



Mechanics and Machines, CAD Details 2

Workflow, Work in groups

CAD file formats

Threads



On whiteboard

Popular neutral formats



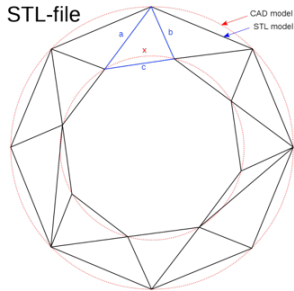
- step
- stl
- dae
- jt

Stereolithography (.STL)



Application: for 3d printers, Gazebo sim

Feature: STL files describe only the surface geometry of a three-dimensional object without any representation of color, texture or other common CAD model attributes.



ISO 10303 (.STEP)



Application: is an ISO standard for the computer-interpretable representation and exchange of product manufacturing information

Feature: Does not contain a lot of information, *including threads!*

COLLADA (.DAE)



Application: COLLADA was originally intended as an intermediate format for transporting data from one digital content creation (DCC) tool to another application.

Blender, Maya, Meshlab

Feature: XML, which contains detail + texture

Jupiter Tessellation (.JT)



Application: is an openly-published ISO-standardized 3D CAD data exchange format used for product visualization, collaboration, digital mockups, and other purposes.

Feature: The format and associated software is structured so that extremely large numbers of components can be quickly loaded, shaded and manipulated in real-time.

Because JT files are inherently "lightweight" ($\approx 1-10\%$ of the size of a CAD file) they are ideal for internet collaboration.

Threads and difference between formats

Video



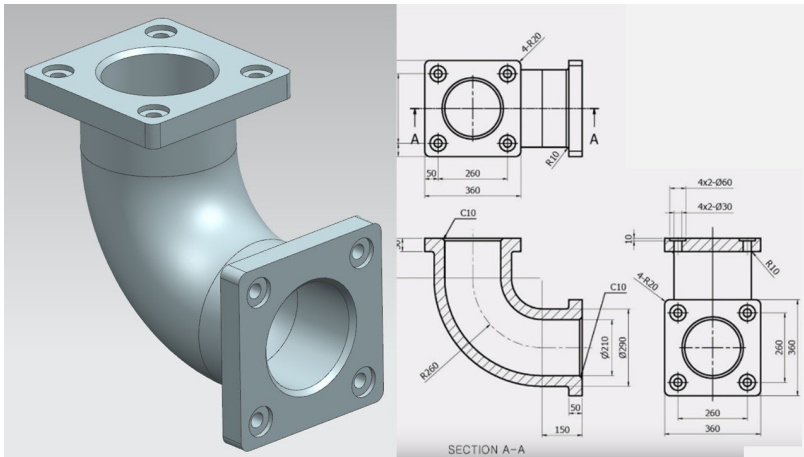
Tools for group work



Grabcad Workbench or OpenBom

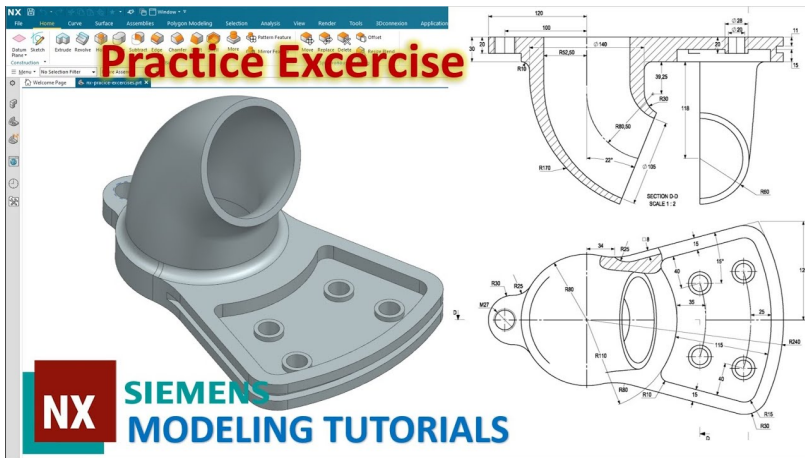
Task for MegaChads

Video



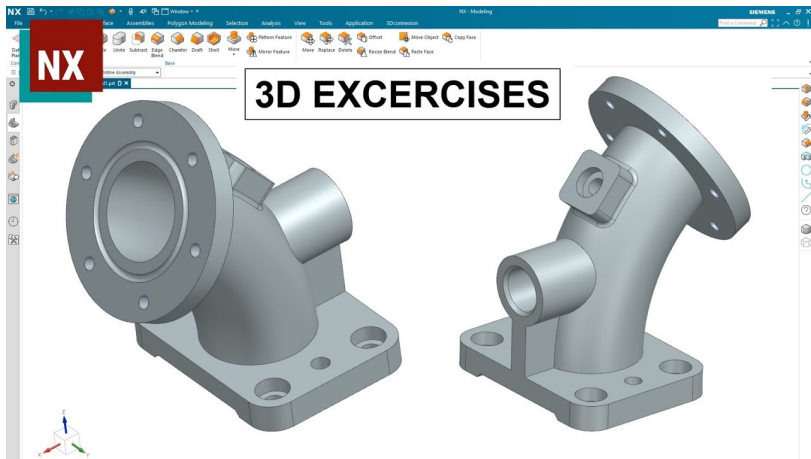
Task for GigaChads

Video



Task for Oleg-likeChads

Video



Deserve "A" grade!

– Oleg Bulichev

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📍 @Lupasic

🏢 Room 105 (Underground robotics lab)