

Making SharePoint Work with Workflow

Robert L. Bogue

Rob.Bogue@ThorProjects.com

3 Part Presentation Series

SharePoint 2010 Workflow with SharePoint Designer and Visio

Robert Bogue

Rob.Bogue@ThorProjects.com

<http://www.thorprojects.com/blog>

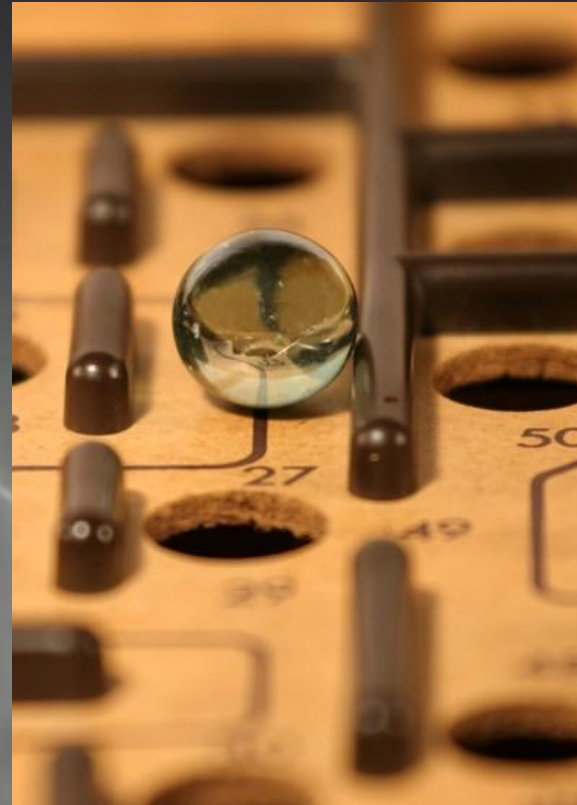
Who am I?

- 7 Time Microsoft MVP currently awarded for SharePoint
- Architect = Developer + IT Professional
- Author of The SharePoint Shepherd's Guide for End Users – and 17 other books.
- Blogger:
<http://www.thorprojects.com/blog>



What is a workflow?

- The American Heritage Dictionary for the English Language, Fourth Edition says...
“1. The flow or progress of work done by a company, industry, department, or person.
2. The rate at which such flow or progress takes place.”



Workflow is What?

- Serializable
- Resumable
- Long-Running
- Deferrable



Actions on Data

- Alerts
- Event Receivers
- Workflows



SharePoint Workflow Tools

- Web User Interface
- SharePoint Designer
- Visio
- Visual Studio 2010



Starting a Workflow

- Manual
 - Manual with Manage Web
- On Major Version
- On Item Created
- On Item Changed



Out of the Box Workflows

- Three State (SF)
- Approval
- Collect Feedback



A dramatic, dark sky with heavy, dark clouds. Several bright, jagged lightning bolts are visible, striking across the frame. The overall tone is moody and intense, with the lightning providing the primary light source against the dark background.

DEMO: OUT OF THE BOX WORKFLOW

Configuration vs. Customization

- Configuring Workflows in the User Interface
- Customizing Workflows in SharePoint Designer



Workflow Options

- SharePoint / Workflow Foundation 3.5
 - Serial
 - State Machine
- Workflow Foundation 4
 - Flowchart



Association Form

- Displayed when the workflow template is associated to a list, content type, or site
- Used to set up the configuration for the workflow template



Instantiation Form

- Displayed when a user manually starts a workflow
- Is not displayed when workflows are automatically started



Variables and Parameters

- Variables = Working Data
- Parameters = Variables provided on the association or instantiation form

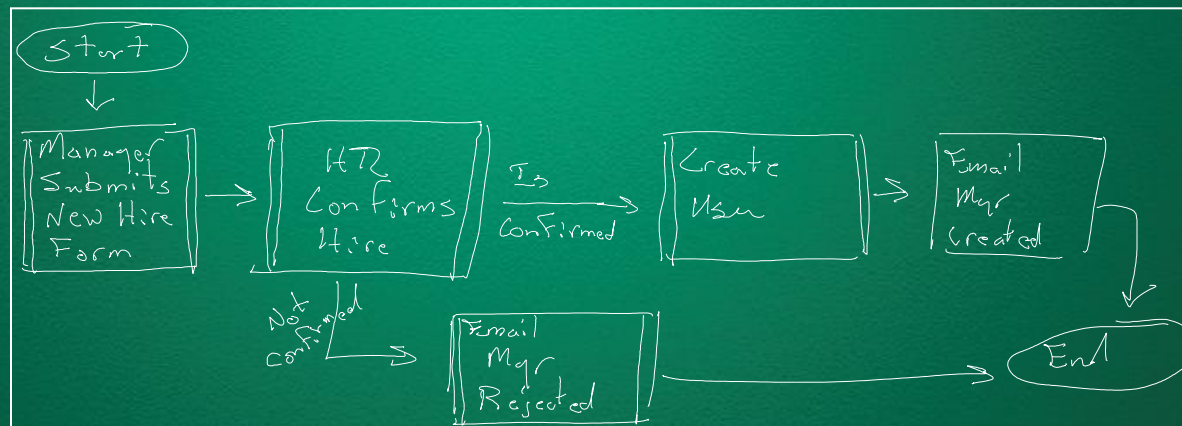


Workflow Attachment

- List / Library
- Content Type
- Site

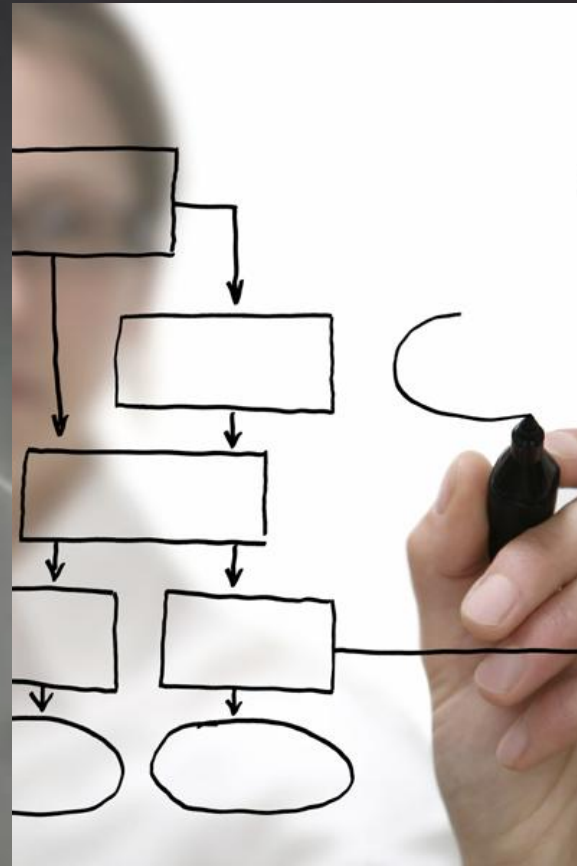


Start with a sketch



Visio and Workflow

- New SharePoint workflow template
- Exported workflows can be imported into SharePoint Designer
- Not a complete workflow tool – can't specify the details



A dramatic, dark sky with heavy, dark clouds. Several bright, jagged lightning bolts are visible, striking across the frame. The overall tone is moody and intense, with the lightning providing the primary light source against the dark background.

DEMO: VISIO WORKFLOW

SharePoint Designer Actions

- Add a Comment
- Add Time to Date
- Assign a Form to a Group
- Assign a To-do Item
- Check In Item
- Check Out Item
- Collect Data from a User
- Compare a version of the Document Set
- Copy List Item
- Declare Record
- Delete Item
- Discard Check Out Item
- Do Calculation
- Extract Substring from End of String
- Extract Substring from Index of String
- Extract Substring from Index with Length
- Extract Substring from Start of String
- Find Interval Between Dates
- Log to History List
- Lookup Manager of a User
- Pause for Duration
- Pause until Date
- Send an Email
- Send Document Set to Repository
- Set Content Approval Status
- Set Content Approval Status for the Document Set
- Set Field in Current Item
- Set Time Portion of Date/Time Field
- Set Workflow Status
- Set Workflow Variable
- Start Approval Process
- Start Custom Task Process
- Start Document Set Approval Process
- Start Feedback Process
- Stop Workflow
- Undeclare Record
- Update List Item
- Wait for Field Change in Current Item

SharePoint Designer Conditions

- If any value equals value
- Title field contains keywords
- Created by a specific person
- Created in a specific date span
- Modified by a specific person
- Modified in a specific date span
- Person is a valid SharePoint User



A dramatic, dark sky with heavy, dark clouds. Several bright, jagged lightning bolts are visible, striking across the frame. The overall tone is moody and intense, with the lightning providing the primary light source against the dark background.

DEMO: SHAREPOINT DESIGNER WORKFLOW

The Role of InfoPath

- Enhanced Form Validation
- Multiple Views
- Requires SharePoint Server



Reusable and Global Reusable

- Reusable = in the Site
- Global Reusable = in the site collection



Packaging

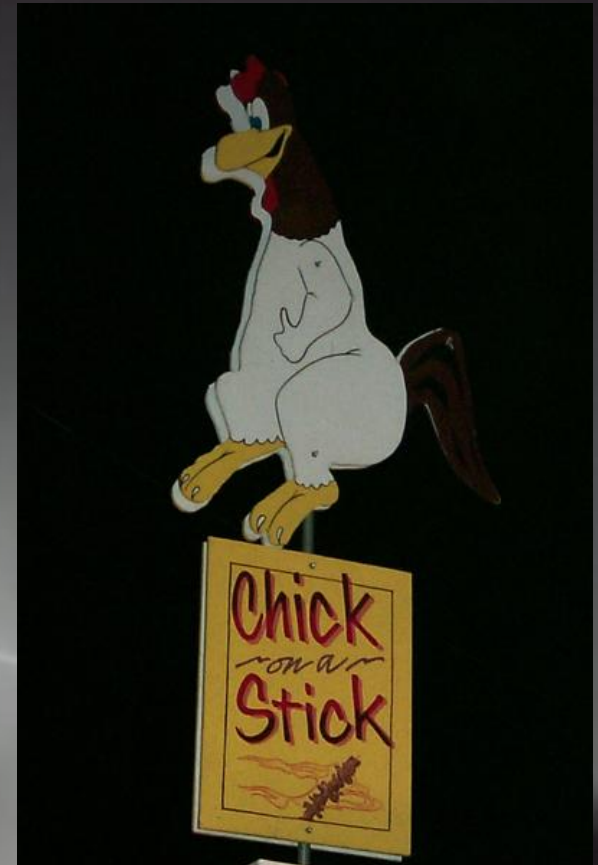
- Workflows are packaged as SharePoint Solutions (WSP)
- Reusable workflows can be packaged
- Global reusable workflows can not be directly packaged



Workflow Save As Template

- Creates a WSP that can be imported into Visual Studio
- Can't package global workflows (Those available in all sites in the site collection)

Look for Microsoft Patterns and Practices Guidance on how to package global workflows. (www.microsoft.com/spg and www.codeplex.com/spg)



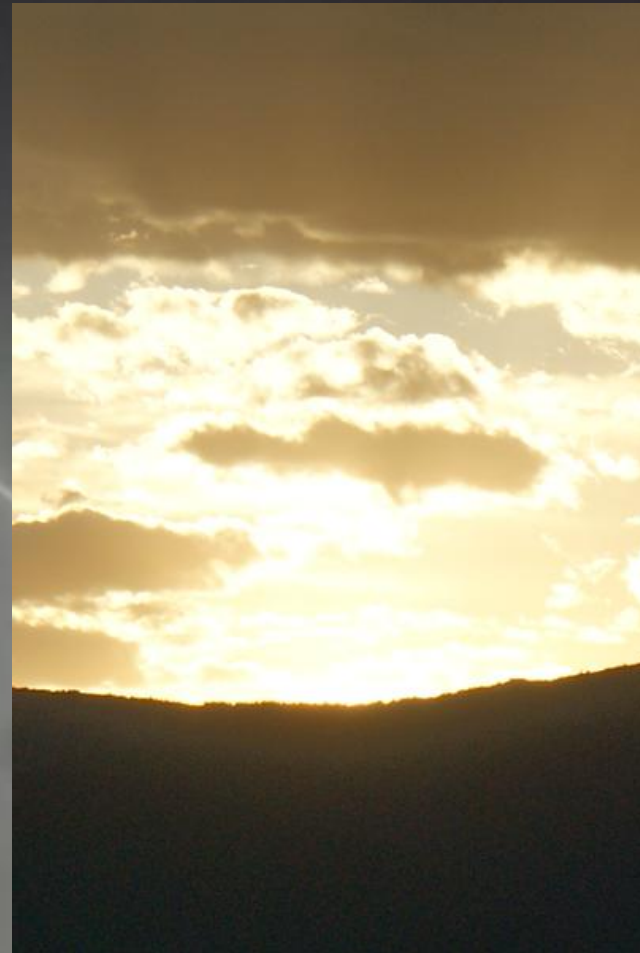
SharePoint Designer Limitations

- Looping
- Iteration
- State Machine Workflows
- Debugging



SharePoint Designer Advantages

- EASY!
- Accessible – anyone can do it
- Safe – It's difficult to create a workflow that will hurt the system



Thank You

- Questions?
- What's next
 - Extending SharePoint Designer Workflows
 - Developing Workflows with Visual Studio 2010

Extending SharePoint Designer Workflows

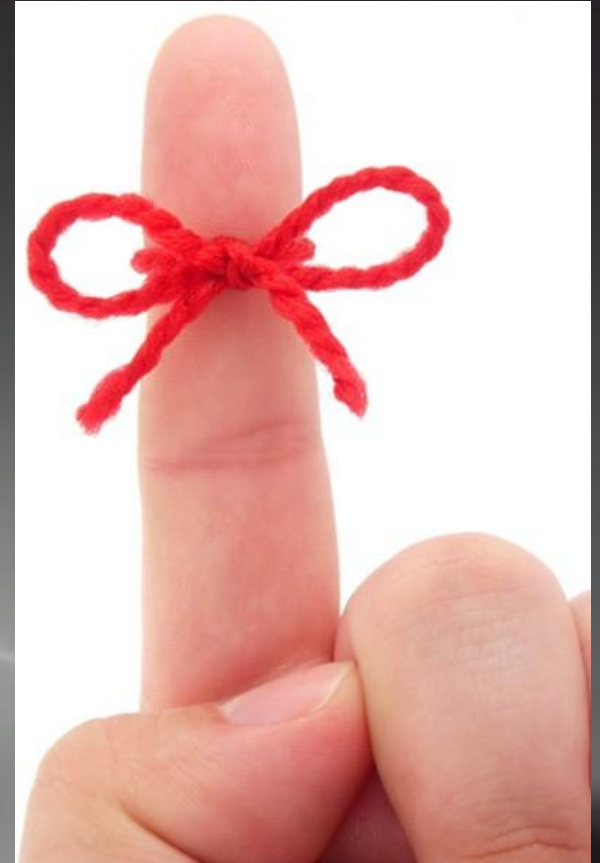
Robert Bogue

Rob.Bogue@ThorProjects.com

<http://www.thorprojects.com/blog>

Activities

- Simple
 - Not a container for other activities
 - Generally does something
- Complex
 - Container for other activities



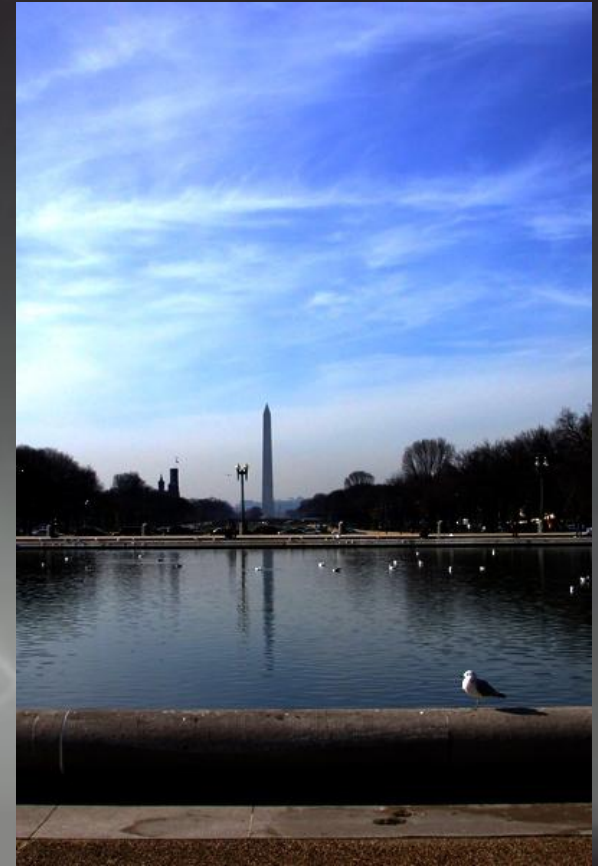
Dependency Properties

- A WF concept that allows properties to be “sparse”
- Big hash table/lookup to improve space
- Used to link the properties of one activity to another



Activities and Actions

- Activities are the components of a WF workflow.
- Actions are a sentence representation of workflows activities that SharePoint Designer uses.



Custom SPD Actions

- Create a workflow activity in VS and:
 - Create an .Actions File
 - Update the web.config to add an authorized type
- Develop a Sandbox Workflow Action



SharePoint Designer and Exceptions

- Workflow Supports
 - Fault Handlers (think catch {})
 - Interactive Debugging
- SharePoint Designer doesn't
 - Output Exception as a variable rather rethrowing
 - Check Exception Output



A dramatic, dark sky with heavy, dark clouds. Several bright, jagged lightning bolts are visible, striking across the frame. The overall tone is moody and intense, with the lightning providing the primary light source against the dark background.

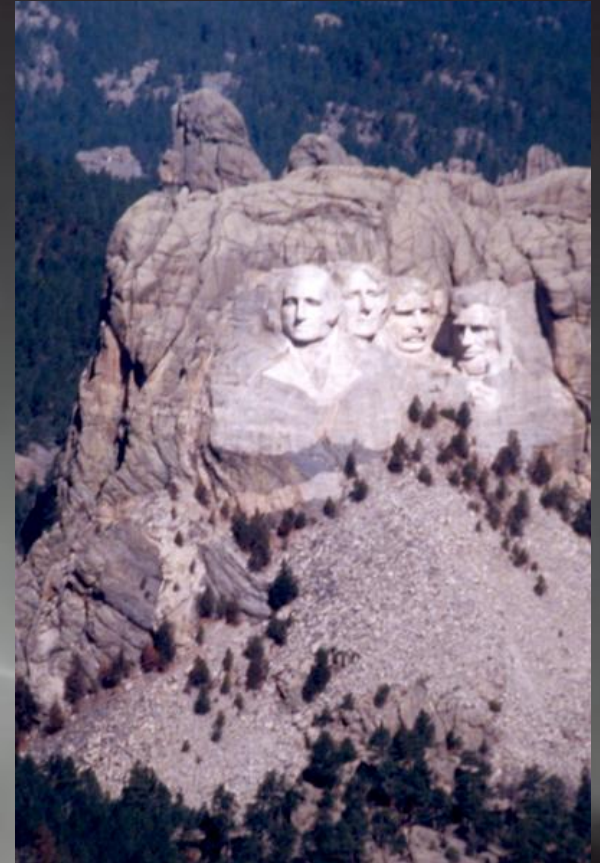
DEMO: SANDBOXED WORKFLOW ACTION

A dramatic, dark sky with a bright, jagged lightning bolt striking across the frame. The lightning bolt is a brilliant white-yellow, branching out as it descends. The sky is a deep, dark grey, with some lighter, wispy clouds visible in the lower right. The overall mood is intense and powerful.

DEMO: WORKFLOW ACTIVITY

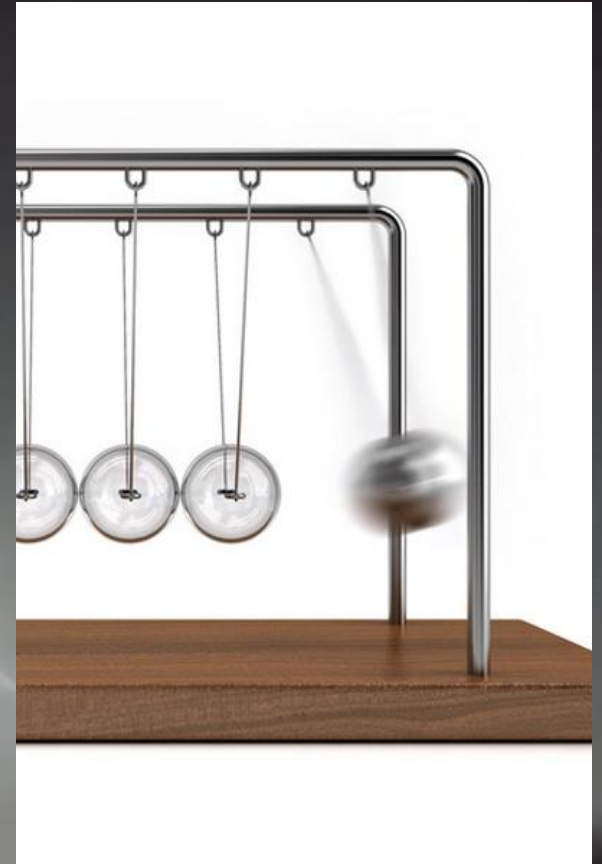
SharePoint Workflow Execution

- Declarative
 - SharePoint Designer
 - All activities used must be declared as safe as AuthorizedTypes in web.config
 - While and Replicator are not authorized
 - Runs as the user context
- Code Based
 - Must run full trust
 - Runs the system context



Revising SharePoint Designer Workflows

- Previous versions are renamed (with the time of the next version)
- The previous version is set for no new instances
- New versions are set to allow (new instances)



Thank You

- Questions?
- What's next
 - Developing Workflows with Visual Studio 2010

Developing Workflows with Visual Studio 2010

Robert Bogue

Rob.Bogue@ThorProjects.com

<http://www.thorprojects.com/blog>

Importing SPD workflows into VS

- Importing as a workflow converts it to a mostly functional code based workflow
 - A very large number of activities are generated – to the point of making this nearly unusable.
- Importing as a WSP package leaves the Workflow as a declarative
 - but the designer doesn't work.



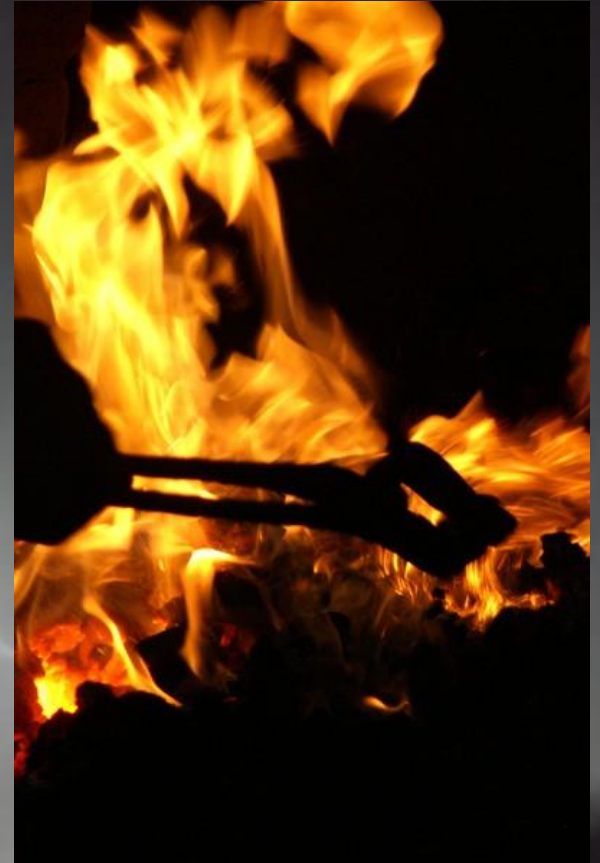
Correlation Tokens

- Unique Identifier
- How WF determines where to send events
- Have a container
 - Normally the workflow
 - Should be inside loop or repeater if in one of those composite activities is a parent



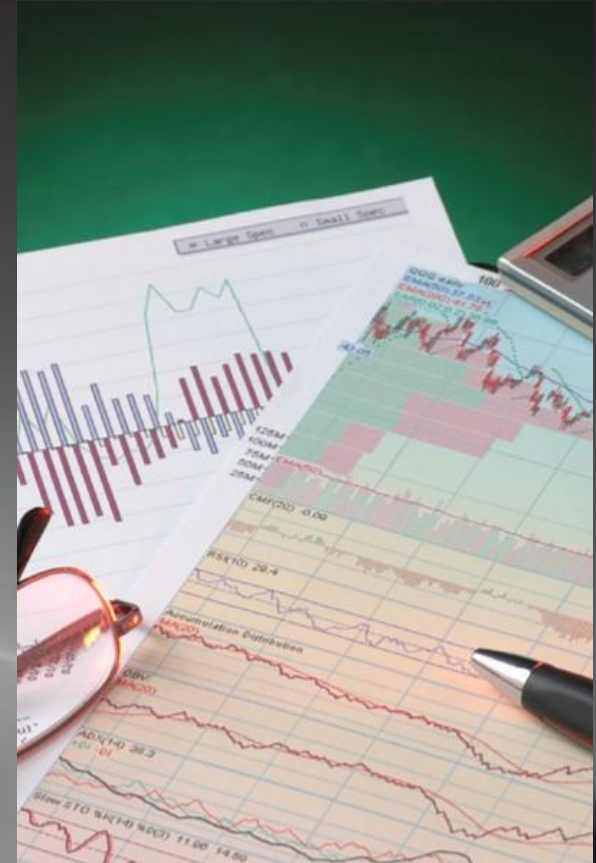
Modification Form

- Can be used to modify a running workflow
- Practically never used, custom edit forms for tasks are more popular



Status Form

- The form displayed when the user looks at the status of your workflow
- Rarely changed but powerful for complex workflows



Application Pages

- Visual Studio Template available
- No visual designer – but automatic wire up of the class and .ASPX



Design vs. Run Time

- Loops are copies
- Use caution when directly referencing the activity -- cast the sender parameter



Fault Handlers

- Fault Handlers – Catch {} blocks
- Set at an activity level
- Set a global fault handler to handle all exceptions



History List

- Hidden (but accessible) list
- Fields
 - HistoryDescription – Limited to 255 characters
 - OtherData – Unlimited Additional Storage





DEMO: VISUAL STUDIO WORKFLOW

Thank You

- Questions?
- Resources
 - My Blog: <http://www.thorprojects.com/blog>
 - David Mann <http://www.mannsoftware.com>
 - SPD blog
<http://blogs.msdn.com/b/sharepointdesigner/>