

EDU[**CAD**]TION **STUDY GUIDE**

How to Organize CAD Projects with Bodies and Components

Chapter 1, Lesson 8

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What Are Bodies vs. Components

- **'Bodies'** are individual 3D shapes you create in CAD, usually through features like extrude, revolve, or sweep.
- They represent the geometry of a part but do not contain organizational rules by themselves. They must live in a component.
- **'Components'** are containers that hold bodies and apply organizational rules.
- They allow for separation and management of different parts within the same file.

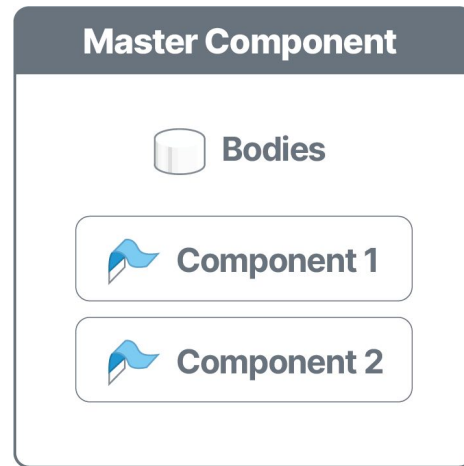


Figure 1.1

Example: Body vs Components

- Think of the drawer as a place to store items. In your kitchen, this drawer holds your utensils. In CAD, you can think of it as the overall file, '**Master File**' where your project is saved.
- Inside the drawer (**file**), you have dividers that separate different types of utensils, spoons, forks, and knives. In CAD, these dividers are called '**Components**'. Components help organize and separate your design, allowing each section to follow its own set of rules.
- Finally, the utensils themselves represent '**Bodies**'. Each body (spoon, fork, or knife) must follow the rules of its respective component (drawer divider). This organization keeps your design structured, clear, and easy to manage.

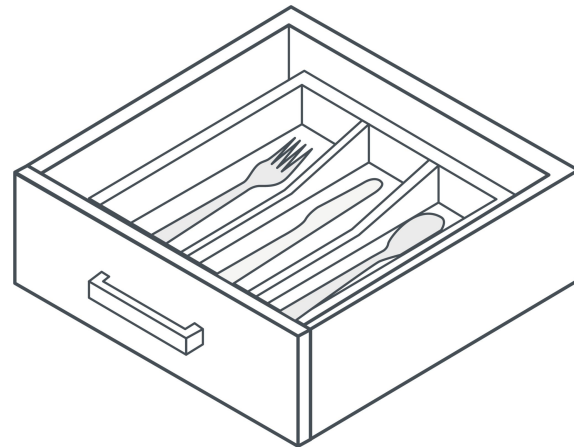


Figure 1.2

Creating Bodies vs. Components

- To create a '**Body**' or '**Component**', select '**Extrude**' from the '**Create**' menu.
- A new window will appear where you can choose the profile, direction, distance, and whether to save the result as a New Body or New Component (see Figure 1.3).
- If you create a '**Body**', it will appear under the main project (e.g., SCS WASHER) (see Figure 1.4).
- If you create a '**Component**', the '**Body**' will instead fall under that component and follow its rules (see Figure 1.5).

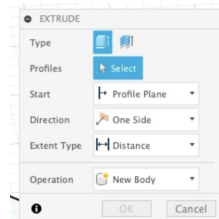


Figure 1.3

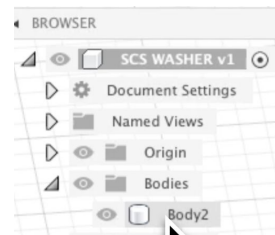


Figure 1.4



Figure 1.5

Summary

Components are essential when designing assemblies or managing parts with different material properties. In sheet metal, for example, each component can store its own rules for thickness, bend radius, and K-factor. Organizing your design into components early prevents confusion and ensures flexibility as your project grows in complexity.

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