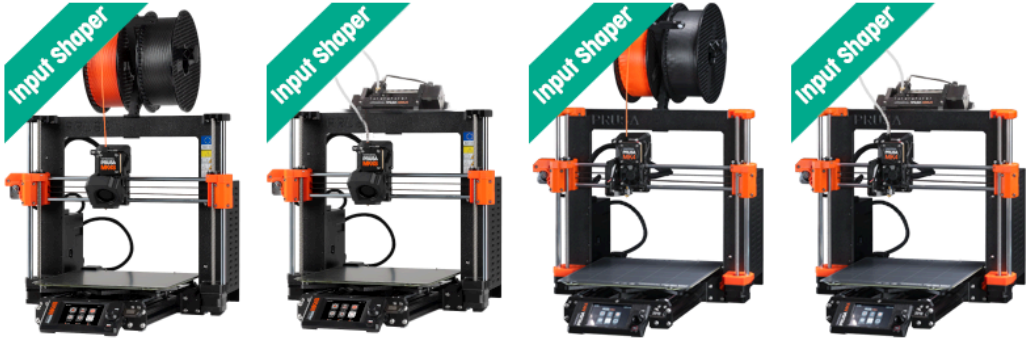


All standard All None

<p>Original Prusa MK4S</p> <p><input type="checkbox"/> HF0.4 mm nozzle</p> <p>Alternate nozzles:</p> <p><input type="checkbox"/> HF0.5 mm nozzle</p> <p><input type="checkbox"/> HF0.6 mm nozzle</p> <p><input type="checkbox"/> HF0.8 mm nozzle</p> <p><input type="checkbox"/> 0.25 mm nozzle</p> <p><input type="checkbox"/> 0.3 mm nozzle</p> <p><input type="checkbox"/> 0.4 mm nozzle</p> <p><input type="checkbox"/> 0.5 mm nozzle</p> <p><input type="checkbox"/> 0.6 mm nozzle</p> <p><input type="checkbox"/> 0.8 mm nozzle</p>	<p>Original Prusa MK4S MMU3</p> <p><input type="checkbox"/> 0.4 mm nozzle</p> <p>Alternate nozzles:</p> <p><input type="checkbox"/> HF0.4 mm nozzle</p>	<p>Original Prusa MK4 Input Shaper</p> <p><input checked="" type="checkbox"/> 0.4 mm nozzle</p> <p>Alternate nozzles:</p> <p><input type="checkbox"/> 0.25 mm nozzle</p> <p><input type="checkbox"/> 0.3 mm nozzle</p> <p><input type="checkbox"/> 0.5 mm nozzle</p> <p><input type="checkbox"/> 0.6 mm nozzle</p> <p><input type="checkbox"/> 0.8 mm nozzle</p> <p><input type="checkbox"/> HF0.4 mm nozzle</p> <p><input type="checkbox"/> HF0.5 mm nozzle</p> <p><input type="checkbox"/> HF0.6 mm nozzle</p> <p><input type="checkbox"/> HF0.8 mm nozzle</p>	<p>Original Prusa MK4 MMU3</p> <p><input type="checkbox"/> 0.4 mm nozzle</p> <p>Alternate nozzles:</p> <p><input type="checkbox"/> HF0.4 mm nozzle</p>
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Then click finish and you will finish the printer selection.

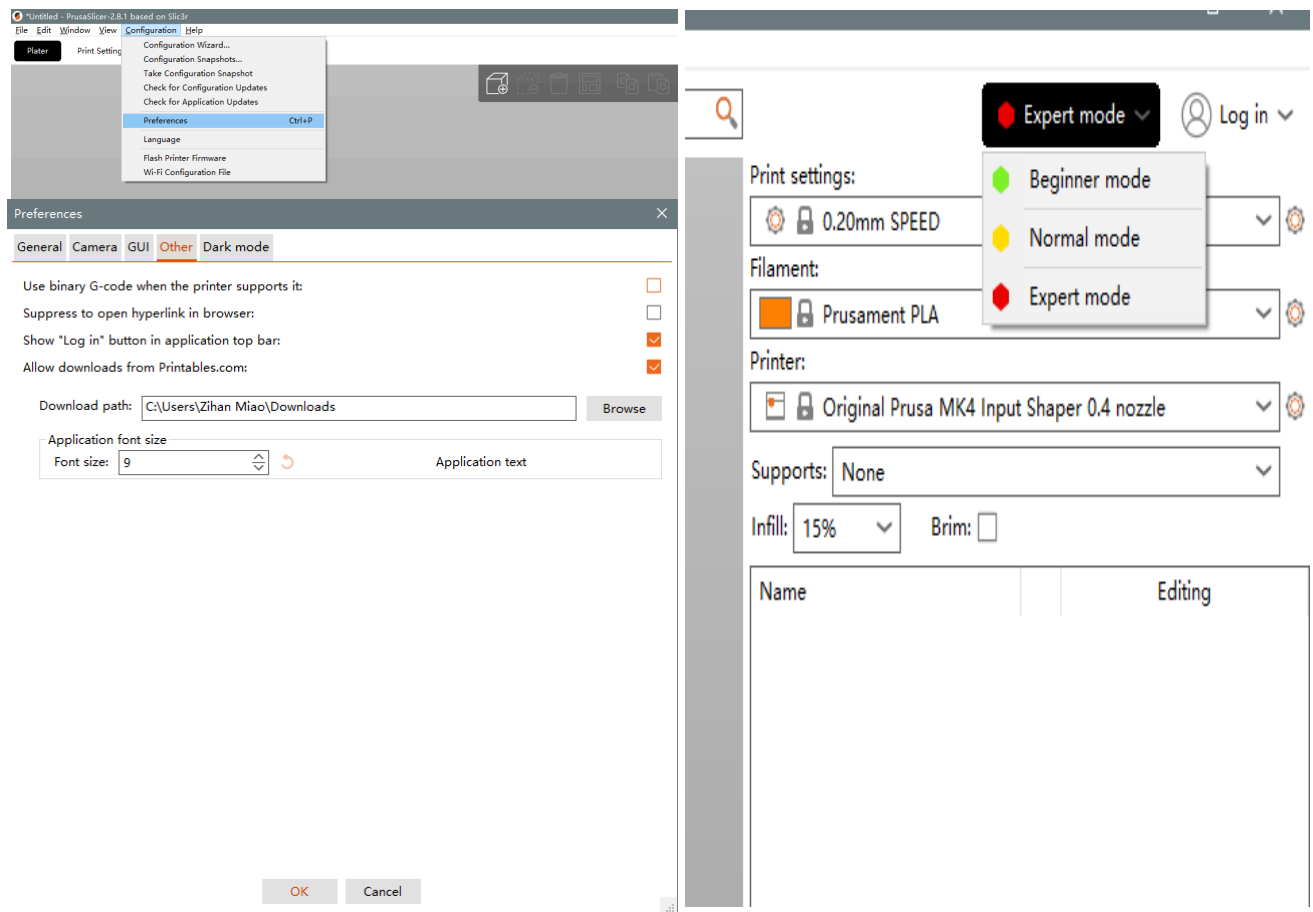
MK4 Family



All standard All None

<p>Original Prusa MK4S</p> <p><input type="checkbox"/> HF0.4 mm nozzle</p> <p>Alternate nozzles:</p> <p><input type="checkbox"/> HF0.5 mm nozzle</p> <p><input type="checkbox"/> HF0.6 mm nozzle</p> <p><input type="checkbox"/> HF0.8 mm nozzle</p> <p><input type="checkbox"/> 0.25 mm nozzle</p> <p><input type="checkbox"/> 0.3 mm nozzle</p> <p><input type="checkbox"/> 0.4 mm nozzle</p>	<p>Original Prusa MK4S MMU3</p> <p><input type="checkbox"/> 0.4 mm nozzle</p> <p>Alternate nozzles:</p> <p><input type="checkbox"/> HF0.4 mm nozzle</p>	<p>Original Prusa MK4 Input Shaper</p> <p><input checked="" type="checkbox"/> 0.4 mm nozzle</p> <p>Alternate nozzles:</p> <p><input type="checkbox"/> 0.25 mm nozzle</p> <p><input type="checkbox"/> 0.3 mm nozzle</p> <p><input type="checkbox"/> 0.5 mm nozzle</p> <p><input type="checkbox"/> 0.6 mm nozzle</p> <p><input type="checkbox"/> 0.8 mm nozzle</p> <p><input type="checkbox"/> HF0.4 mm nozzle</p>	<p>Original Prusa MK4 MMU3</p> <p><input type="checkbox"/> 0.4 mm nozzle</p> <p>Alternate nozzles:</p> <p><input type="checkbox"/> HF0.4 mm nozzle</p>
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< Back
Next >
Finish
Cancel

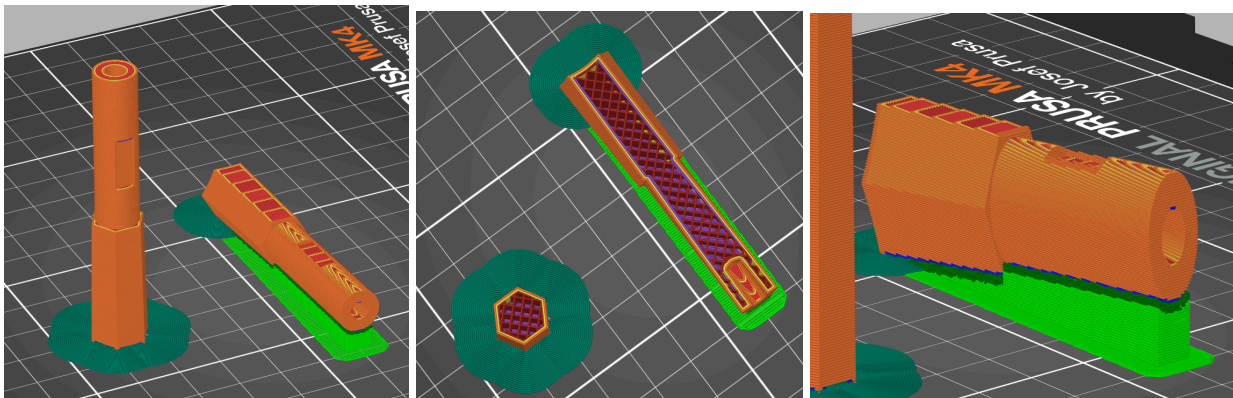


Next step Configuration-Preference-Other-**Unselect** Use binary G-code when the printer supports it then click OK.

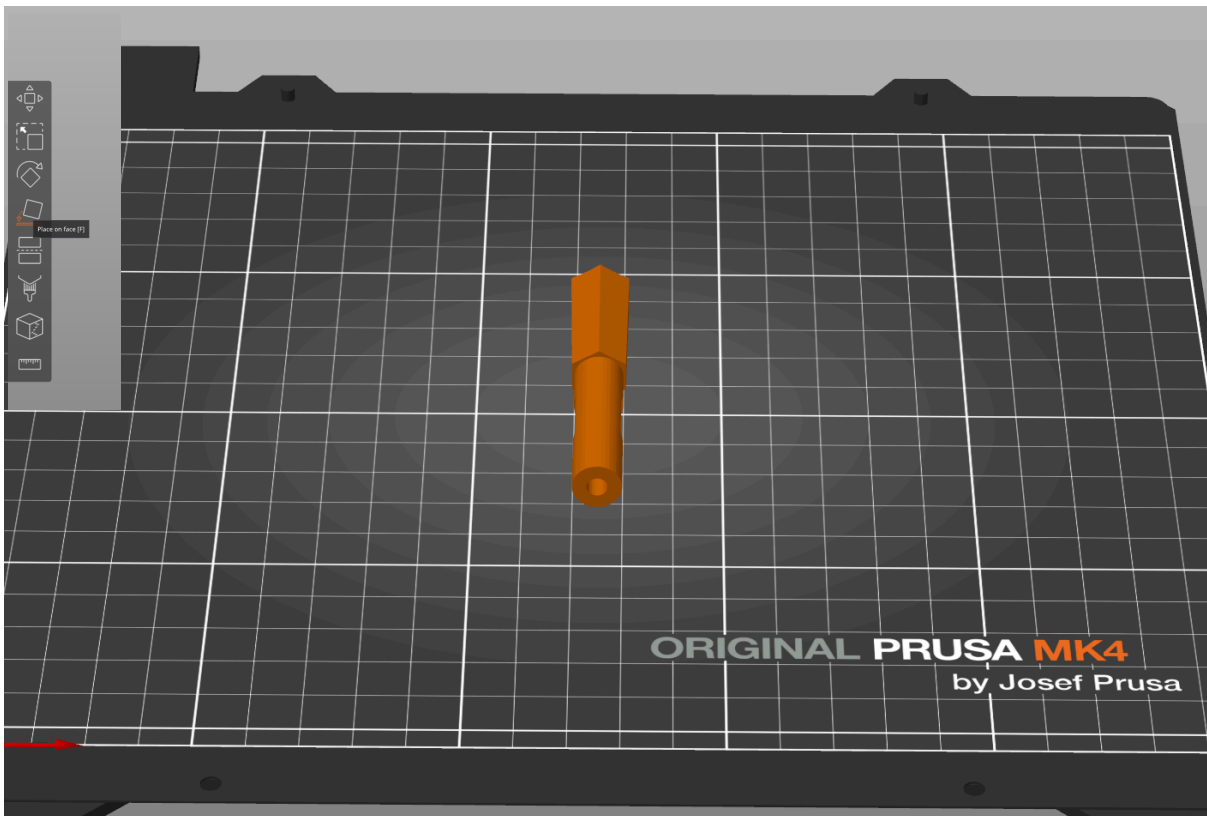
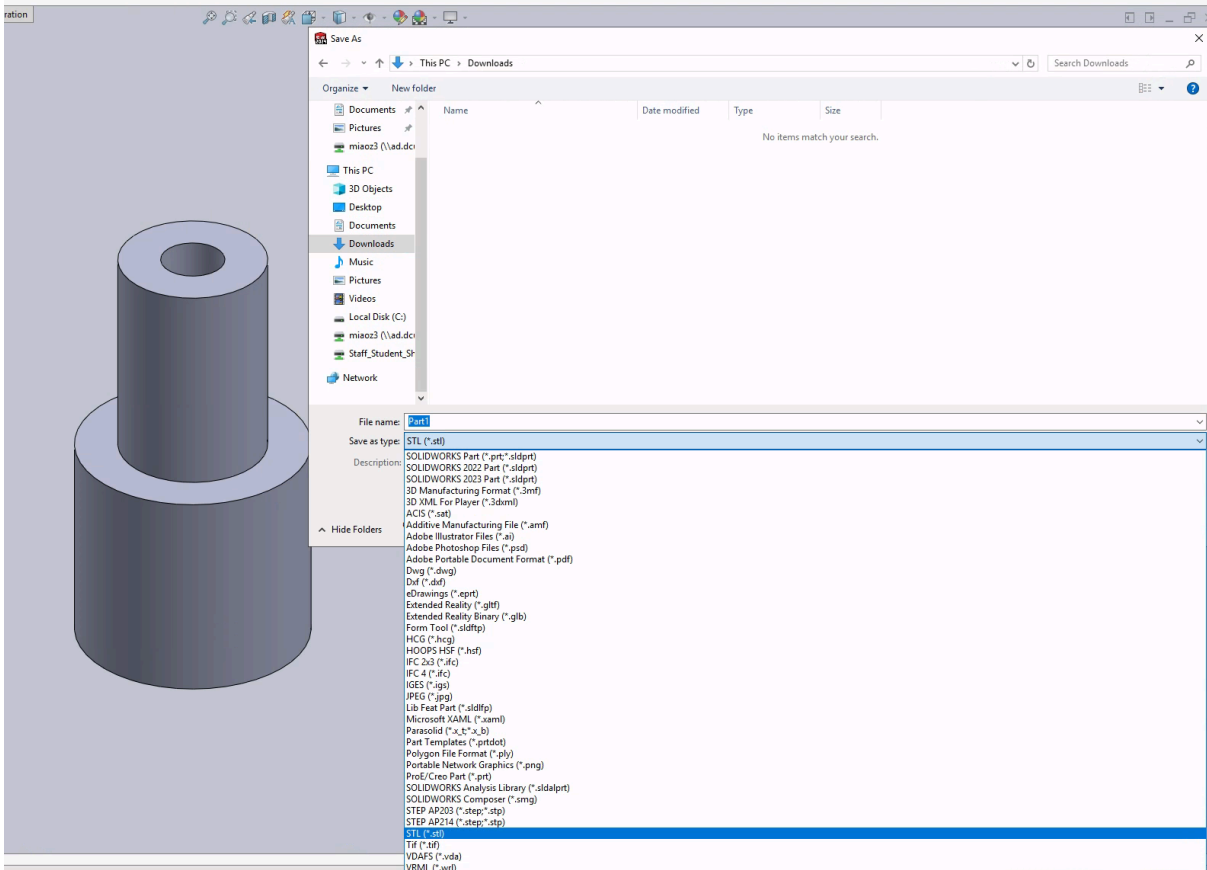
At the right side first of all change the mode from beginner mode to Expert mode.

Under **Filament** Choose **Prusament PLA** as the print material.

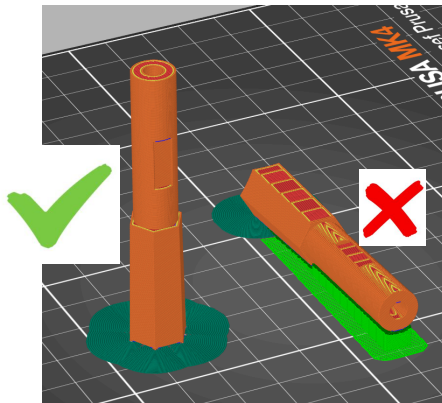
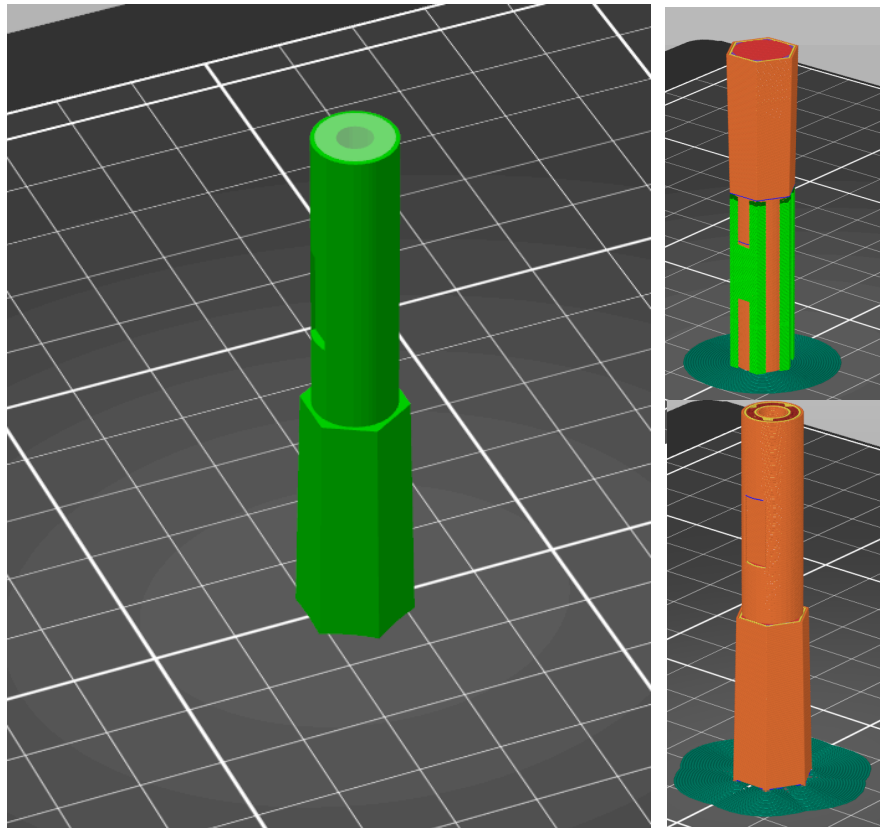
Depending on your needs change the supports, infill and brim for your print. ***Important*** Add **Brim** every time.



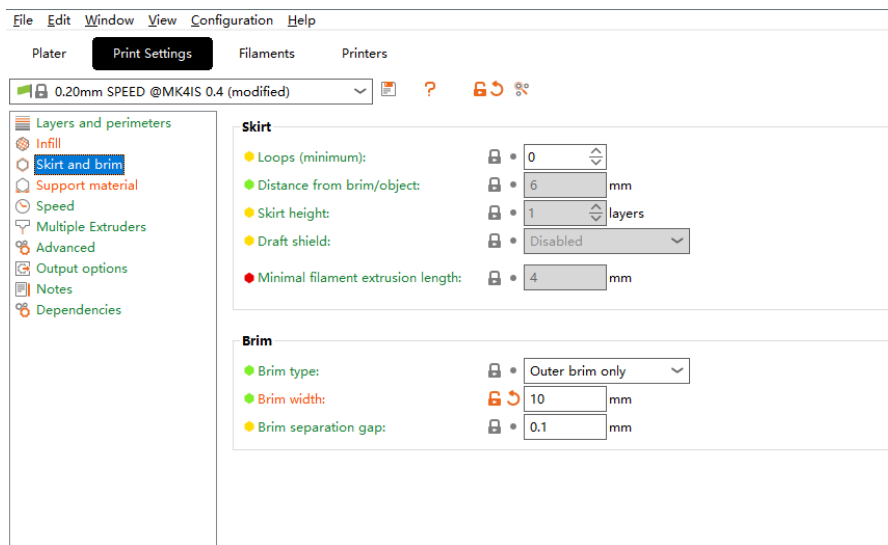
Save your Solidworks Part as **STL FILE**. Import STL FILE into prusa slicer.



Click the part to select it and at the right side select place on face to find the best position. **Best Position means better contact area with the plate and less support you need.**



You could change the brim width and support details in **Print settings**, skirt brims width depends on how big or tall of your part, **bigger or taller part the wider brim you need.**



After slicing you will see these information at the bottom right, these information shows you how many grams materials you will use and how long it will take to print it out.

Object manipulation

World coordinates X Y Z

Position:	124.17	104.88	33.5	mm
Rotate (relative):	0	0	0	°
Scale factors:	100	100	100	%
Size [World]:	12	13.86	67	mm

Inches

Info

Size: 12.00 x 13.86 x 67.00 Volume: 6006.81

Facets: 540 (1 shell)

No errors detected

Sliced Info

Used Filament (g)	5.05 (198.05)
(including spool)	
Used Filament (m)	1.69
Used Filament (mm ³)	4071.46
Cost	0.14
Estimated printing time:	
- normal mode	46m
- stealth mode	47m

Export G-code

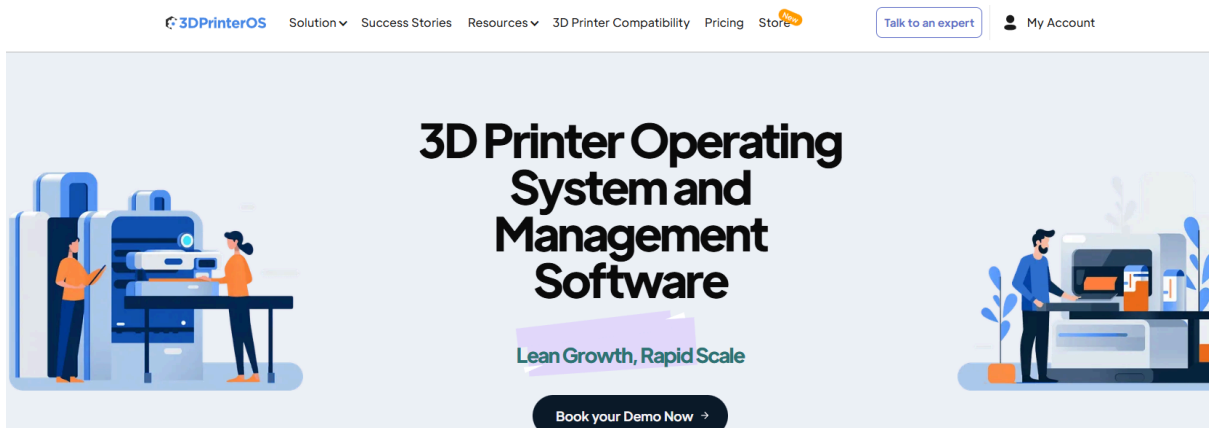
Then click Export G-code, you will get your **GCODE FILE.**

Rotary Broaching Demo Rig - 3D Printed Broach Cutter_0.4n_0.2mm_PLA_MK4IS_46m

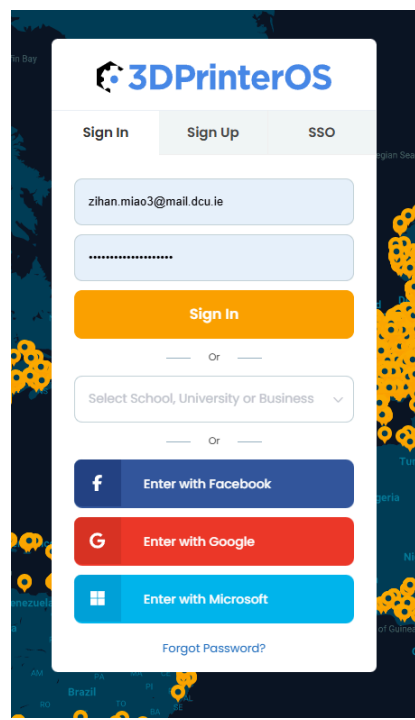
G-code files (*.gcode, *.gco, *.bgcode, *.bgc, *.g, *.ngc)

We will use the other website tool to help us connect the workshop printer, we will upload our Gcode file to **3DPrinterOS** and print the part by internet.

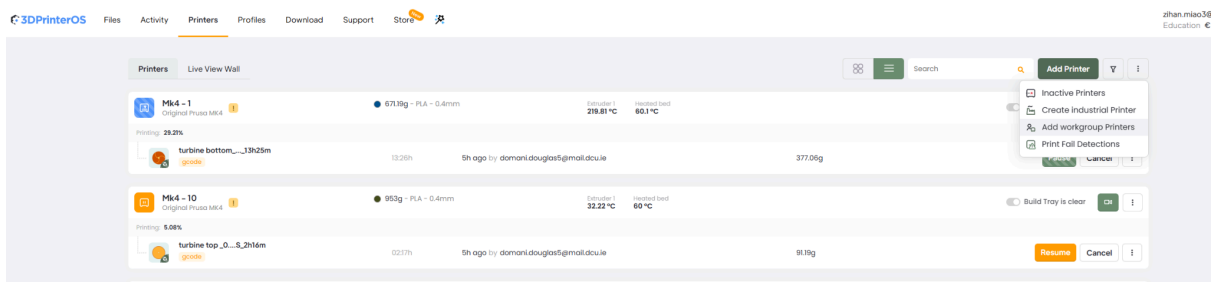
3DPrinterOS-<https://www.3dprinter.com/>



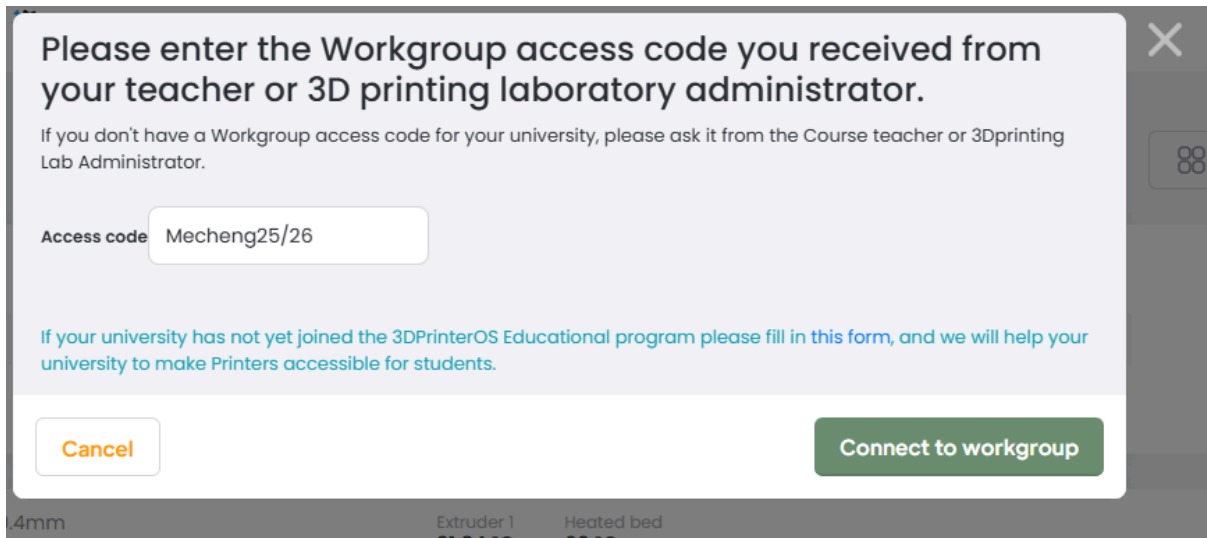
Click My Account and click Enter with google, use your student email address to sign in.



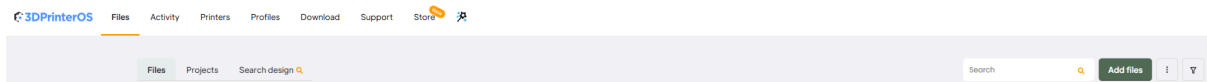
Under Add printer click add workshop printers.



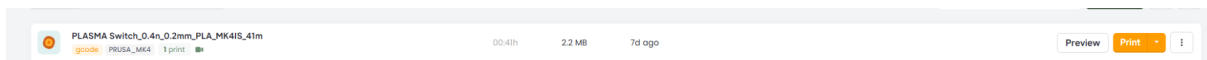
Enter our Access code- **Mecheng25/26** to connect workshop printers.



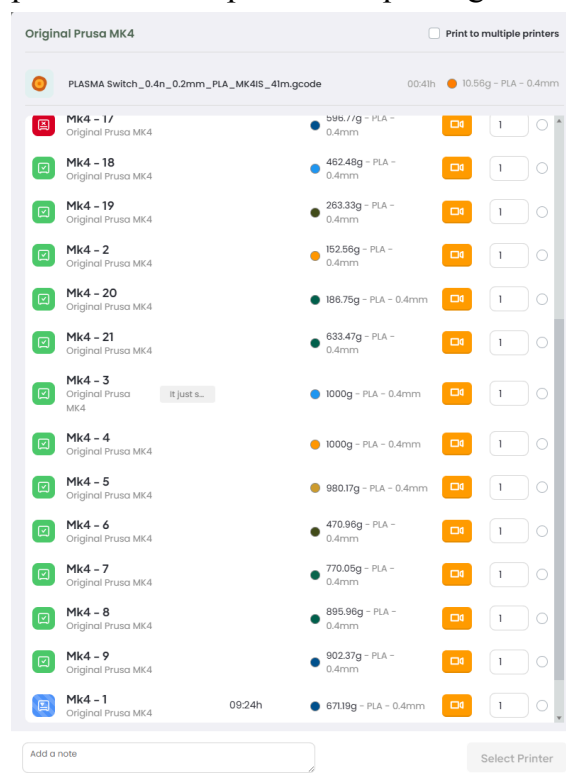
Under File click add file to upload the **GCODE FILE**.



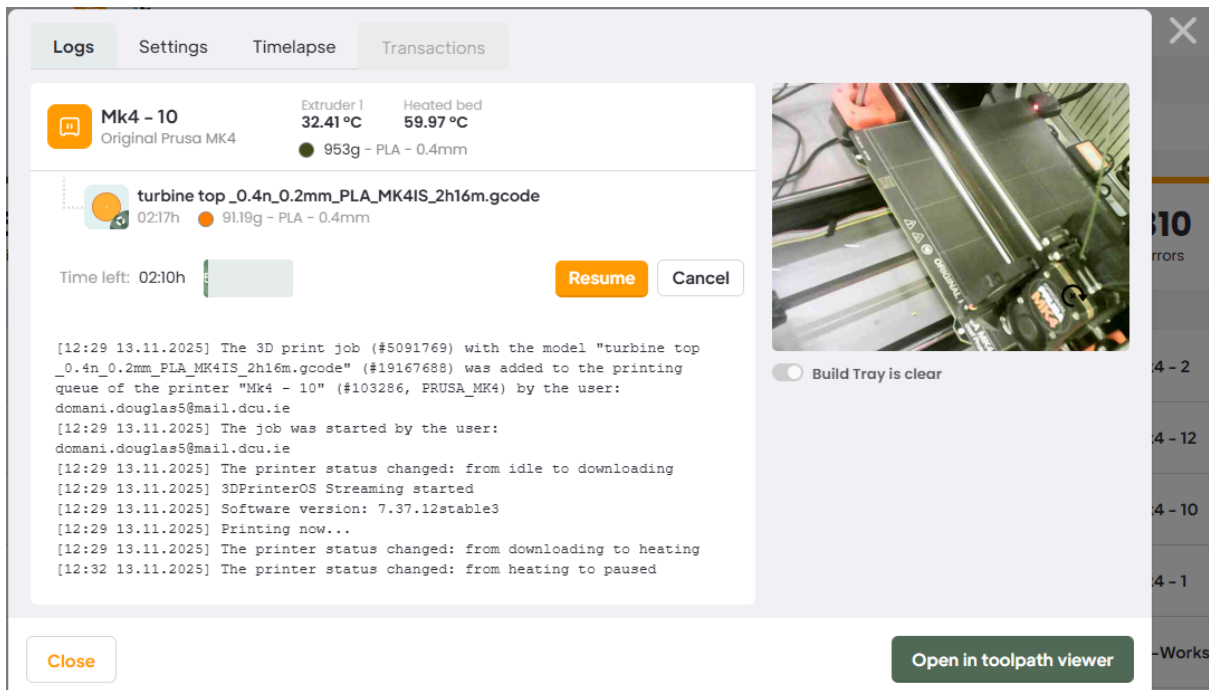
Then you will see the list shows like below, click print to print your part.



Then you will see all printers we have in the workshop, choose any printer in green(free to use), red means bed is not clear, blue means someone is using. **DO NOT** queue your print, your part will fail to print after queuing.



After all you will see this page that means your part is printing, check the time it will cost and pick it when it's finished.



The screenshot displays a control panel for a 3D printer. At the top, there are tabs for 'Logs', 'Settings', 'Timelapse', and 'Transactions'. The main area shows a print job titled 'Mk4 - 10' (Original Prusa MK4) with a filament weight of 953g and a layer height of 0.4mm. The extruder temperature is 32.41°C and the heated bed is at 59.97°C. The current job is 'turbine top_0.4n_0.2mm_PLA_MK4IS_2h16m.gcode', which has been printing for 02:17h with 91.19g of filament used. A progress bar indicates the time left is 02:10h. There are 'Resume' and 'Cancel' buttons. A log window shows the following messages:

```
[12:29 13.11.2025] The 3D print job (#5091769) with the model "turbine top_0.4n_0.2mm_PLA_MK4IS_2h16m.gcode" (#19167688) was added to the printing queue of the printer "Mk4 - 10" (#103286, PRUSA_MK4) by the user: domani.douglas5@mail.dcu.ie  
[12:29 13.11.2025] The job was started by the user: domani.douglas5@mail.dcu.ie  
[12:29 13.11.2025] The printer status changed: from idle to downloading  
[12:29 13.11.2025] 3DPrinterOS Streaming started  
[12:29 13.11.2025] Software version: 7.37.12stable3  
[12:29 13.11.2025] Printing now...  
[12:29 13.11.2025] The printer status changed: from downloading to heating  
[12:32 13.11.2025] The printer status changed: from heating to paused
```

On the right, there is a live camera feed of the printer's nozzle and a 'Build Tray is clear' indicator. At the bottom, there are 'Close' and 'Open in toolpath viewer' buttons.

Well Done !!!

This is a brief introduction, you can continue to explore how to use these two tools more professionally to complete your project. I wish you all the best in your project.