

ME265  
SolidWorks  
Assignment #1

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## History of the Product

SolidWorks is a 3D computer-aided design (CAD) program that runs on Microsoft Windows platforms. It was introduced in December 1993 by newly-founded SolidWorks Corporation to compete with products such as Pro/ENGINEER, Unigraphics NX among many others. Headquartered in Concord, Massachusetts, Jon Hirschtick founded SolidWorks to make the process of product design easier. He recruited a team of engineers in 1993 to build a company that developed 3D CAD software that was easy to use. They developed the first 3D CAD technology that ran on an intuitive Microsoft Windows platform, didn't require expensive hardware and software to operate, and didn't cost a fortune. They provided users with an accessible, easy-to-learn-and-use CAD package that filled the market void between expensive products and low-cost, barely functional software. Hirschtick's original team developed and released SolidWorks software by the end of 1995. Michael Payne was one of the founders, and he left his V.P. of R&D position at Parametric Technology Corporation (PTC) to help push the development of a new parametric modeler. SolidWorks Corporation was acquired by Suresnes, France-based Dassault Systemes S.A. in 1997. Currently the suggested retail price of the SolidWorks student edition 2006-2007 is \$99. The retail price of the student edition with COSMOS is \$199. The price for the SolidWorks 2007 is \$3995. The price for SolidWorks Office Professional 2007 is \$5490. The price for SolidWorks Office Professional 2007 Premium is \$7995.

## Product Description

The SolidWorks core product includes modeling, assembly, and drawing creation. It includes tools for 3D modelling, sheetmetal, weldments, and limited freeform surfacing. It can import numerous file types from other 2D and 3D CAD programs. It also has an API for custom programming. Also included is a limited finite element analysis program called CosmosXpress and a mould filling program called MoldflowXpress.

The SolidWorks Student Design Kit is a limited-term licensed version of SolidWorks. It is intended to educate students and has several features that make it inappropriate for professional use. It also includes CosmosXpress and MoldflowXpress.

The SolidWorks Office Professional bundle includes the SolidWorks core plus several add-in programs. These include Animator (Create AVI animations of a model in motion), Design Checker (Checks notes, dimensions and other settings in drawings to make sure they adhere to company standards), eDrawings Professional (Adds markup and measuring capabilities to the free eDrawings viewer), FeatureWorks (Adds editable features to "dumb" imported geometry), PDMWorks Workgroup (A workgroup level document management program to manage SolidWorks files as well as other file types), PhotoWorks (Realistic Photo rendering), Task Scheduler (Schedule SolidWorks to bulk print, import/export files, and create eDrawings), Toolbox (A collection of common fasteners and hardware, Screws, Nuts, Washers, etc.), Utilities (Additional tools for selecting features and comparing features and geometry), 3D Instant Website (Publishing an HTML document of SolidWorks documents, uses eDrawings for viewing).

The SolidWorks Premium bundle includes the SolidWorks core and Office Professional add-ins and CosmosWorks Designer (Finite Element Analysis), CosmosMotion (Motion

analysis), Routing (Piping, Tubing, plus Wiring and Harness layout), ScanTo3D (Utility for converting scanned data into solid models)

From our brief evaluation of SolidWorks, we found that the program was very intuitive to use. The program has a tutorial menu you can go through with 30min tutorials to learn the basics of the program. You can learn to make a basic part with a simple sketch and extrusion in about 15min. With some Pro/E knowledge, you can probably figure out how to make a part on your own because almost all the buttons are labeled. In contrast to Pro/E, there are no buttons on the right side and few popup menus. We are assuming Pro/E has a greater feature set but since we have little experience with SolidWorks, we cannot be sure of that.

To make a simple part with a sketch and extrusion, first you click on new document and select Part. Click Sketch and then Rectangle. Then click on the Front Plane. Click on the origin once and move the cursor to somewhere else and click again to make the dimensions of the rectangle. Now click on Smart Dimension and click on a side of the rectangle to change the length. Do that to both sides. After changing the side lengths, click Exit Sketch. Click on Features and then click Extrude Boss/Base. Click on the rectangle. On the side menu, set the end condition to Blind and set a depth. Click the check box and you should have a rectangle.

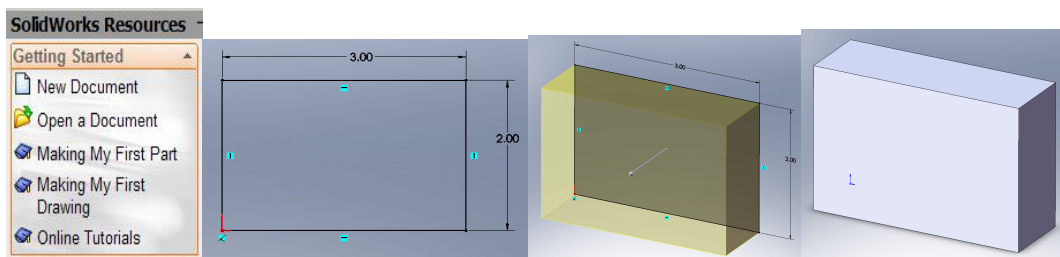


Figure 1: New Document Text

Figure 2: Dimensioning

Figure 3: Extrusion

Figure 4: Finished Part

## Customer Base

SolidWorks software is used by product designers and engineers. SolidWorks serves customers in industrial, medical, scientific, consumer, educational, technology, and transportation markets. In 2002 to 2003, about 49,000 licenses were distributed to these customers. There were 30,000 licenses distributed in 2004 and 37,000 licenses were distributed in 2005. There were 31,000 licenses distributed in 2006. There are a total of about 148,000 licenses that were distributed to customers since 2002. SolidWorks is targeted at the midrange CAD market it is affordable for small business and schools.

## Revenues

The financial year revenue for 2002 is EUR 125.7 million or \$162.9 million. The financial year revenue for 2003 is EUR 126.2 million or \$163.6 million. The financial year revenue for 2004 is EUR 145.9 million or \$189 million. The financial year revenue for 2005 is EUR 181.8 million or \$235.6 million. The quarter one revenue for 2006 is EUR 52.3 million or \$67.8 million. The quarter two revenue for 2006 is EUR 56.1 million or \$72.7 million. The quarter three revenue for 2006 is EUR 50.4 million or \$65.3 million. Assuming the quarter four revenue does not deviate from the trend much, the financial year revenue for 2006 will be about EU 219 million or \$284 million.

## References

Dassault Systemes Key Figures

<http://www.3ds.com/corporate/investors/tools/key-figures/>

Wikipedia: SolidWorks

<http://en.wikipedia.org/wiki/Solidworks>

SolidWorks Company Profile

<http://www.solidworks.com/pages/company/companyprofile.html>

SolidVision Business Solutions to Engineering Store

[http://www.solidvision.com/Merchant2/merchant.mvc?Screen=CTGY&Category\\_Code=CAD\\_S](http://www.solidvision.com/Merchant2/merchant.mvc?Screen=CTGY&Category_Code=CAD_S)

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