# Mastering Debugging with Visual Studio

## Creator

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## Reference

Mastering Debugging In Visual Studio

## Presentation

### Breakpoints

- Debugging with Breakpoints
  - Step Over
  - Step Into
  - Step Out
  - Continue
  - Set Next Statement
  - Show Next Statement
- Labeling in Break Point
- Conditional Breakpoint
- Import / Export Breakpoint
- Breakpoint Hit Count
- Breakpoint When Hit
- Breakpoint Filter

### Data Tip

- Pin Inspect Value During Debugging
- Drag-Drop Pin Data Tip
- Adding Comments
- Last Session Debugging Value
- Import Export Data Tips
- Change Value Using Data Tips
- Clear Data Tips

### Watch Windows

- Locals
- Autos

- Watch
  - Creating Object ID

## Immediate Window

## Call Stack

## Debugging Multithreaded Program (optional)

- Exploring Threads Window
- Flag Just My Code
- Break Point Filter - Multithread Debugging
- Debugging Parallel Program
- Parallel Task and Parallel Stacks

## Debugging with IntelliTrace (optional - speak to)

- Overview
- Mapping with IntelliTrace
- Filter IntelliTrace Data

## Useful Shortcut Keys for VS Debugging

| Shortcut Keys | Descriptions |
|---|---|
| Ctrl-Alt-V, A | Displays the Auto window |
| Ctrl-Alt-B | Displays the Breakpoints dialog |
| Ctrl-Alt-C | Displays the Call Stack |
| Ctrl-Shift-F9 | Clears all of the breakpoints in the project |
| Ctrl-F9 | Enables or disables the breakpoint on the current line of code |
| Ctrl-Alt-E | Displays the Exceptions dialog |
| Ctrl-Alt-I | Displays the Immediate window |
| Ctrl-Alt-V, L | Displays the Locals window |
| Ctrl-Alt-Q | Displays the Quick Watch dialog |
| Ctrl-Shift-F5 | Terminates the current debugging session, rebuilds if necessary, and starts a new debugging session. |
| Ctrl-F10 | Starts or resumes execution of your code and then halts execution when it |
| Ctrl-Shift-F10 | Sets the execution point to the line of code you choose |

| Shortcut Keys | Descriptions |
| --- | --- |
| Alt-NUM * | Highlights the next statement |
| F5 | If not currently debugging, this runs the startup project or projects and attaches the debugger. |
| Ctrl-F5 | Runs the code without invoking the debugger |
| F11 | Step Into |
| Shift-F11 | Executes the remaining lines out from procedure |
| F10 | Executes the next line of code but does not step into any function calls |
| Shift-F5 | Available in break and run modes, this terminates the debugging session |
| Ctrl-Alt-H | Displays the Threads window to view all of the threads for the current |
| F9 | Sets or removes a breakpoint at the current line |
| Ctrl-Alt-W, 1 | Displays the Watch 1 window to view the values of variables or watch expressions |
| Ctrl-Alt-P | Displays the Processes dialog, which allows you to attach or detach the debugger to one or more running processes |
| Ctrl-D,V | IntelliTrace Event |