FREECAD

2026

BLOG

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Learning Tutorials

A Note to Our Readers

2026

This blog has been created using a combination of artificial intelligence tools and human review to help deliver clear, structured, and up-to-date learning content.

All technical topics, examples, and workflows are curated to support learning and skill development. While every effort is made to ensure accuracy and clarity, readers are encouraged to validate concepts through hands-on practice and documentation. Our goal is to make learning more accessible, efficient, and practical for everyone.

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— CADIN360 Team

HOW TO SELECT SINGLE OBJECT IN FREECAD

• LEARN • • APPLY • • GROW •

Introduction

Selecting a single object in FreeCAD is a fundamental task for any designer or engineer working within the software. Whether you're preparing for detailed modifications, measurements, or exporting specific parts, understanding how to accurately select a single object is crucial for efficiency and precision. This guide will walk you through the step-by-step process of selecting a single object in FreeCAD, along with tips for best practices, common mistakes to avoid, and practical examples. With this knowledge, you'll be able to easily pinpoint and manipulate specific objects in complex assemblies, optimizing your workflow and enhancing accuracy.

How to Select a Single Object in FreeCAD

Selecting a single object may seem straightforward at first glance, but as projects become more complex with multiple components and overlapping geometries, the process requires careful attention. Below is a detailed, step-by-step approach to correctly select a single object in FreeCAD.

1. Understanding the Selection Tools

Before starting, familiarize yourself with FreeCAD's selection mechanisms:

- Basic click selection
- Box selection
- Lasso selection
- Selection through the Combo View panels

These tools give you options to accurately pick objects within your workspace.

2. Preparing the Workspace

To effectively select a single object:

- Make sure your object is visible and not hidden.

- Confirm that your object isn’t part of a group or assembly that could interfere with direct selection.
- Disable any active filters or selection restrictions.

3. Selecting a Single Object Using Mouse Clicks

Step-by-step:

- Move the mouse cursor over the object you want to select.
- Click once with the left mouse button.
- Watch for highlighting or a selection outline that indicates the object is selected.

Tips:

- Hover carefully over the object to avoid selecting overlapping elements.
- If multiple objects highlight, proceed to the next step to refine your selection.

4. Refining Selection in Overlapping Geometries

Overlapping objects can complicate selection. To address this:

Step-by-step:

- Hold down the `Ctrl` key (or `Cmd` on Mac) and click repeatedly to cycle through overlapping objects.
- Alternatively, use the **Selection Filter** to limit selection to specific object types (e.g., only solids or only wires).

5. Selecting by Name in the Tree View

If visual selection is problematic:

- Locate the object in the Tree view (usually on the left).

- Right-click on the object and choose **Select**.
- The object will highlight in the 3D view, indicating selection.

6. Using the 'Pick Object' Function

FreeCAD’s contextual selection commands can help:

- Activate the **Pick Object** tool from the toolbar.
- Click on the object in the 3D viewport.
- The object is then selected, often with a persistent highlight.

7. Practical Example: Selecting a Specific Gear Gear in an Assembly

Suppose you have a complex gear assembly. To select a specific gear:

- Use the Tree view and locate the gear by name.
- Click on the gear in the Tree view for a precise selection.
- Alternatively, click near the gear in the 3D view, then use `Ctrl` + click if overlapping with other parts.

8. Confirming the Selection

Once selected:

- Look for visual cues such as highlighting or bounding boxes.
- Check the Combo View to see if the object is reflected as selected.

9. Common Mistakes to Avoid

- Attempting to select objects behind other objects without using the Tree view or selection filters.

- Clicking too quickly, which might select multiple objects instead of one.
- Forgetting to turn off visibility masks or layers that hide objects.

10. Practice and Patience

- Practice selecting objects in different scenarios.
- Use different selection modes to become proficient, especially in complex models.

Additional Tips for Effective Selection

- Use the **Selection Filter** for targeted picking (e.g., only vertices, edges, or faces).
- Use the **Snapping** features to precisely pick specific points of an object.
- Save frequently and organize your objects logically in the Tree view for easier future selection.

Comparing Selection Methods

Method	Best For	Pros	Cons

Mouse Click	Simple, small models	Quick and intuitive	Difficult with overlapping objects
Tree View Selection	Complex assemblies	Precise and not dependent on view angle	Requires navigating the Tree view
Pick Object Tool	Precise, detailed selection	Accurate for complex scenes	Slightly slower setup

Selection Filter	Targeted selection	Eliminates accidental picks	Requires understanding filter options

Conclusion

Knowing how to select a single object in FreeCAD robustly enhances your efficiency, especially when dealing with intricate projects. Whether through direct mouse interaction, using the Tree view, or leveraging specialized tools, mastering selection techniques ensures precise control over your models. Remember to practice these methods in different scenarios, avoid common pitfalls, and utilize filters for complex scenes. With patience and familiarity, selecting objects will become a swift and straightforward step in your design workflow.

FAQ

1. How can I select multiple objects but work with only one in FreeCAD?

Ans: Hold down the `Ctrl` key while clicking on multiple objects to select them, then deselect unwanted objects or focus on the one needed.

2. How do I select an object behind another object in FreeCAD?

Ans: Use the Tree view to select the object directly, or hold down `Ctrl` and click repeatedly to cycle through overlapping objects.

3. Can I select objects based on their properties in FreeCAD?

Ans: Yes, use the Tree view and right-click to filter or select objects by name or properties.

4. How do I select a face or edge on a solid object?

Ans: Use mouse hover and click for faces or edges with selection filters enabled, ensuring you're in the appropriate selection mode.

5. What is the best way to select all components of a complex assembly?

Ans: Select the main assembly in the Tree view, then expand to select individual parts or select all at once using `Ctrl + A` within the assembly.

6. How do I isolate a single object for editing?

Ans: Select the object, then use the **Hide other objects** feature or isolate the selection in the View.

7. Why is my selection not registering in FreeCAD?

Ans: Check if objects are hidden, locked, or part of a layer that’s turned off; ensure the selection filter is appropriate for the object type.

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2026

CADIN360 Learning Tutorials is an educational platform focused on practical CAD, CAM, and CAE learning.

The platform provides clear, industry-oriented tutorials, design workflows, and real-world insights using tools such as FREECAD.

CADIN360 is created to help learners, students, and professionals build strong fundamentals and practical design skills in modern CAD workflows.

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Learning Tutorials

Practice What You've Learned

2026

You've just completed this blog and learned important concepts in FREECAD.

To help you practice and apply what you've learned, the next pages include a sample from our Freecad book .This sample contains practice exercises and real-world practice tasks designed to strengthen your skills.

What you'll find next:

- ✓ Practice exercises from the book
- ✓ A brief overview of the complete book
- ✓ Options to explore or request the full sample

Your hands-on Freecad practice starts next.

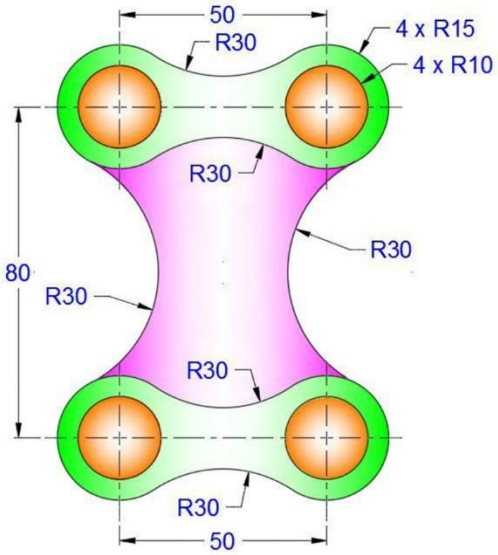
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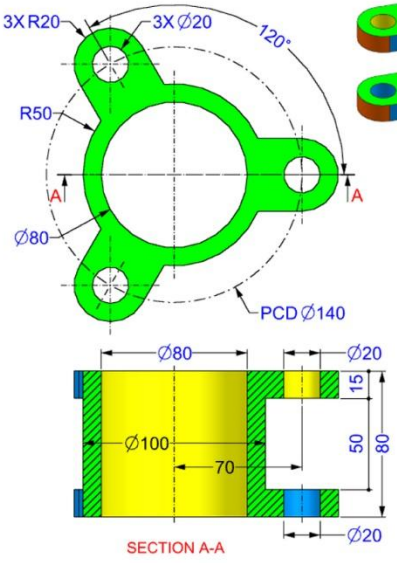
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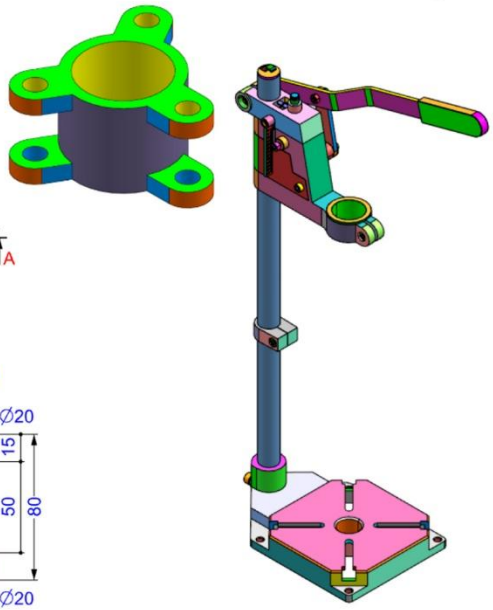
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- 3D Modeling
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500+ PRACTICE EXERCISES

• 2D Sketching • 3D Modeling • Assembly Drawings

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This book contains over 500 carefully crafted practice drawings, including:

- 200 2D Sketching Exercises
- 200 3D Modeling Exercises
- Comprehensive Assembly Models with 150+ Individual Part Drawings

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Best regards,

Sachidanand Jha
Founder & CEO, CADIN360

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FREECAD ALL IN ONE WORKBOOK

- This book contains over 500 CAD practice exercises, organized as:

  1. 200 2D Sketching Exercises
  2. 200 3D Modeling Exercises
  3. Assembly Projects with 150+ Part Drawings

- This book is a practice workbook. It does not include step-by-step tutorials for creating 2D drawing, 3D models and Assembly.

- SI units (millimeters) are used for all dimensions.

- Third Angle Projection is used throughout this book.

- This book is for **FREECAD** and also suitable for Other Feature-Based Modeling Software such as SolidWorks, Catia, Fusion 360, NX, Solid Edge, AutoCAD, PTC Creo etc.

- Designed for students, engineers, drafters, and designers looking for extensive CAD practice using **FREECAD**.

- The exercises cover a wide range of real-world modeling challenges—from simple sketches to complex assemblies—offering clear, concise, and structured drawing practice.

- Exercises are organized to gradually develop beginner to advanced-level design skills.

- Each exercise is self-contained, and can be completed independently.

- Assembly drawings follow industry standards to help improve visualization and multi-part modeling skills.

- All dimensions are in mm. Assume missing dimensions logically.

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HOW TO USE THIS BOOK

This book contains over 500 CAD practice exercises, designed for self-paced learning using **FREECAD** or any feature-based modeling software.

- 2D Sketching Exercises: Start here if you're a beginner or learning how to use the sketch environment.

- 3D Modeling Exercises: Follow after mastering sketching. Practice creating solid models using the provided dimensions.

- Assembly Drawings: Use after completing part models to understand multi-part assemblies, relationships, and constraints.

Tips for Best Use:

- Complete the exercises in order, or jump to any skill level you prefer.
- All dimensions are in millimeters.
- Where dimensions are missing, apply logic or practice estimation.
- This book is ideal for both students and professionals preparing for industry design work.

Note:

This book is available in multiple formats – **Black & White**, **Standard Color**, and **Premium Color** editions.

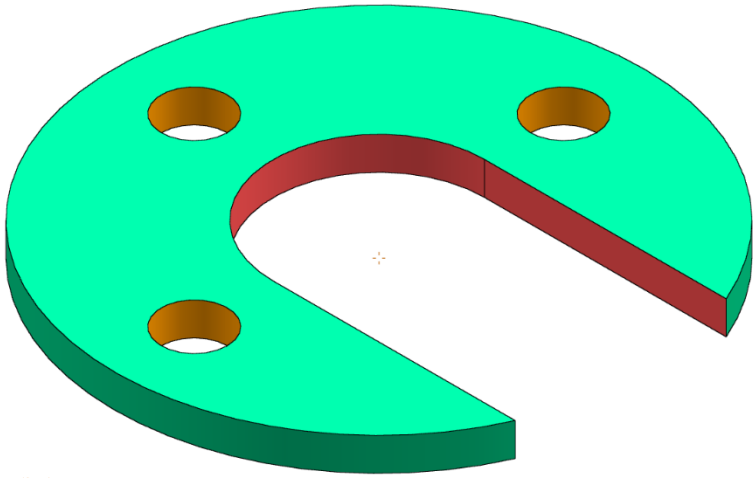
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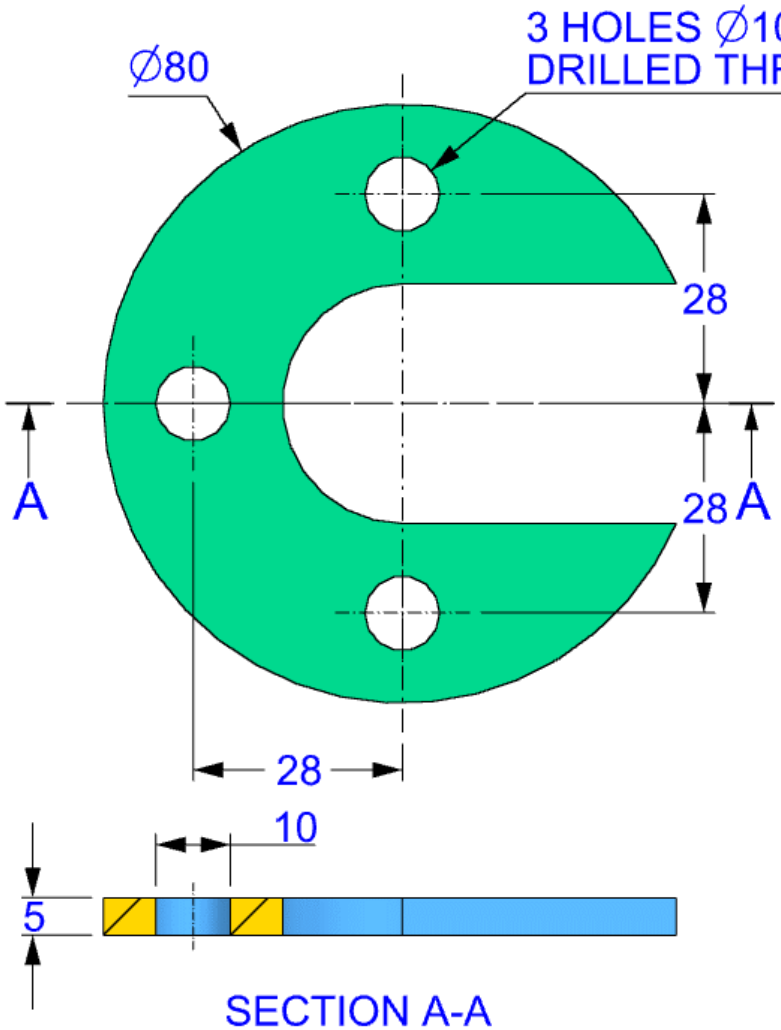
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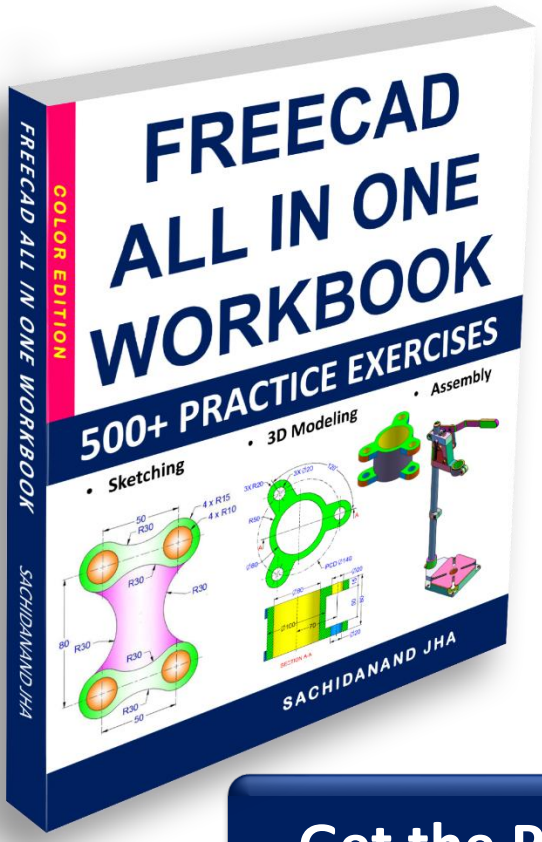
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- ✓ Full Assembly STEP Files (.stp format) – Compatible with all major CAD software
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Master FreeCAD with Real-World Practice Exercises

This book contains over 500 FreeCAD practice exercises including sketching, 3D modeling, and assembly drawings. Designed for students, engineers, and professionals to build practical CAD modeling skills.

FreeCAD ALL IN ONE WORKBOOK

This book contains:-

- 200 2D Sketching Exercises
- 200 3D Modeling Exercises
- Multi-part Assembly Exercises & Detailed Drawings
- All drawings in 3rd Angle projection
- All dimensions are in mm(metric system)