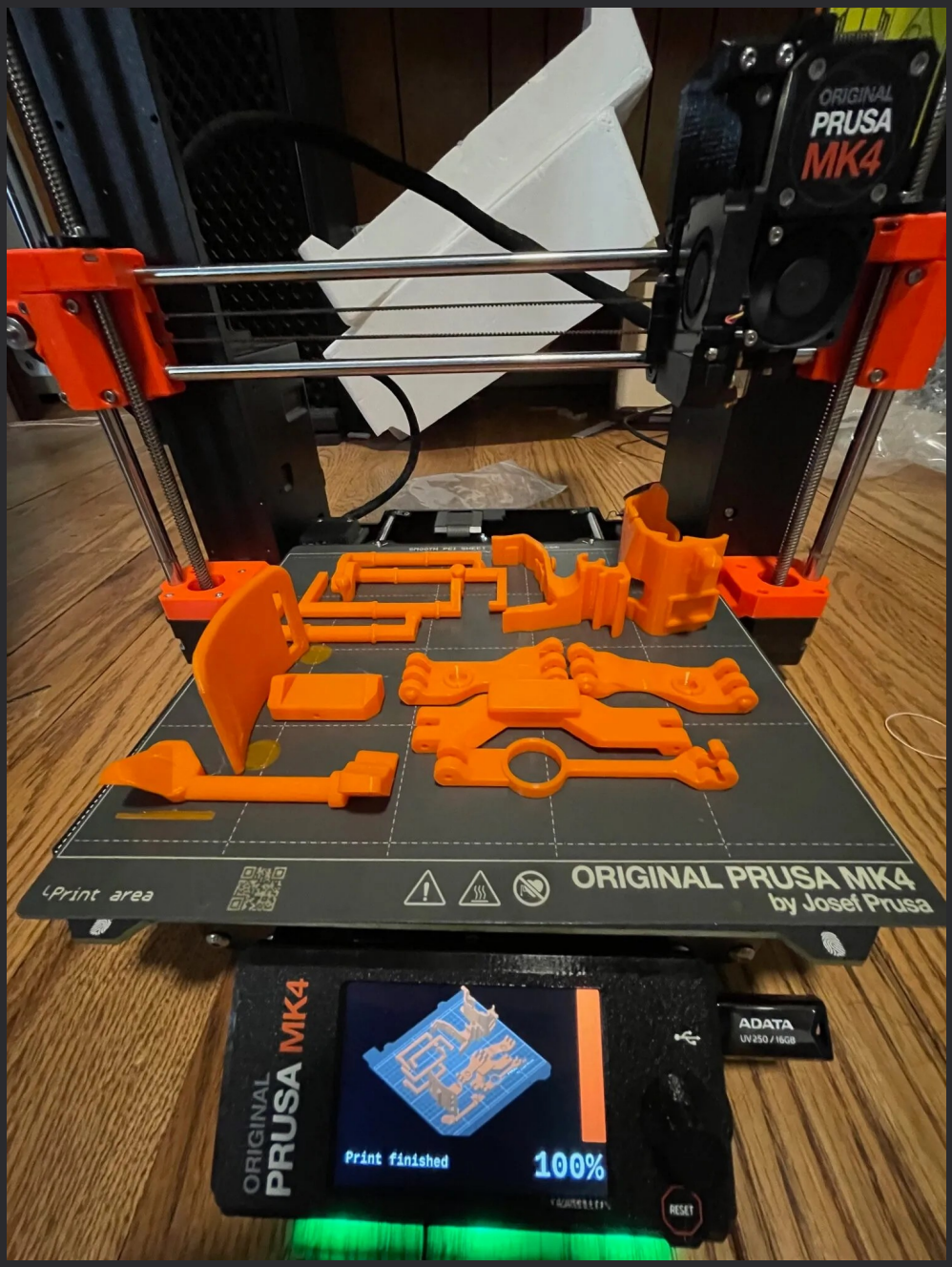
Additive Manufacturing Integration Proposal

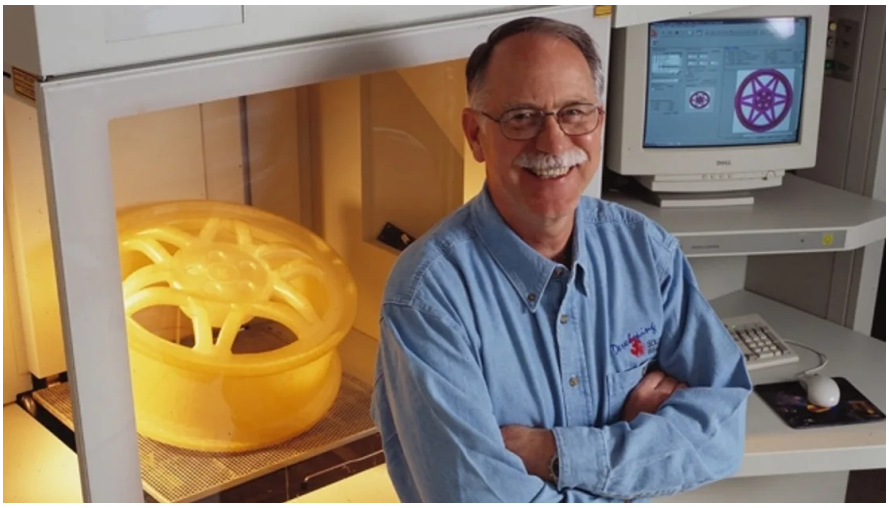


By John Eddy

3D Printers:

New-Old Technology

Although often seen as cutting-edge, 3D printing originated in the 1980s, with 3D Systems releasing the first printer in 1987.



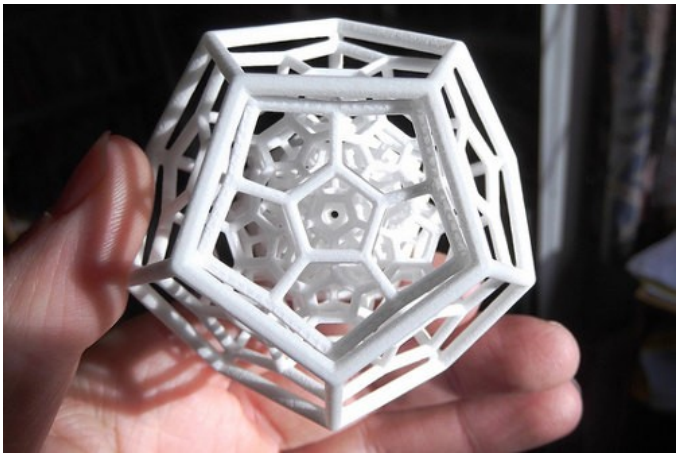
First 3D printer Inventor Chuck Hull 1983

Today, thanks to expired patents and technological advances, it's more accessible and economical than ever.

While not a replacement for CNC machines, 3D printers are simpler and safer to operate, with skills that easily translate from CNC to 3D printing. Making them cheap & easy to integrate.

Strengths of 3D Printing

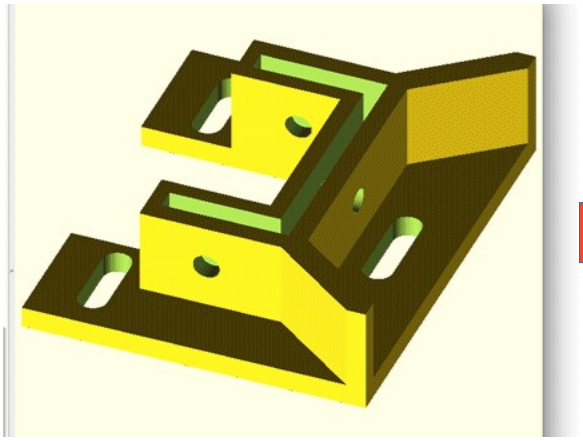
Design Freedom:
Ability to produce complex geometries that are difficult or impossible with CNC or Casting

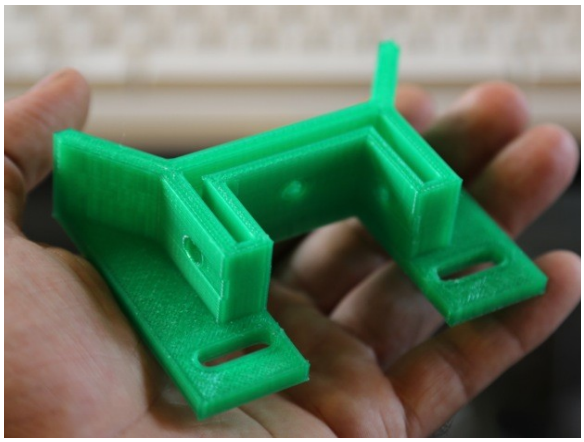


Versatile:
Easy to make a variety of objects from machine shop parts, to pistons, to marketing gifts, to office organizers

Customization:
Easy to make custom objects like pistons. Simple modifications like sizes take less than a few minutes.

1. Print replica part for investment





2. Pour plaster to create mold

3. Burn out investment & pour aluminum

4. Collect & post process

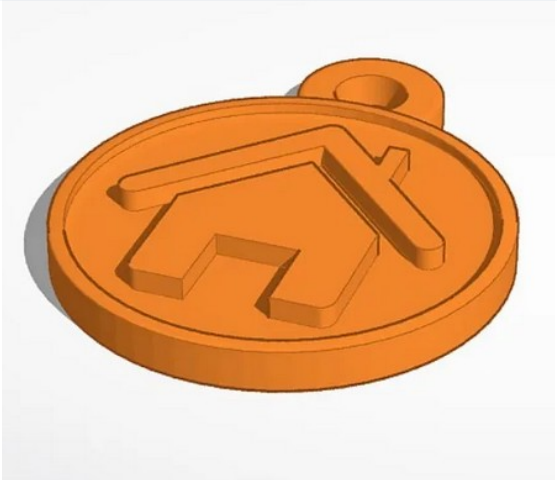
Machine Knobs

Other uses for 3D Printers

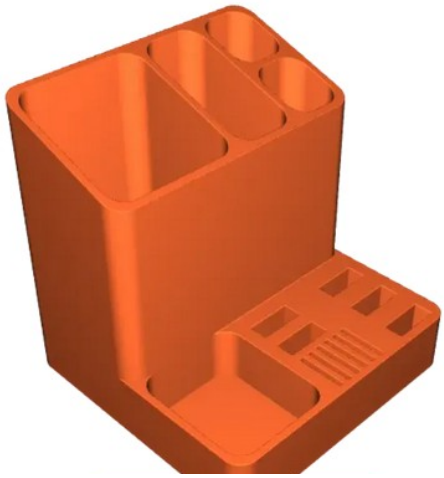
Promotional Keychains

Office Organizers

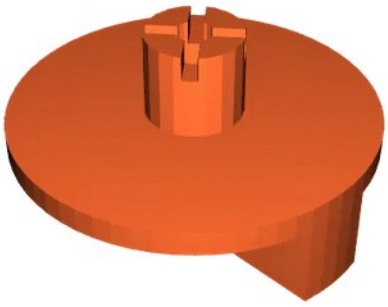
Keychain



Desk Organizer



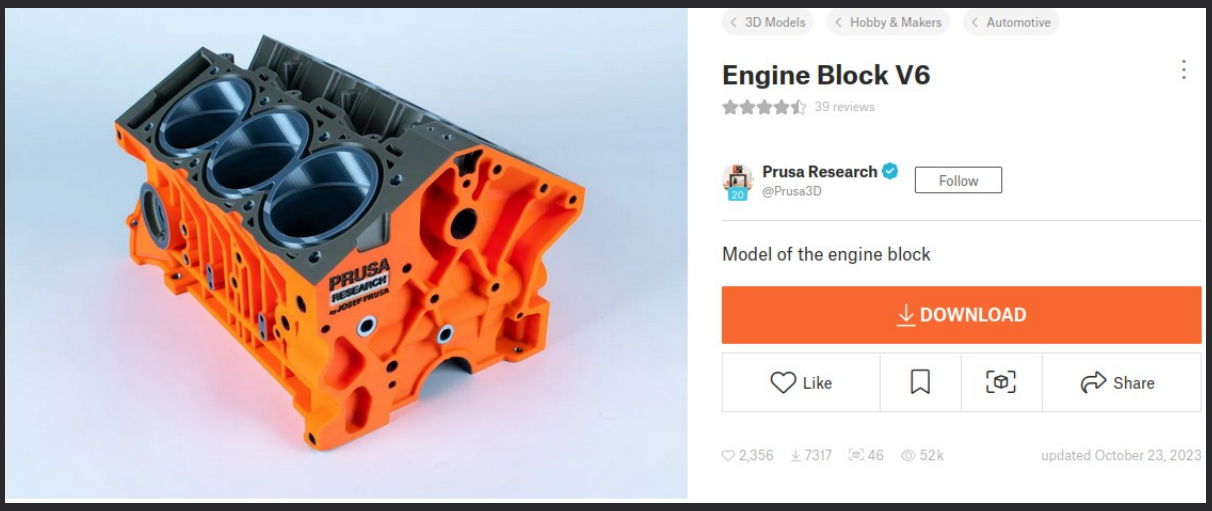
Make a large variety of objects

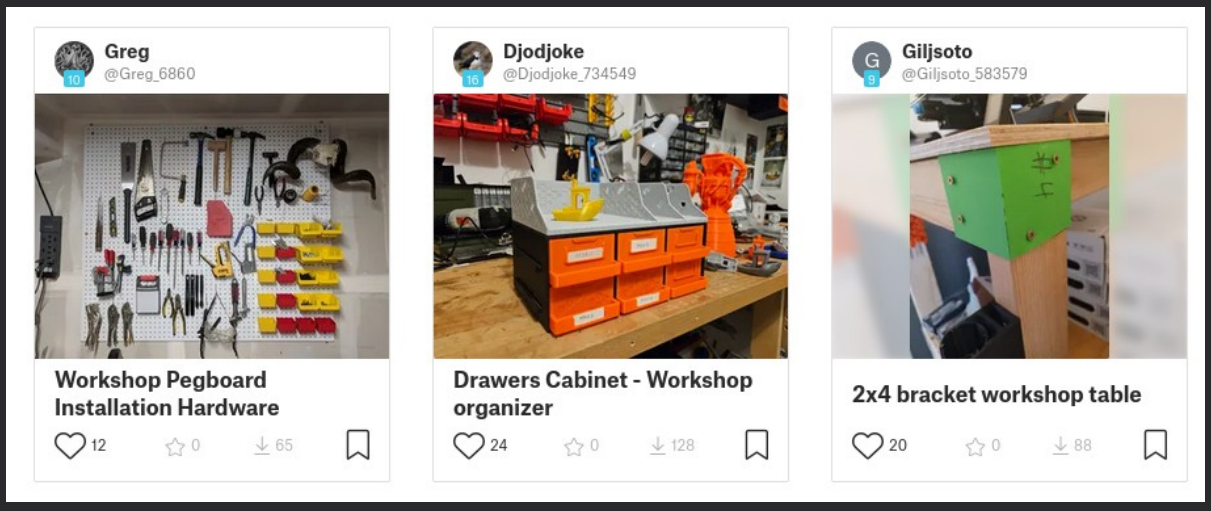


Washing Machine Knob

Honda Car Emblem

All commercially free to use Open-Source 3-D Digital Models





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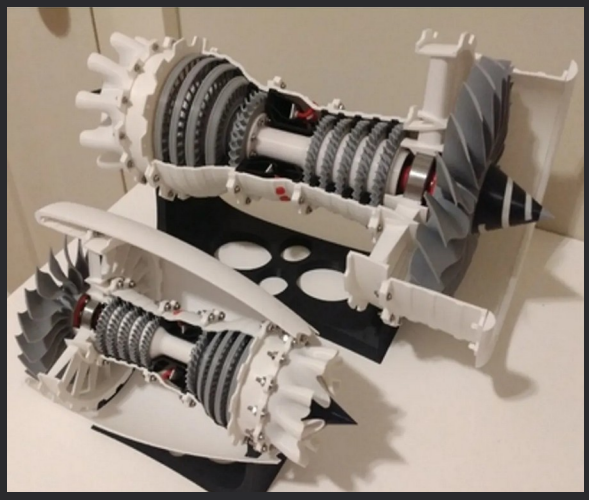
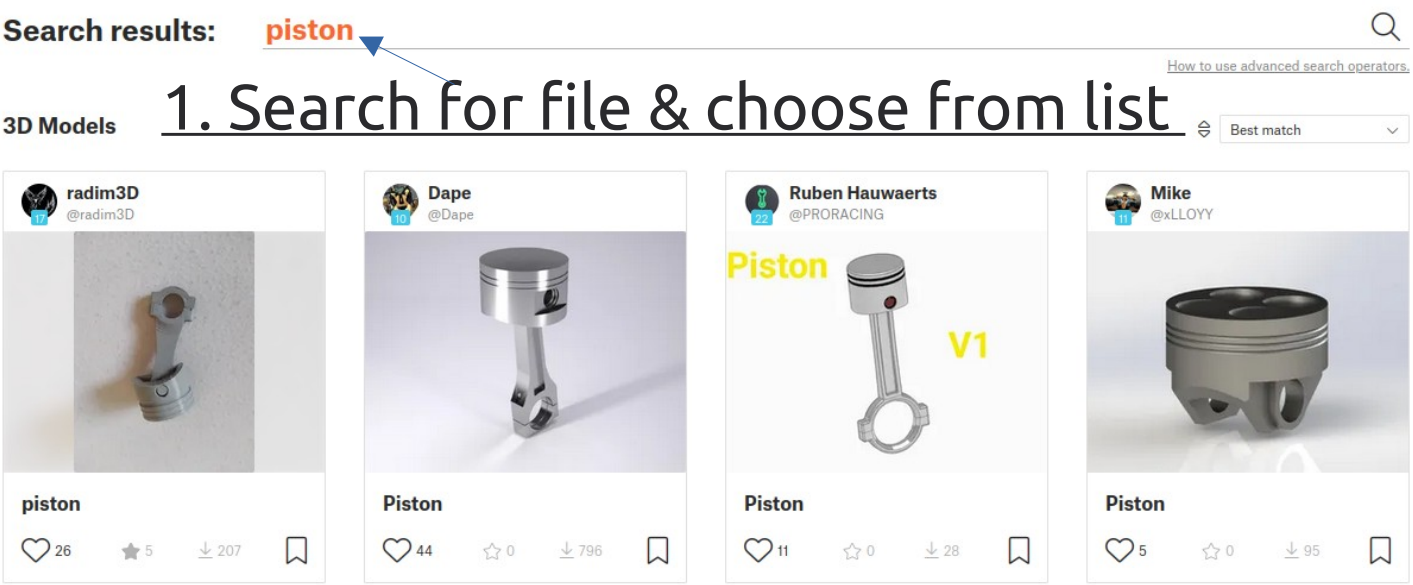
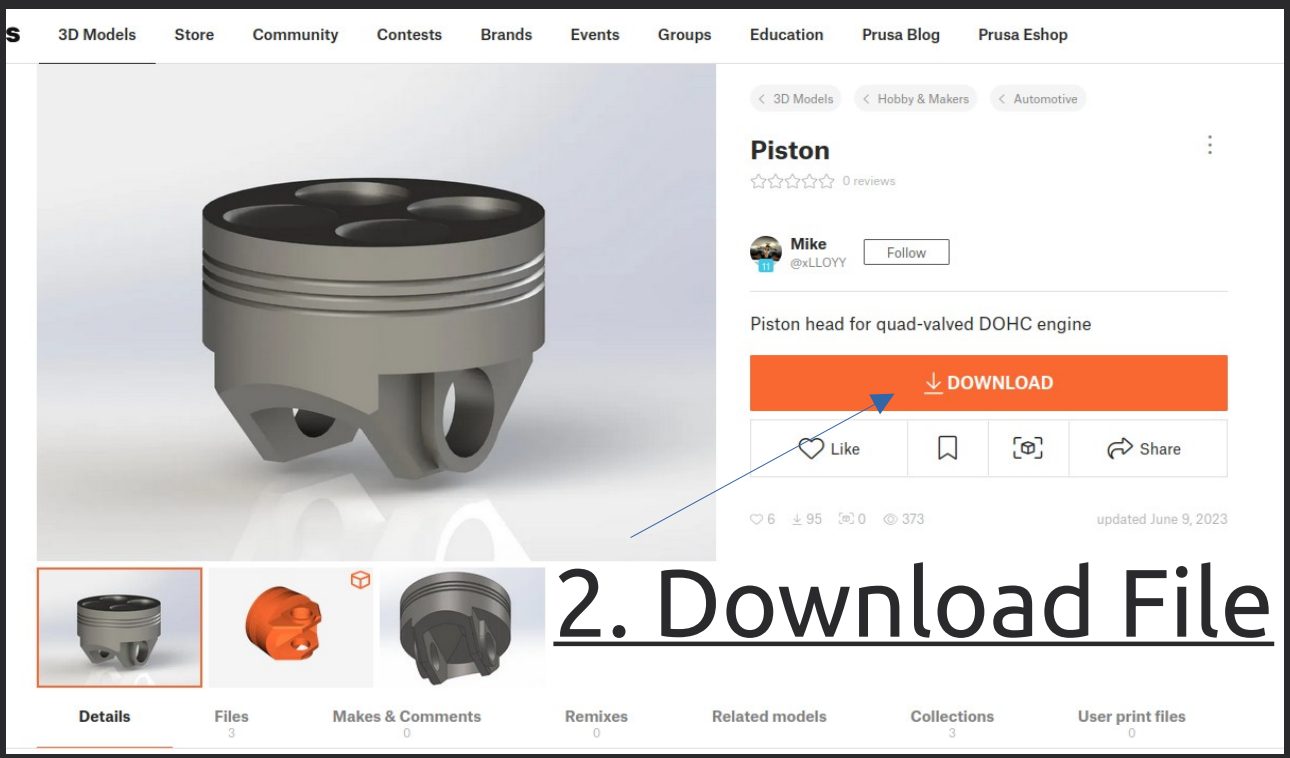


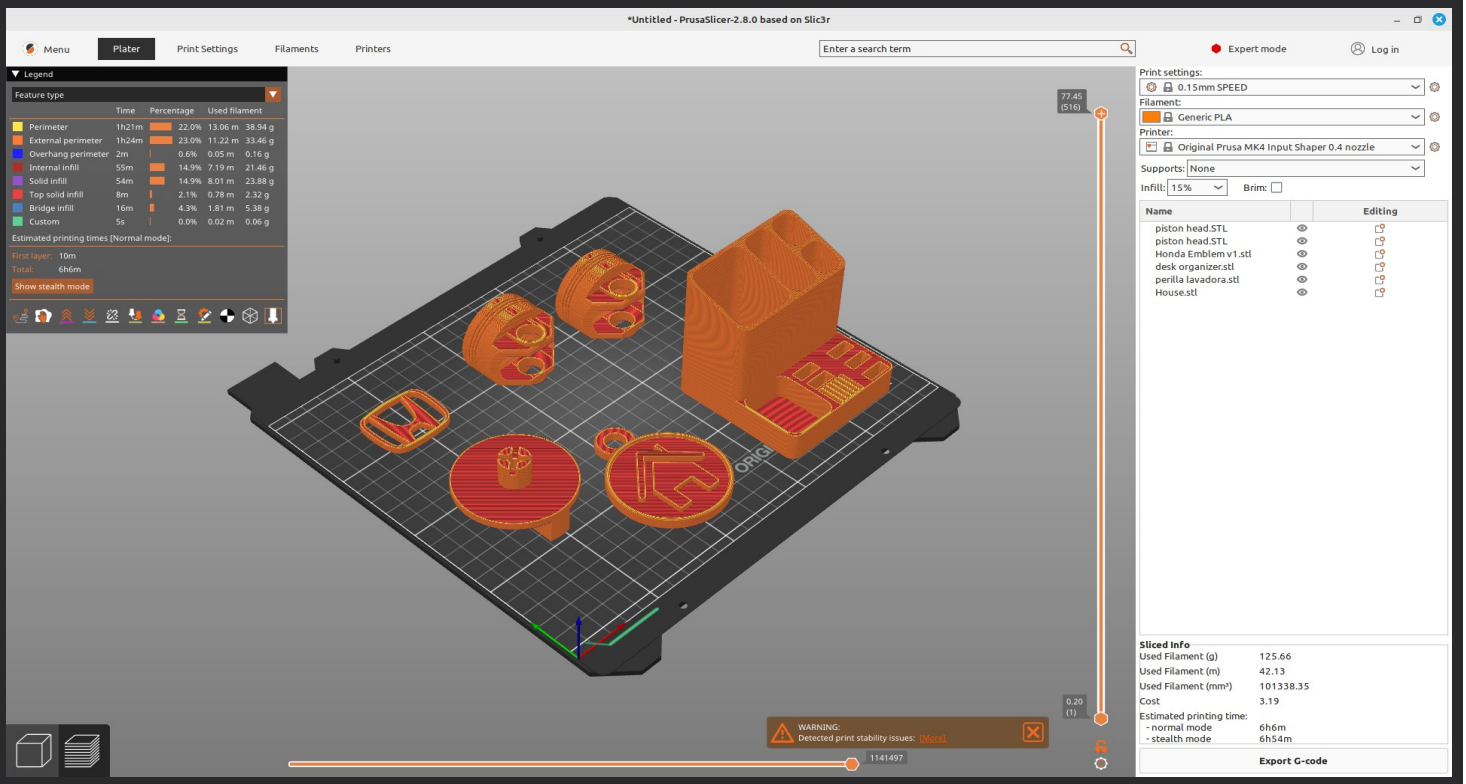
3-D Printer Simple Guide

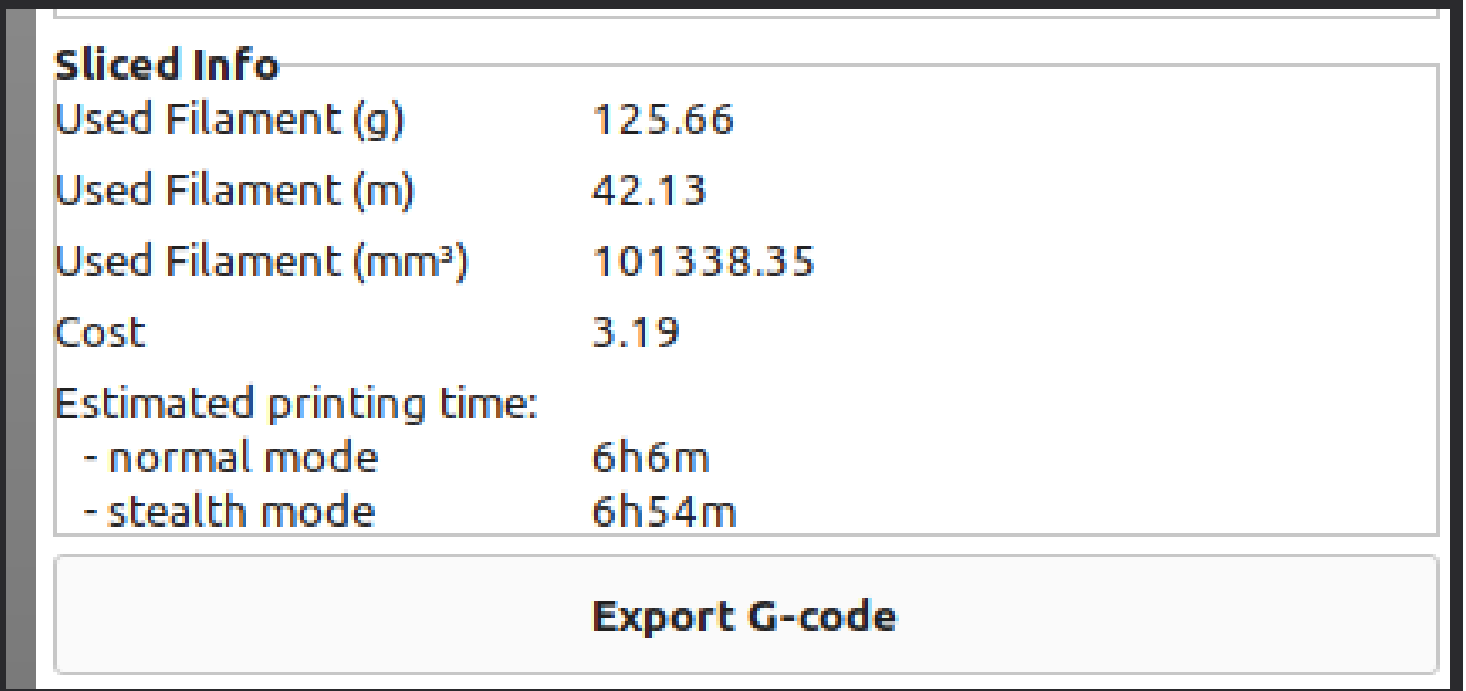


Visit: www.printables.com

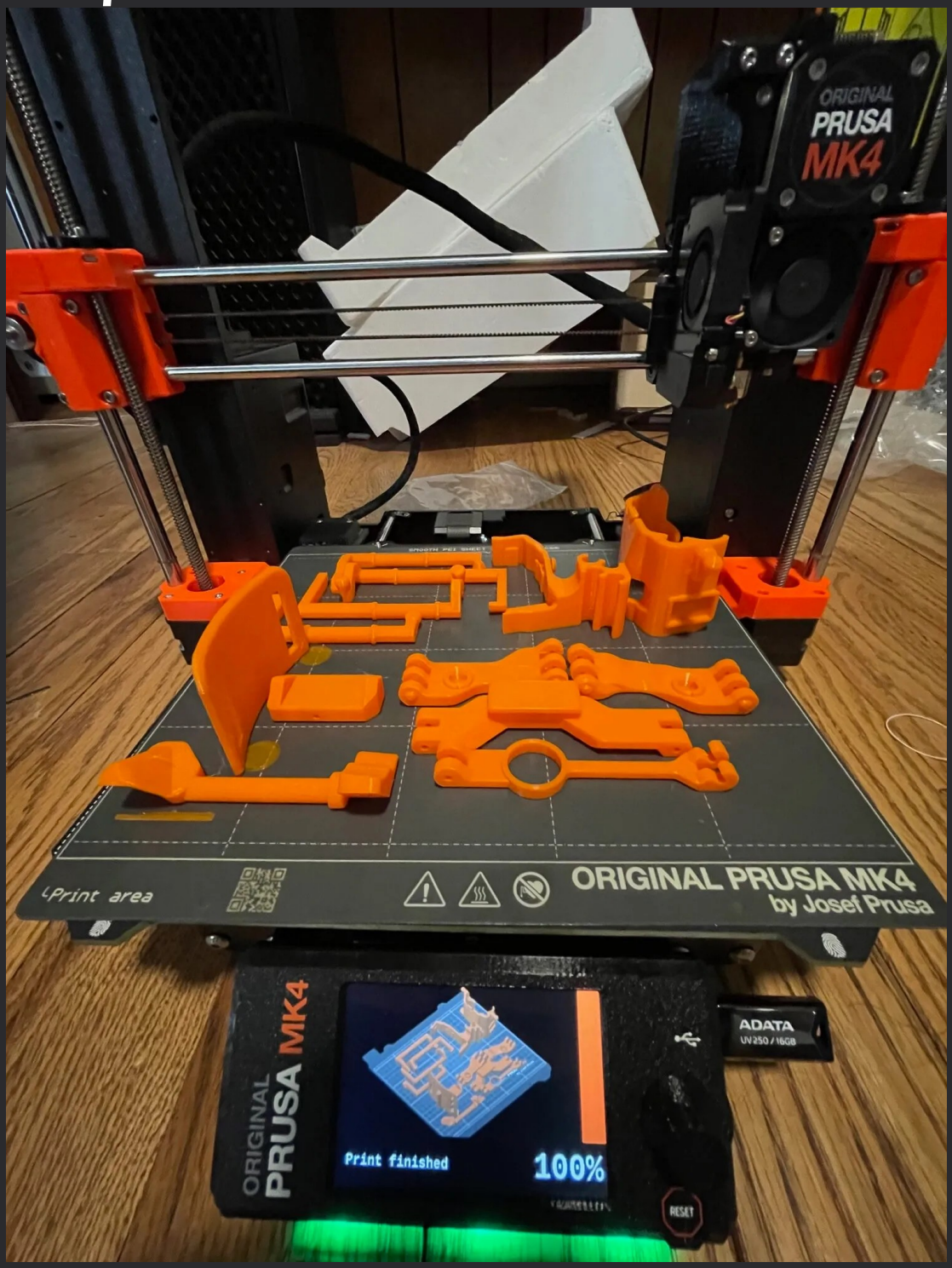


Place files on printer plate. Mix and match.



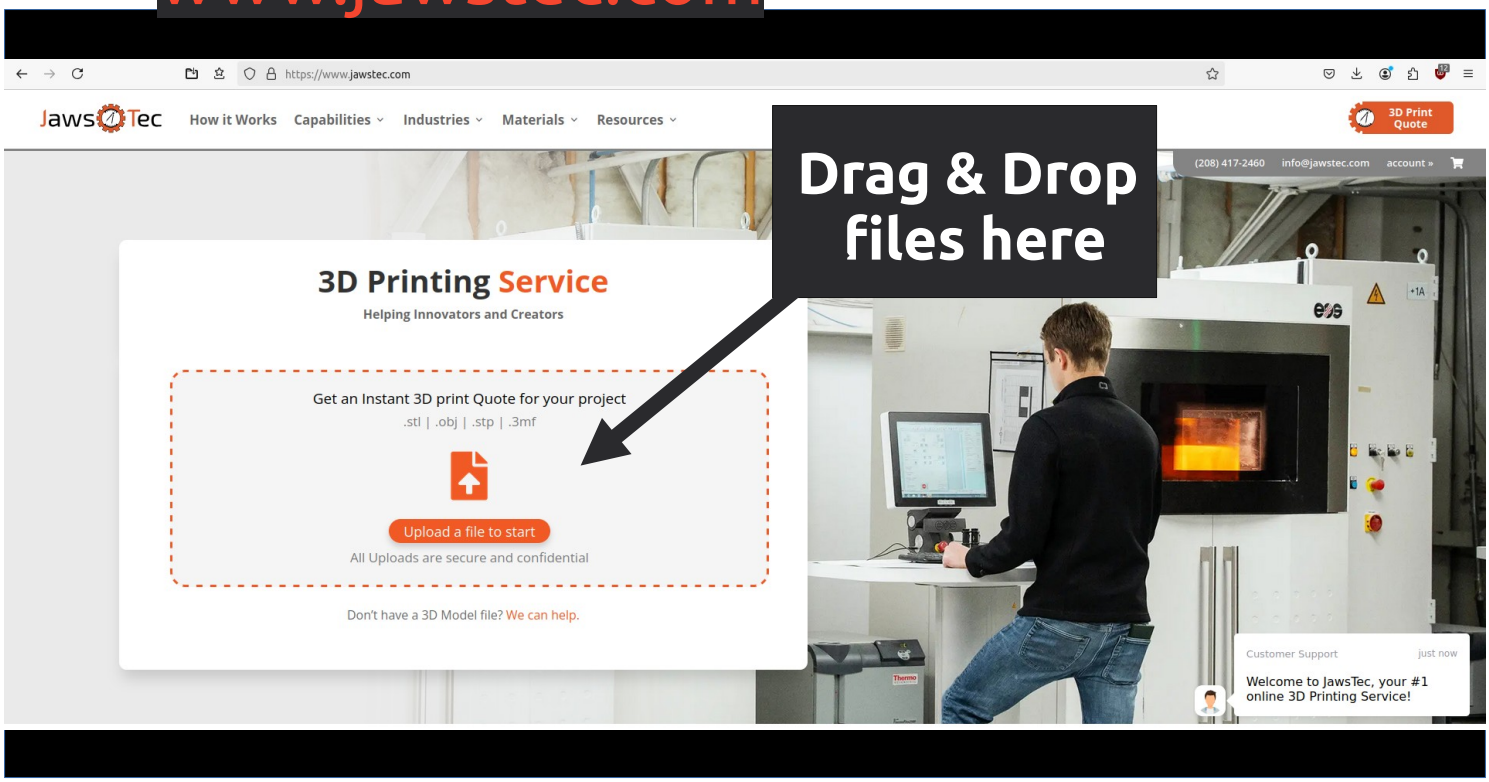


Upload, Print, & Finish!



Outsourcing the printing

www.jawstec.com



Upload files into website –
Immediately gives price & options