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Preface

SolidWorks 2012

SolidWorks, developed by SolidWorks Corporation, is one of the world's fastest growing solid modeling software. It is a parametric feature-based solid modeling tool that not only unites the three-dimensional (3D) parametric features with two-dimensional (2D) tools, but also addresses every design-through-manufacturing process. The latest in the family of SolidWorks, SolidWorks 2012, includes a number of customer suggested enhancements, substantiating that it is completely tailored to the customer's needs. Based mainly on the user feedback, this solid modeling tool is remarkably user-friendly and it allows you to be productive from day one.

In SolidWorks, the 2D drawing views of the components are easily generated in the **Drawing** mode. The drawing views that can be generated include detailed, orthographic, isometric, auxiliary, section, and so on. You can use any predefined standard drawing document to generate the drawing views. Besides displaying the model dimensions in the drawing views or adding reference dimensions and other annotations, you can also add the parametric Bill of Materials (BOM) and balloons in the drawing view. If a component in the assembly is replaced, removed, or a new component is assembled, the modification will be automatically reflected in the BOM placed in the drawing document. The bidirectional associative nature of this software ensures that any modification made in the model is automatically reflected in the drawing views and any modification made in the dimensions in the drawing views automatically updates the model.

In **SolidWorks 2012: A Tutorial Approach** textbook, the author has adopted a tutorial-based approach to explain the fundamental concepts of SolidWorks. This textbook has been written with the tutorial point of view and the learn-by-doing theme to help the users who are interested in learning 3D design and basics of FEA. Real-world mechanical engineering industry examples and tutorials have been used to ensure that the users can relate the knowledge of this textbook with the actual mechanical industry designs. The main features of the textbook are as follows:

- **Tutorial Approach**
  The author has adopted the tutorial point-of-view and the learn-by-doing theme throughout the textbook. This approach guides the users through the process of creating the models in the tutorials.

- **Real-world Mechanical Engineering Projects as Tutorials**
  The author has used the real-world mechanical engineering projects as tutorials in this textbook so that the readers can correlate the tutorials with the real-time models in the mechanical engineering industry.

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- **Coverage of Major SolidWorks Modes**
  All major modes of SolidWorks are covered in this textbook. These include the **Part** mode, the **Assembly** mode, and the **Drawing** mode. Also, this textbook covers the basics of FEA and SolidWorks Simulation.

- **Tips and Notes**
  Additional information related to various topics is provided to the users in the form of tips and notes.

- **Learning Objectives**
  The first page of every chapter summarizes the topics that are covered in the chapter.

- **Self-Evaluation Test, Review Questions, and Exercises**
  Each chapter ends with a Self-Evaluation test that enables the users to assess their knowledge of the chapter. The answers to the Self-Evaluation test are given at the end of the chapter. Also, the Review Questions and Exercises are given at the end of each chapter, which can be used by the Instructors as test questions and exercises.

- **Heavily Illustrated Text**
  The text in this textbook is heavily illustrated with the help of around 350 line diagrams and 450 screen captures.

Coventions used in this Textbook

Note



The author has provided additional information to the users about the topic being discussed in the form of Notes.

Tip



The author has provided useful information in the form of Tips that will increase the efficiency of the users.

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Flyout

A flyout is one in which a set of tools are grouped together. You can identify a flyout with a down arrow on it. These flyouts are given a name based on the types of tools grouped in them. For example, Line flyout, View Settings flyout, Fillet flyout, and so on; refer to Figure 1.

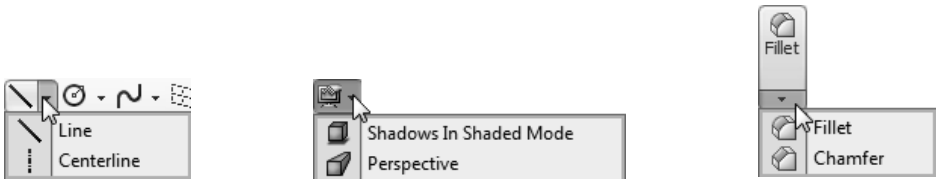


Figure 1 *The* ***Line***, ***View Settings***, *and* ***Fillet*** *flyouts*

Free Companion Website

It has been our constant endeavor to provide you the best textbooks and services at affordable price. In this endeavor, we have come out with a Free Companion website that will facilitate the process of teaching and learning of SolidWorks 2012. If you purchase this textbook from our website (www.cadcim.com), you will get access to the files on the Companion website.

To access the files, you need to register by visiting the **Resources** section at ***www.cadcim.com***. The following resources are available for the faculty and students in this website:

Faculty Resources

- **Technical Support**
  You can get online technical support by contacting ***techsupport@cadcim.com***.

- **Instructor's Guide**
  Solutions to all review questions and exercises in the textbook are provided in this link to help the faculty members test the skills of the students.

- **PowerPoint Presentations**
  The contents of the book are arranged in PowerPoint slides that can be used by the faculty for their lectures.

- **Part Files**
  The part files used in illustration, examples, and exercises are available for free download.

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Student Resources

- **Technical Support**
  You can get online technical support by contacting ***techsupport@cadcim.com***.

- **Part Files**
  The part files used in illustrations and examples are available for free download.

- **Additional Students Projects**
  Various projects are provided for the students to practice.

If you face any problem in accessing these files, please contact the publisher at ***sales@cadcim.com*** or the author at ***stickoo@purduecal.edu*** or ***tickoo525@gmail.com***.

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