



VISTA is a Division of V I Engineering

Graphical Object Oriented Programming

A VISTA™ Solution Package for Enhanced LabVIEW™ Productivity

The VISTA GOOP Inheritance Toolkit provides all the benefits of full object-orientated programming including improved scalability, easier maintenance and simplified code reuse

VISTA FACILITATES OO DEVELOPMENT

Graphical Object Oriented Programming (GOOP) with LabVIEW™ is now available through the VISTA Tools and gaining momentum among developers. Object Oriented design, a method widely accepted among all programming languages for over twenty years, provides increased scalability, reusability, ease of implementation, and lowered maintenance costs. GOOP in LabVIEW allows for the widest scope of application development architecture and is suitable for both simple projects and large scale application development

GOOP supports separation of application logic and GUI, so that changes to the logic do not affect the GUI or vice versa, and since key application parts can also be isolated and run on different machines, modification of object parameters does not affect logic, allowing easier updates. This also makes de-bugging the entire application inherently easier. Classes, as well, are easily expanded without impacting application logic.

Rather than using individual functions, VISTA GOOP Tools facilitates use of large functional application components for increased reuse resulting in more powerful and meaningful reuse. With GOOP, applications are developed using large, well-defined components each with numerous sub-components. As a result, development time is significantly reduced as reuse involves a small number of large components vs. the hundreds of small components found in a typical application.

VISTA GOOP INHERITANCE TOOLKIT INCLUDES:

GOOP Wizard 3

- ◆ Automatically generate classes, methods, and objects

Icon Editor

- ◆ Easily generate VI icons

Development Distribution Tool

- ◆ Distribute GOOP applications

Object In Memory

- ◆ An improved GOOP debugging tool

KEY BENEFITS

- ◆ Streamlined Large Application Development
- ◆ Improved Scalability
- ◆ Easier Maintenance
- ◆ Simplified Code Reuse



INTRODUCING THE NEW VISTA UML MODELING TOOL:

The VISTA UML Modeler is an easy to use system modeling tool closely integrated with LabVIEW. It provides a tool supported notation to describe and discuss the design and architecture of test and measurement systems. This makes modeling more productive than relying solely on white board or multi purpose drawing programs.

Key Features

- ◆ Support for use case, class and sequence UML diagrams.
- ◆ Code generation from class diagram to LabVIEW GOOP code.
- ◆ Generation of class diagram from LabVIEW GOOP code.
- ◆ Synchronization of class diagram or individual classes with GOOP code.
- ◆ Context help provides descriptions of vi's, tool functions, and UML notation, along with displays of icons for class methods.
- ◆ Printing and Export of diagrams to .png and .jpg files.
- ◆ Auto Place feature for Class diagram.
- ◆ Launch classes in GOOP Wizard 3 from within UML Modeller.

For more information, online demos, and free trails, visit the new VISTA web site at vista.viengineering.com

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VISTA Graphical Object Oriented Programming

Systems Design with GOOP

Systems Designed with GOOP is taught by certified instructors from V I Engineering, and presents the concepts of Graphical Object Oriented Programming specifically for LabVIEW programmers. It is a two-day, hands-on course and includes an evaluation copy of the VISTA GOOP Wizard, developed by Endevo Inc. of Stockholm Sweden.

The class is intended for LabVIEW users and department managers who need the most advanced techniques for developing large-scale LabVIEW applications or de-bugging and maintaining projects of all sizes. Some cursory knowledge of object oriented programming is very helpful, but not necessary to be successful with the course.

GOOP TRAINING COURSE SCHEDULE

Washington D.C.	Oct. 4-5, 2005
Irvine, CA	Feb. 8-9, 2006
Minneapolis, MN	April 5-6, 2006
Detroit, MI	June 7-8, 2006
Denver, CO	Aug. 9-10, 2006

VISTA Customers

V I Engineering focuses on the Automotive, Manufacturing, Life Sciences, Aerospace and DoD markets, serving primarily Fortune 500 companies. Our growing list of satisfied clients includes Medtronic, Rockwell Collins, 3M, DaimlerChrysler, Eaton, General Motors, Harris Communications, Lawrence Livermore National Lab, The Jet Propulsion Laboratory, NASA, NIST, Northrop Grumman, Sandia National Lab, Lockheed Martin, and Raytheon

Course Overview

Introduction to Decomposition

- ◆ You will learn to break complex application problems into more manageable pieces.
- ◆ You will learn to describe the problem domain in a manner that matches reality.

Programming Concepts

- ◆ You will learn fundamental aspects of programming needed for object oriented program development.

Object Oriented Design

- ◆ You will learn to design component based systems that will help develop reusable code.

GOOP

- ◆ You will learn to use GOOP tools to increase productivity. Programming exercises will demonstrate how to build object-oriented software components that ensure reusability.

Course Agenda

Day one

- ◆ Object oriented system development.
- ◆ Iterative and incremental development.
- ◆ OO analysis, design and implementation.
- ◆ Actors and Use-cases.
- ◆ Classes, objects, methods and attributes.
- ◆ UML notation for the concepts covered.
- ◆ Relationships between classes.
- ◆ Association, aggregation and inheritance.

Day Two

- ◆ Using the GOOP Wizard (exercise).
- ◆ Using the inspector to debug classes
- ◆ Review the GOOP repository
- ◆ OO programming with GOOP

The Course Includes:

- ◆ A 250 page course book with slides
- ◆ GOOP Exercises and Solutions
- ◆ Sample GOOP code
- ◆ A trial version of the VISTA GOOP Wizard

V I Engineering

V I Engineering is an experienced systems integrator that provides automated test and measurement systems, engineering information management, and LabVIEW productivity tools to Fortune 500 customers in the automotive, life sciences, manufacturing, and aerospace industries. We are also a leading Select Integrator in National Instrument's Alliance program.

Engineering Services

VI Engineering designs and develops automated test and measurement systems. We provide technical specifications, custom programming, hardware integration, and turnkey applications that cover a very broad range of technical measurement capability and meet regulated industry requirements for validation and traceability.

Engineering Information Management (EIM)

The Engineering Information Management division of VI Engineering provides software solutions that improve the efficiency of Test Planning, Test Requests, Test Scheduling, Test Execution, Post Test Analysis, and Document Management. Clients experience productivity gains through automation and optimization of business activities, fast, easy access to information and robust data analysis.

Locations

V I Engineering's corporate headquarters are located in Farmington Hills, MI. with engineering offices located in White Bear Lake, MN. and Indianapolis, IN.

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