

**VBA Programming for  
Microsoft Project  
'98 through 2010  
with an Introduction to VSTO**

Rod Gill  
Microsoft Project MVP

# VBA Programming for Microsoft Project '98 through 2010 with an Introduction to VSTO

Copyright © 2011 Rod Gill

Publisher: Chefetz LLC  
Author: Rod Gill  
Tech Editor: Jack Dahlgren  
Copy Editor: Rodney L. Walker  
Cover Design: Emily Baker

ISBN: 978-1-934240-21-2

LCCN: 2011920851

All rights reserved. You may not reproduce or transmit any part of this work in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage or retrieval system, without the prior written consent of the copyright owner and the publisher.

We use trademarked names in this book in an editorial context and to the benefit of the trademark owner with no intention of infringement of the trademark.

Published and distributed by Chefetz LLC dba MSProjectExperts, 90 John Street, Suite 404, New York, NY 10038. (646) 736-1688 <http://www.msprojectexperts.com>

We provide the information contained in this book on an “as is” basis, without warranty. Although we make every effort to ensure the accuracy of information provided herein, neither the authors nor the publisher shall have any liability to any person or entity with respect to any loss or damage caused or allegedly caused directly or indirectly by the information contained in this work.

MSProjectExperts publishes a complete series of role-based training/reference manuals for Microsoft’s Enterprise Project Management software including Microsoft Project and Microsoft Project Server. Use our books for self-study or for classroom learning delivered by professional trainers and corporate training programs. To learn more about our books and courseware series for Administrators, Implementers, Project Managers, Portfolio Managers, Resource Managers, Executives, Team Members, and Developers, or to obtain instructor companion products and materials, contact MSProjectExperts by phone (646) 736-1688 or by email [info@msprojectexperts.com](mailto:info@msprojectexperts.com).

# Contents

About the Author .....	ix
Download the Sample Files .....	ix
Author's Introduction.....	x
<b>SECTION 1: Microsoft Project VBA Essentials .....</b>	<b>1</b>
Introducing Project VBA.....	3
Adding the Developer Tab to the Project Ribbon.....	3
Sample Project Files.....	4
<b>Module 01: Defining and Using Custom Fields .....</b>	<b>7</b>
Overview of Custom Fields.....	9
Using Formulas to Support Project VBA Macros .....	10
Defining Custom Fields.....	11
<i>Using a Value List in a Custom Field .....</i>	<i>13</i>
<i>Using a Formula in a Custom Field.....</i>	<i>17</i>
<i>Testing for an NA Date Value .....</i>	<i>21</i>
<i>Using Graphical Indicators in a Custom Field .....</i>	<i>21</i>
Defining Custom Outline Codes.....	25
Deleting a Custom Field or Outline Code .....	30
<b>Module 02: Using Objects, Methods, and Properties .....</b>	<b>33</b>
Understanding the Microsoft Project Object Model.....	35
Explaining Objects, Methods and Properties.....	37
Using Application-Related Objects, Methods, and Properties .....	37
Using Project-Related Objects, Methods, and Properties .....	39
<i>Using Project Objects .....</i>	<i>39</i>
<i>Using Project Methods.....</i>	<i>41</i>
<i>Using Project Properties .....</i>	<i>41</i>
Using Task-Related Objects, Methods, and Properties.....	42
Using Resource-Related Objects, Methods, and Properties .....	43
Using Assignment-Related Objects, Methods, and Properties.....	44
Using the Object Browser.....	45
<b>Module 03: Recording Macros .....</b>	<b>49</b>
Understanding When to Record a Macro.....	51
Recording a Macro .....	51
Shortcut for Recording a Macro in Project 2010.....	52
Modifying a Recorded Macro .....	55
Storing Your VBA Code .....	56
Controlling the Size of Project .MPP Files .....	59
Repairing Corrupted Files .....	60
<b>Module 04: Looping Through Your Schedule.....</b>	<b>61</b>
Looping Through All Tasks in a Project .....	63

Clearing a Custom Field for Non-Summary Tasks .....	64
Using Loops to Set Custom Field Values.....	64
<b>Module 05: Creating New Objects in Microsoft Project .....</b>	<b>67</b>
Safely Creating New Objects .....	69
Creating New Views, Tables, and Filters.....	69
Creating a New Toolbar .....	70
Creating a New Menu.....	71
The new Project 2010 ribbon and menus .....	73
<b>Module 06: Managing Run-Time Errors .....</b>	<b>77</b>
Managing Errors .....	79
<i>Using Resume Next Error Handling .....</i>	<i>81</i>
<i>Using Goto Error Handling.....</i>	<i>81</i>
<i>Selecting an Error Handling Method.....</i>	<i>82</i>
<i>Using the Err Object.....</i>	<i>82</i>
<b>Module 07: Creating and Running UserForms .....</b>	<b>85</b>
Understanding UserForms.....	87
Creating a UserForm .....	88
Adding Code to a UserForm.....	89
<b>Module 08: Controlling Microsoft Project Using Events.....</b>	<b>91</b>
What Are Events and How Can They Help You? .....	93
Understanding Project Events.....	93
Understanding Task Events .....	95
<b>Module 09: Creating the Project Control Center Macro.....</b>	<b>99</b>
Structuring Your Macros.....	101
Project Control Center Macro Overview.....	102
<i>Designing the Project Control Center.....</i>	<i>102</i>
<i>Deliverables for Project Control Center .....</i>	<i>103</i>
<i>Understanding the Project Control Center Code.....</i>	<i>104</i>
<b>Module 10: Displaying Driving Tasks .....</b>	<b>111</b>
Designing the Driving Task Macro .....	113
<i>Designing the Main Procedure .....</i>	<i>114</i>
<i>Understanding Task Dependencies.....</i>	<i>115</i>
<i>Understanding the Task Driver Code .....</i>	<i>115</i>
Adding a UserForm to Display the Results .....	123
Adding a Toolbar to Run the Macro .....	127
<b>Module 11: Sharing and Distributing Your Macros .....</b>	<b>129</b>
Sharing and Distributing your Macros .....	131
Running Your Macros from All Projects.....	131
Using the Global.mpt File .....	131
Automatically Move Macros into the Global.mpt.....	132
<i>Copying Modules and Forms to the Global.mpt .....</i>	<i>132</i>

<i>Adding the CopyToGlobal Toolbar Button .....</i>	134
<i>Adding a Macro Command to the Ribbon.....</i>	134
<i>Editing the Global.mpt Code to Create a Global Macros Toolbar .....</i>	136
<b>Module 12: Working with Time Phased Data.....</b>	<b>139</b>
Understanding Time Phased Data .....	141
Reading Time Phased Data .....	142
Exporting Time Phased Data into a .csv file.....	144
Writing Time Phased Data .....	146
Updating the Project Control Center with Resource Data .....	147
Designing the Get Resource Procedure.....	149
<b>Module 13: Controlling Excel with Project VBA.....</b>	<b>153</b>
Using Excel for Project Reporting .....	155
Understanding VBA Automation.....	155
<i>Using Late Binding.....</i>	155
<i>Using Early Binding.....</i>	156
Changing Security to enable Office Automation.....	159
Using VBA to add a Reference to Excel.....	159
Taking Advantage of Early and Late Binding.....	160
Connecting to an Already Open Copy of Excel .....	161
Exporting a List of Resources to Excel .....	162
Running Excel VBA Code Using Project VBA.....	164
Controlling Microsoft Project from Excel .....	164
Creating the S-Curves Macro in Excel .....	166
Completing the Who Does What When Macro.....	170
<b>Module 14: Create a Cost Margin Report.....</b>	<b>177</b>
Understanding the Cost Margin Report.....	179
<b>Module 15: Consolidating Multiple Projects .....</b>	<b>185</b>
Creating Consolidated Project Reports .....	187
<b>Module 16: Changing Working Time.....</b>	<b>191</b>
Working with Calendars.....	193
Designing the Update Calendars Macro .....	193
<i>Create the Calendar Exceptions UserForm .....</i>	194
<i>Add the Text Class to Store Calendar Exceptions.....</i>	203
<i>Apply Calendar Changes to All Projects.....</i>	205
<i>Add the Macro to the Project Control Center Toolbar.....</i>	208
<b>Module 17: Display Predecessor and Successor Tasks.....</b>	<b>211</b>
Working with Task Dependencies.....	213
Designing the LinkedTasks Macro .....	213
Understanding the TaskDependency Object.....	215
Understanding the TaskLinks Macro Code.....	215
<b>Module 18: Miscellaneous Useful Code.....</b>	<b>223</b>
Indenting Tasks Using VBA .....	225

Reorganizing Task Sequences .....	227
Creating Formulas in Custom Fields .....	228
Working with Hyperlinks .....	228
Working with Subprojects.....	230
Making Your Code Run Faster.....	231
<i>Timing Code Execution</i> .....	232
Using the Windows API to Open and Save Files .....	233
<i>Using File Open</i> .....	234
<i>Using File Save as</i> .....	236
<i>Using Get Folder</i> .....	236
<i>Applying the clsBrowse Class to a New Project</i> .....	237
<b>SECTION 2: Reading and Writing Data with Project Databases.....</b>	<b>239</b>
<b>Developing Project Database Code.....</b>	<b>241</b>
<i>Downloading the Sample Files</i> .....	241
<b>Module 19: Importing Data from Other Sources.....</b>	<b>243</b>
Importing Data from an Excel Workbook.....	245
Importing Data from an Access Database.....	253
Importing Data from an SQL Server Database.....	255
<b>Module 20: Reading and Writing Data in a Project Database .....</b>	<b>259</b>
Using the PJDB.HTM File .....	261
Looping Through all Projects in a Database .....	262
Reading Data from a Database .....	264
<i>Creating the Database View</i> .....	264
<i>Creating the Excel VBA Macro</i> .....	265
Writing Data to a Database.....	267
<b>Module 21: Using OLE DB.....</b>	<b>273</b>
Understanding OLE DB .....	275
<i>Using the OLE DB Driver for Your Project Version</i> .....	275
<i>OLEDB Drivers and Project 2007 Onwards</i> .....	276
<i>Connecting to a .mpp File Using OLE DB</i> .....	276
<b>Module 22: Accessing Project Server Data from Excel .....</b>	<b>283</b>
Understanding the PJSVRDB.HTM File.....	285
Understanding the Project Server Reporting Database.....	286
<b>Weekly Reporting on Project Server Data .....</b>	<b>286</b>
<i>Looping through All Projects</i> .....	286
<i>Starting Project Professional and Logging in to Project Server</i> .....	287
<i>Setting up the Excel Report</i> .....	288
<i>Reading a List of All Project Titles</i> .....	288
<i>Reading Milestone and Current Task Data</i> .....	292
<i>Writing the VBA Code for the Excel Report Macro</i> .....	293
<b>Creating a Project Program Report.....</b>	<b>297</b>

<b>Module 23: Using Project 2007 VBA .....</b>	<b>299</b>
Introducing Project 2007 VBA.....	301
Using Named Parameters .....	301
Undoing a Macro.....	302
Managing Custom Fields.....	303
Controlling Visual Reports .....	304
Managing Calendars.....	304
Formatting Cell Background Colors .....	305
Managing Deliverables.....	306
Converting SQL Views from 2003 to 2007 .....	306
<b>Module 24: Using Project 2010 VBA .....</b>	<b>311</b>
Introducing Project 2010 VBA.....	313
Using Named Parameters .....	313
Project 2010 VBA Compatibility.....	314
Controlling the Timeline View.....	314
<i>Displaying the Timeline View.....</i>	<i>314</i>
<i>Adding Tasks to the Timeline View .....</i>	<i>315</i>
<i>Handling User-Controlled Scheduling .....</i>	<i>316</i>
Working with the Team Planner .....	316
Miscellaneous New VBA Methods.....	316
<b>SECTION 3: Developing Add-ins using Visual Studio for Office.....</b>	<b>319</b>
When and Why to Develop Add-ins for Microsoft Project .....	321
About Project and Add-ins .....	321
Developer Tools you will need.....	322
Skills and Knowledge you need to develop a Project Add-in .....	322
<b>Module 25: Introducing VSTO Project Add-ins .....</b>	<b>323</b>
Introducing VSTO Project Add-ins .....	325
What Skills and Knowledge you need to Know.....	325
What your Development PC needs.....	325
Methodology for Developing an Add-in .....	326
Choosing your Programming Language .....	326
<i>FileOpen code in VB.....</i>	<i>327</i>
<i>FileOpen code in C# for Visual Studio 2008 .....</i>	<i>327</i>
<i>FileOpen code in C# for Visual Studio 2010 .....</i>	<i>328</i>
Differences between VBA and VB or C# .....	328
<i>Code Structure Differences .....</i>	<i>328</i>
<i>Code Locations .....</i>	<i>329</i>
<i>Deployment Differences .....</i>	<i>329</i>
Checking your Development Environment Works.....	329
Security Options for Add-ins.....	331
Disabling and Removing Add-ins .....	332

<b>Module 26: Your First Add-in .....</b>	<b>333</b>
<b>Converting a Sample Macro into an Add-in .....</b>	<b>335</b>
<i>The VBA Macro .....</i>	<i>335</i>
<i>Converting VBA to VB .....</i>	<i>338</i>
<i>Converting VBA to C# 2010.....</i>	<i>342</i>
<i>Replacing the UserForm.....</i>	<i>345</i>
<b>Error Handling in Add-ins .....</b>	<b>348</b>
<b>VSTO and Project Events.....</b>	<b>350</b>
<i>To add an event in VB:.....</i>	<i>350</i>
<i>To add an event in C#: .....</i>	<i>351</i>
<i>Creating a Button on the Project 2010 Ribbon .....</i>	<i>352</i>
<b>Developing 64 Bit Add-ins .....</b>	<b>355</b>
<b>Module 27: Deploying your Add-in.....</b>	<b>357</b>
<b>Deployment Choices for Add-ins.....</b>	<b>359</b>
<i>ClickOnce Deployment .....</i>	<i>359</i>
<i>Windows Installer Deployment .....</i>	<i>361</i>
<b>Index.....</b>	<b>363</b>