

Using Microsoft Visual C++ Developer Studio

- Self-contained environment for Windows program development:
 - creating
 - compiling
 - linking
 - testing/debugging
- IDE that accompanies Visual C++

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Visual Studio Components

• The Editors

C or C++ source program editor

- cut/paste color cues, indentation,
- generates text files

Resource Editor

- icons, bitmaps, cursors, menus, dialog boxes, etc.
- graphical, WYSIWYG, Integrated
- generates resource script (.rc) files
- integrated with text editor

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The Compilers

- **C/C++ Compiler**
 - translates source pgms to machine language
 - detects and reports errors
 - generates object (.obj) files for linker
- **Resource Compiler**
 - Reads .rc file
 - Generates binary resource (.res) file for linker

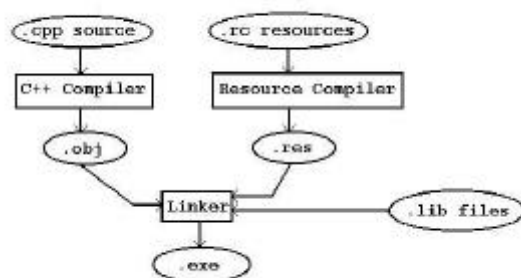
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The Linker

- reads compiler .obj/.res files
- accesses C/C++/Windows libraries
- generates executable (.exe or .dll)

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VC++ Program Build Process



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The Debugger

- powerful source code debugger
- integrated with all parts of Dev Studio
- Features
 - breakpoints
 - tracing through/over functions
 - variable watch windows
 - much more

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The Wizards

- **AppWizard**
 - Windows code generator for MFC apps
 - automatically creates working program skeletons
- **ClassWizard**
 - facilitates easy extension of AppWizard-generated classes
 - used to tailor AppWizard-generated MFC skeletons

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Online Help

- Can be accessed by:
 - InfoViewer book/chapter
 - Topic (keyword search-->relevant topics/articles)
 - F1 help (help on item under mouse cursor)
 - The Web: MSDN (Microsoft Developer Network)

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InfoViewer Online Help

Platform, SDK, and DDK Documentation

Platform SDK

Reference

Functions

Win32 Functions (Alphabetical listing)

Messages

Win32 Messages (Alphabetical listing)

Structures

Win32 Structures (Alphabetical listing)

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MSDN Library

<http://msdn.microsoft.com/sideguide/sitemap.asp>

Go to MSDN Library:

Visual Studio 6.0 Documentation

Visual C++ Documentation

Reference

Microsoft Foundation Class Library & Templates

Microsoft Foundation Class Library

Class Library Reference

Platform SDK

Graphics and Multimedia

Win32 API

Reference

Win32 Functions in Alphabetical Order

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Other Advanced Tools

- SPY++
- PVIEW
- ActiveX utilities, a gallery of software components
- More

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Using Developer Studio 97 and Visual C++ 5.0/6.0

- To prepare many kinds of applications
 - Win32 Console Applications (DOS programs)
 - Win32 API Apps
 - Win32 MFC apps
 - DLLs
 - Lots of others

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Components

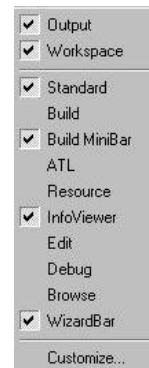
- Menu bar
- Several tool bars
- Project Workspace Window (left)
 - InfoView, FileView, ClassView, ResourceView
- Editor Window (right)
 - Enter C/C++ code
- Output Window (bottom).
 - System messages (errors)

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Toolbars

- Contain icons--instant routes to main menu functions
- Output, Workspace, Standard, Build, Edit, InfoViewer, Resource, etc.
- May not be visible
- If not, right click on any visible toolbar
- Brings up following popup window
- Can activate a toolbar by clicking on its check box

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Projects and Workspaces

- Project
 - collection of interrelated source files
 - compiled/linked to generate a Windows executable
- Project Workspace
 - folder with all information relating to a project
 - also used to refer to Visual Studio desktop window
- Project info stored in .dsw and .dsp text files

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Important Dev Studio Generated Files

- | | |
|--------------|--------------------------------|
| • .dsp | Project file |
| • .c or .cpp | C/C++ source |
| • .h | C/C++ header |
| • .dsw | Workspace file |
| • .rc | Resource script |
| • .res | Compiled resource |
| • .ico | Icon |
| • .bmp | Bitmap image |
| • .exe | Executable program |
| • .dll | Dynamic Link Library (if used) |
| • .obj | Machine code translations |

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Temporary Dev Studio generated files

- Many are huge and can (should) be removed!
- .ilk Incremental link file
- .pch Precompiled header
- .pdb Precompiled debugging info
- .idb Incremental debug info
- .ncb Supports viewing classes
- .aps Supports viewing resources
- .bsc Browser information file
- .clw Supports ClassWizard
- .opt Workspace configuration
- .plg Build log file

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Windows Program Configurations

- Debug
 - appends debugging info
 - produces more and larger files
- Release
 - no debugging info
 - optimized for size & efficiency

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Setting the Configuration

- Click "Build" on Main Menu
- Choose "Select Active Configuration"
- Choose configuration ("Debug" or "Release")
- Default is "Debug"

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Create a Win32 App w/ Dev Studio

- **Startup**
 - click 'Start' on Task Bar
 - 'Programs | Microsoft Visual Studio | Microsoft Visual C++'
- **Creating Project**
 - 'File | New' from menu
 - 'Projects' Tab (if not chosen)
 - 'Win32 Application'
 - Name the project (e.g. winapp1)
 - 'OK'

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- **"Win32 Application, Step 1 of 1" Window**
 - Select "An Empty Project"
 - Click "Finish"
- **"New Project Information" Window**
 - Click "OK"

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Inserting source files into project:

- Open new C++ file, type or copy/paste the code into the program
 - "File | New | Files tab | C++ Source"
 - Make sure "Add to Project is checked"
 - Enter a file name (e.g., winapp1)
 - Type or paste in the resulting Edit window
- To see/modify a file added to project:
 - click FileView tab in Workspace Window
 - click on file name in FileView window

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- **Building Project:**

- ‘Build | Build winapp1” from menu
 - Shortcut key: F7
- Project will be compiled/linked
- Messages will appear in Output Window

- **Running Program:**

- ‘Build | Execute winapp1”
 - Shortcut key: Ctrl-F5, or click exclamation point

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- **Cleanup:**

- Copy source, header, resource files to disk
- Copy .exe from project's Debug directory
- delete project directory from hard drive

- **Exiting Developer Studio:**

- ‘File | Exit’ from menu

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