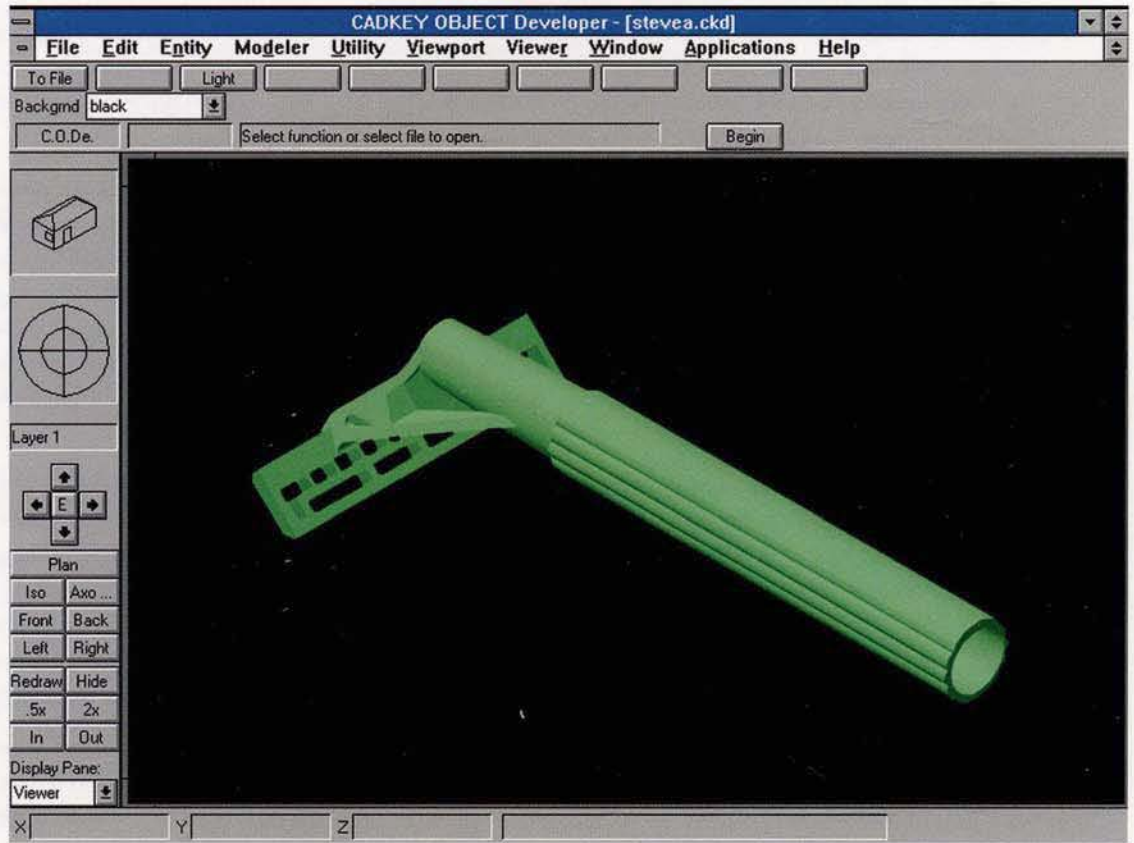




CADKEY

# CADKEY® OBJECT Developer



right: Sample Application created with the CADKEY OBJECT Developer.



above: Windows sample interface. Picture created by Sweet's Electronic Publishing.

You have an idea for a surefire Windows® application but you don't have the time or the money to start programming from scratch. Don't worry—now you don't have to! You can leverage years of Cadkey's product development expertise to bring your new products to market faster and easier by using CADKEY® OBJECT Developer. If you develop applications for the design, manufacturing, building, graphics and database markets, or if you have an idea for a data-intensive application, CADKEY OBJECT Developer can save you time and money.

# **OBJECT Developer** – *the ultimate*

## **Applications:**

Manufacturing  
Building  
Modeling  
Database  
Graphics  
Visualization

For the first time, an advanced graphics development environment has been combined with a powerful object-oriented database suitable for a variety of graphical and non-graphic applications. CADKEY OBJECT Developer is the ultimate Microsoft® Windows™ 3.1 and Windows NT™ toolkit, providing a collection of C++ objects and modules as a flexible framework upon which you can build your applications. Some of CADKEY OBJECT Developer's important features that help shorten and simplify your design cycle include:

### **Graphical user interface (GUI) under MS-Windows**

CADKEY OBJECT Developer supports over 25 different types of geometric entities including curves, surfaces, solid primitives and boundary representation solids.

### **Built-in solids modeling system**

A complete polyhedron-based boundary representation solids modeler supports a full complement of object generators and editing capabilities.

### **State-of-the-art, object-oriented, client/server database utilizing ObjectStore®**

As an option, you may use CADKEY OBJECT Developer's client/server database that is built on Object Design, Inc.'s ObjectStore, the leading object-oriented database system available today.

### **Object libraries for parametric and instanced geometry**

CADKEY OBJECT Developer provides complete support for instanced geometry, to facilitate handling multiple occurrences of the same object, and support for user-defined instanced geometric objects which may be parametric, variational or table-driven.

### **Flexible non-graphic data management system**

CADKEY OBJECT Developer provides a flexible integrated mechanism for storing non-graphic data, such as multimedia data, that can be linked to graphical objects in the database.

### **Multiple document support with overlapping multiple viewports per document**

CADKEY OBJECT Developer supports Microsoft's Multiple Document Interface (MDI), for applications that can easily transfer data from one document to another. In addition, each document may contain multiple overlapping viewports.

### **High-quality, built-in, bi-directional translators for CADKEY®, DataCAD® and AutoCAD®**

CADKEY OBJECT Developer includes full support, available now, for DataCAD drawing files, AutoCAD DXF® files and CADKEY OBJECT Developer's native file formats. In addition, full support for CADKEY part files, AutoCAD DWG and IGES file formats are scheduled to be available February 1994.

CADKEY OBJECT Developer provides basic utilities for graphics and database applications under Windows. It is written entirely in the C++ programming language and makes full use of object-oriented programming techniques. Applications are written in C++ using Cadkey's extensive collection of class libraries and can easily be enhanced through Dynamic Link Libraries (DLL).

You may use one of two basic methods when writing an application using CADKEY OBJECT Developer. With the first method, you directly access components through the Application Programming Interface (API). This gives you the ultimate freedom in designing a user interface and database structure.

With the second method, you utilize the Applications Framework, a CAD-oriented user interface which provides screen design and layout. Other features of the Applications Framework include:

- ◆ Foreign language support.
- ◆ Entity selection (data capture) by a variety of methods, including cursor picking and polygon selection.

The Database Manager features a hierarchically structured collection of graphic and non-graphic entity objects, a memory heap manager and an interface to the ObjectStore client/server database subsystem. It also supports the Microsoft Document Interface (MDI) convention for simultaneously managing multiple documents. You can share data with other Microsoft Windows applications using Dynamic Data Exchange (DDE).

The Graphics Display Manager includes a complete window management class library that allows you to easily and efficiently construct Windows-based graphics applications. You may configure menus or translate into foreign languages by simply editing text. A 2-D/3-D graphics pipeline provides seamless support for graphics display, printing and plotting output.



# Microsoft® Windows™ 3.1 & NT™ toolkit.

## Requirements:

### Operating system:

Microsoft® Windows NT™  
Version 3.1

### Compiler:

Microsoft Visual C++  
32 bit edition

### Hardware:

Windows NT compatible  
PC (16mb minimum),  
VGA or better graphics,  
(256 colors required for  
rendering applications),  
CD ROM drive

The Graphics Display Manager also provides 3-D multiple-viewport viewing with perspective, hidden-line removal and shading.

The Geometric Modeler provides a 2-D/3-D wire-frame construction and polyhedral solids modeling engine with a full complement of object generators. You may perform editing operations which include 2-D/3-D curve trimming and solids splitting, punching and chamfering. Attribute control, analysis, and verification tools give you added functionality for design and drafting applications.

The Math Libraries support an extensive collection of math operations, including:

- ◆ 3x3 and 4x4 matrix operations for viewing and mapping.
- ◆ 2-D and 3-D intersection and tangency calculations for curves and surfaces.
- ◆ Mass property solvers.
- ◆ A wide assortment of analytic geometry functions.

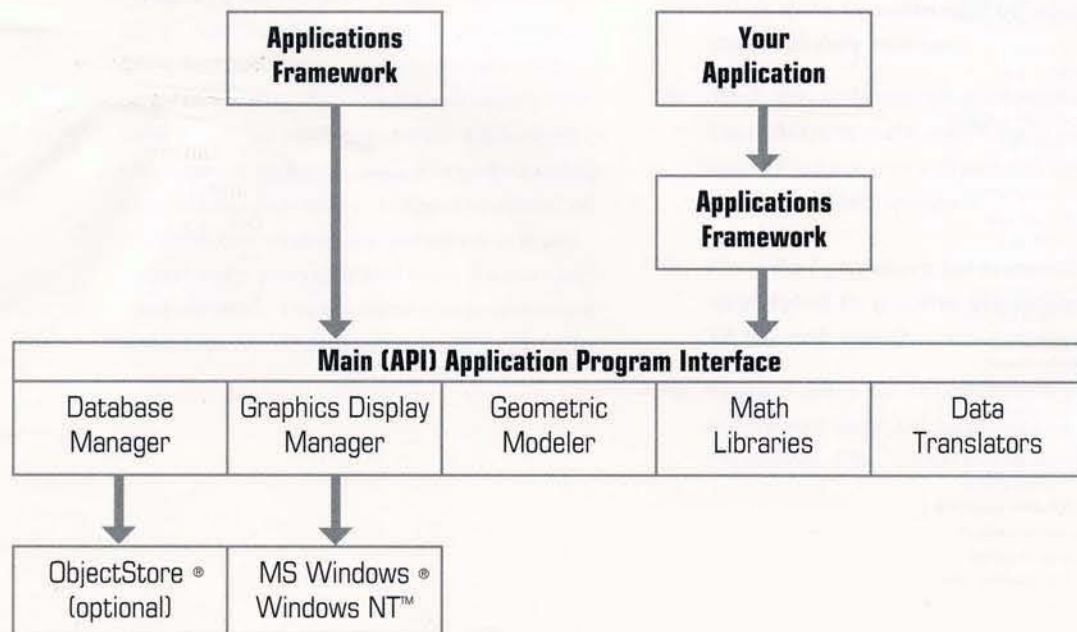
Data Translators give you the ability to import and export your CADKEY part files, DataCAD drawing files and AutoCAD DXF and DWG files.

The CADKEY OBJECT Developer is shipped on a CD-ROM that includes:

- ◆ Installation instructions.
- ◆ Object libraries, source files, development tools, make files and scripts.
- ◆ Electronic Reference Documentation (ERD) includes an extensive User Guide and Reference manual, provided on-line. The documentation can be navigated via Hypertext using Ntergaid® ERD or printed to a Postscript printer.
- ◆ Source code and executables for sample applications that you can test and run. You can use these applications as part of your application framework or as reference material.

CADKEY OBJECT Developer will be introduced in February 1994. The pre-release version will be available to qualified developers. Reserve your pre-release copy now by faxing 203-298-6484 or come visit us at COMDEX in Las Vegas November 15-19, 1993.

right: CADKEY OBJECT  
Developer system  
structure



# OBJECT Developer Questions and Answers

**Q: Why do I need to use object programming?**

**A:** Object programming combines code operating on your data with the data description itself. This combination facilitates development and maintenance of complex applications. The result is that you can create your applications and bring them to market more quickly and less expensively than ever before.

**Q: Do I need to incorporate the entire CADKEY OBJECT Developer library to build simple applications?**

**A:** No. Since CADKEY OBJECT Developer is built entirely using object-oriented design concepts, modules are "unpluggable" at several structural levels without compromising the functionality provided by low level libraries.

**Q: Will one version of CADKEY OBJECT Developer support Windows and Windows NT?**

**A:** Yes.

**Q: What kind of training/support do you offer?**

**A:** Training and support will be available in the form of seminars and fax/telephone support directly from the programmers responsible for developing the CADKEY OBJECT Developer.

**Q: Sure, it's free now but how much will it cost when the product is actually released?**

**A:** This is pre-release software. The pricing structure has not been finalized. If you decide to create an application using CADKEY OBJECT Developer, the final price will depend on where and how much of the product is used. It could be a one time charge, an initial fee plus royalty or an outright purchase with a nominal royalty fee based on volume.

**Q: What do I gain by using ObjectStore?**

**A:** ObjectStore is fast becoming an industry standard in object-oriented database management systems. It is an extremely flexible and powerful tool for applications where large, complex databases need to be manipulated efficiently. Some key features provided by ObjectStore are:

- ♦ Client/server architecture with full network support
- ♦ Cross database referencing
- ♦ Versioning which provides the ability to track multiple versions of a database schema.

**Q: Do I have to use ObjectStore?**

**A:** No. A non-ObjectStore version is provided. You may use CADKEY OBJECT Developer's own binary or text file format as a storage medium for your data.

**Q: How can I link my applications to Excel/Word/Project X?**

**A:** Applications can be linked by DDE, transferred via text files or the clipboard. Full Object Linking and Embedding, Version 2, (OLE/2) is in the works for a future release.

**Q: Why should I use this toolkit instead of AutoCAD's development environment?**

**A:** You can create sophisticated OEM applications using this toolkit. The CADKEY OBJECT Developer is fully object-oriented, scalable, and modular whereas AutoCAD is not. Also, building an application for AutoCAD requires that all users purchase AutoCAD as a front end. CADKEY OBJECT Developer allows you to develop a complete stand-alone application.



# Questions and Answers

**Q: Does my application have to look or behave like the samples/demos which you supply?**

**A:** No. You can create your own look and feel entirely. Or you can even customize our applications framework to suit your particular needs. Finally you could just use our application framework as is.

**Q: Do I have to use C++ as a development language?**

**A:** No. You can link in C language functions but, using C++ allows you to take advantage of the full range of CADKEY OBJECT Developer's capabilities.

**Q: What additional development tools do I need to use this product?**

**A:** You must have your own compiler, linker, debugger, and editor depending on your preference.

**Q: Why is Cadkey going into the business of publishing development toolkits instead of end-user applications?**

**A:** Cadkey, a leading CAD software vendor with a customer base of over 100,000 users, has recognized the needs of a maturing marketplace. CAD users have become more sophisticated and are demanding an ever-increasing range of functionality. Needs vary widely, but most center on advanced design applications with non-CAD functions linked to and accessing design data. Due to the competitive nature of this field, CAD vendors are pressured to get to market faster than ever and often features are compromised. Usually these compromises are at the expense of database management tools.

Cadkey will be offering a range of CAD applications software built in the CADKEY OBJECT Developer environment.

Cadkey also expects hundreds of other vendors to do the same, offering the widest range of graphics application software ever provided using one consistent user interface and data base environment.

**Q: Do my applications have to be compatible with Cadkey's applications?**

**A:** No. You can create either applications which are entirely of your own design and utilize your own database structure or you can create applications which adhere to Cadkey's standard applications framework and Cadkey's standard database format.

**Q: What are the system requirements for development?**

**A:** Windows NT, 16MB RAM, VGA or better, and Microsoft Visual C++.

**Q: When is the product scheduled for release?**

**A:** CADKEY OBJECT Developer is scheduled to be released in February 1994.

**Q: What data formats will be supported in the February release?**

**A:** The following formats are available: CADKEY, DataCAD, IGES and CADKEY OBJECT Developer's native file format as well as AutoCAD's, DWG and DXF, will be supported.

**Q: How do I get more information about qualifying to get the pre-release version of the software?**

**A:** Contact Cadkey, Inc. by faxing 203-298-6484. Please include your name, Co. name, address, phone and fax number. Offer limited to quantity on hand.



**CADKEY**

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### **Cadkey, Inc., the Design and Engineering Productivity Company**

Since 1981, Cadkey, has been committed to accelerating the productivity and creativity of mechanical design engineers around the world. Cadkey pioneered PC-based mechanical CAD by introducing CADKEY, the first truly three-dimensional, PC-based CAD software system in 1985. Available in 11 languages and honored with numerous awards, CADKEY systems are at work in Fortune 500 companies around the world.

Companies of every size have chosen CADKEY to handle their CAD needs, with more than 110,000 installations worldwide. Over the last decade, Cadkey's distributor network has spread globally, with over 300 Value Added Resellers in North America alone.

### **Other Cadkey, Inc. Products:**

#### **CADKEY®**

CADKEY is an integrated 3-D mechanical design, drafting and analysis software system that supports the complete design-to-manufacturing process. CADKEY contains many high-end 3-D modeling features including construction planes, real time hidden line removal, boundary element analysis and access to CADKEY ADVANCED MODELER and CADKEY ADVANCED IGES.

#### **CADKEY® ADVANCED MODELER**

CADKEY ADVANCED MODELER is an integrated NURBS-based modeler that combines seamless surface and solid modeling for complex designs. This product also includes 2-D and 3-D bi-directional IGES translations of surface and drawing layout information between CADKEY and other CAD/CAM systems.

#### **CADKEY® DRAFTER**

CADKEY DRAFTER is a powerful design and drafting product built for professional use. DRAFTER combines feature packed drafting and design with the ability to share data freely with other CAD systems.

#### **CADKEY® LIGHT™**

CADKEY Light is an introductory version of CADKEY for personal use. Patterned after the award-winning CADKEY, CADKEY Light is an entry level 3-D CAD system featuring the 2-D drafting and design elements that make CADKEY the most popular mechanical engineering software worldwide.

#### **DATA CAD®**

A sophisticated though easy to use 2-D and 3-D CAD program, that is easy to use, developed specifically for architectural, building, engineering and construction professionals.

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