

Building Business Solutions: InfoPath, Visio & Workflows

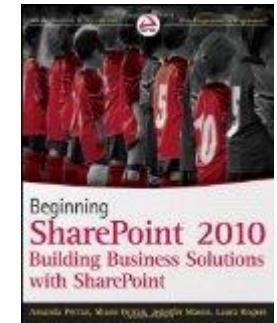




About me...



@jennifermason



www.jenniferannmason.com

RACKSPACE® HOSTING | WWW.RACKSPACE.COM



Let's Keep in Touch!

Email jennifer.mason@rackspace.com

Twitter [@jennifermason](https://twitter.com/jennifermason)

Blog <http://JenniferAnnMason.com>

My Job Description

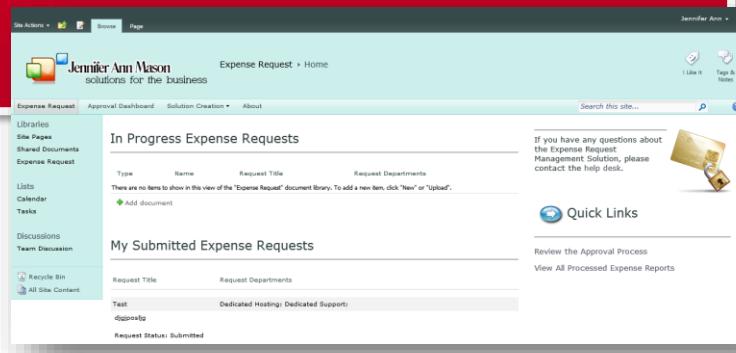
- I work with users at Rackspace to answer the question.....

"Wouldn't it be great if we could do {enter thing here}, yeah it would be great! Can you please go do {enter thing here}"



In Today's Session:

- How do we define a business solution?
 - Something that can be used to address a specific, measurable business requirement
 - Our Solution is No Code (no syntax or semi-colons)
 - Techniques covered today apply to multiple solutions!



The screenshot shows a SharePoint site for 'Jennifer Ann Mason solutions for the business'. The 'Expense Request' page is displayed. On the left, a navigation bar includes 'Expense Request' (which is highlighted in red), 'Approval Dashboard', 'Solution Creation', and 'About'. Below the navigation are links for 'Libraries', 'Lists', 'Discussions', and 'Recycle Bin'. The main content area has two sections: 'In Progress Expense Requests' and 'My Submitted Expense Requests'. The 'In Progress Expense Requests' section shows a table with columns for 'Type', 'Name', 'Request Title', and 'Request Departments'. It includes a note: 'There are no items to show in the view of the "Expense Request" document library. To add a new item, click "New" or "Upload".' The 'My Submitted Expense Requests' section shows a table with columns for 'Request Title', 'Request Departments', 'Text', and 'Request Status'. It includes a note: 'Request Status: Submitted'. To the right of the main content, there is a 'Quick Links' section with links to 'Review the Approval Process' and 'View All Processed Expense Reports'. A sidebar on the right contains a note: 'If you have any questions about the Expense Request Management Solution, please contact the help desk.' and an image of a gold credit card.

Our Total Solution: Part 1

Part 1: The Form

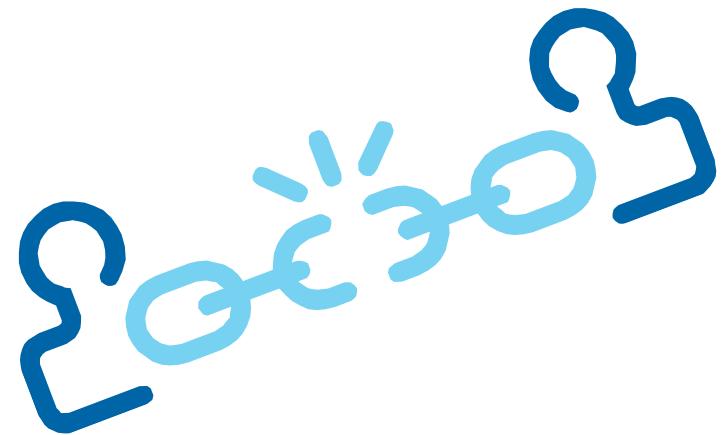
Goals!

- Understand the Problem
- Create a Plan
- Build the Form

Part 3: Automation

Our Problem

- Users need to a way to easily request to spend department funds.
- Managers need a way to see all requests and approve based on overall department needs.



Current Solution

- Users email their managers for approval.
- Managers approve expenses without comparing with the larger context. This has caused some division among departments.





Our Final Solution

Site Actions Browse Page Jennifer Ann

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Expense Request Home

Expense Request Approval Dashboard Solution Creation About Search this site...

In Progress Expense Requests

Type	Name	Request Title	Request Departments
	28T18_36_27	Test Two	Dedicated Hosting;
<p> Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna. Nunc viverra imperdiet enim.</p>			
<p>Request Status: In Progress</p>			
<p>Expense Total: \$6,200.00</p>			
<p> Add document</p>			

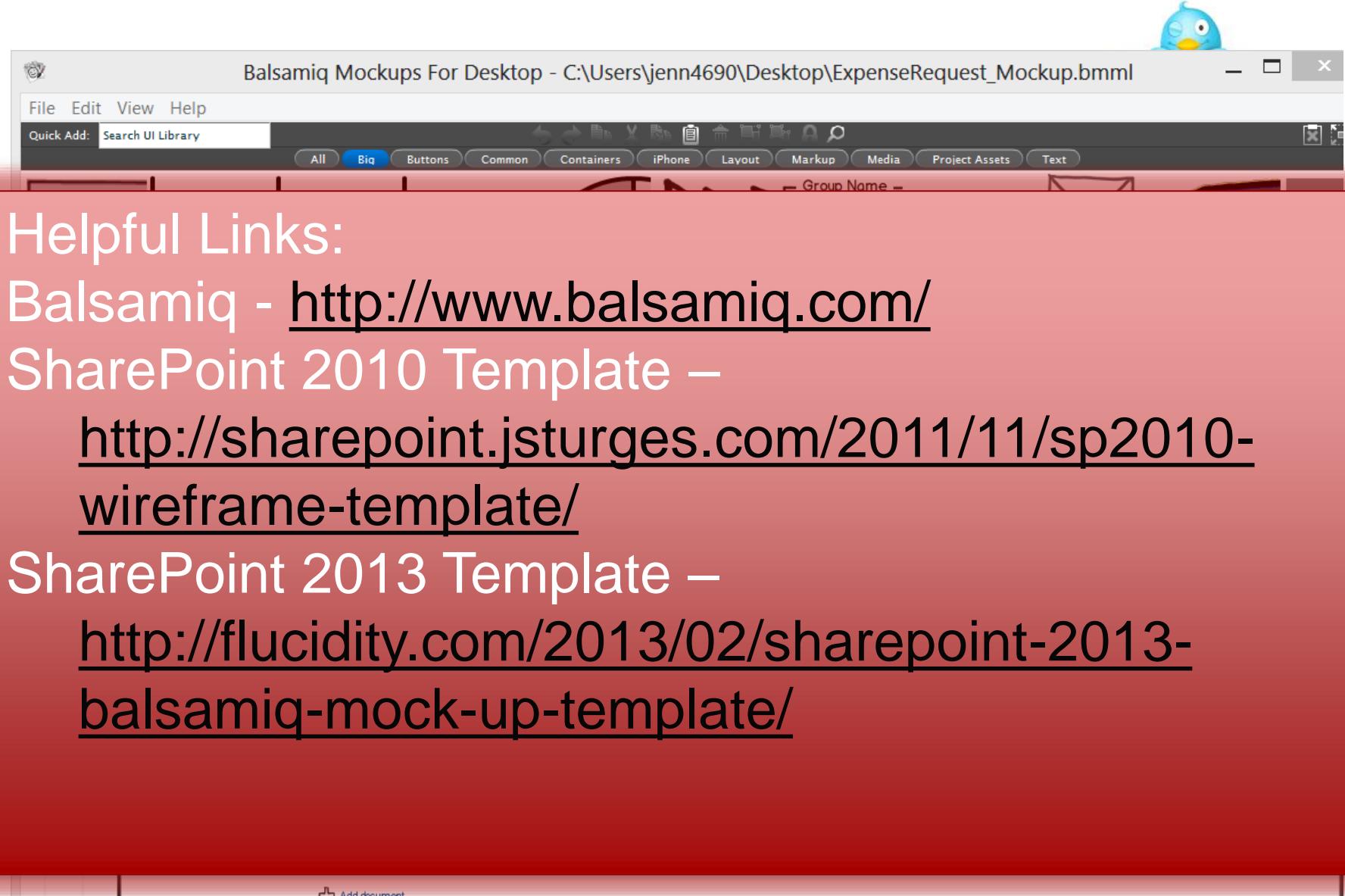
If you have any questions about the Expense Request Management Solution, please contact the help desk.

Quick Links

[Review the Approval Process](#)
[View All Processed Expense Reports](#)

My Submitted Expense Requests

Request Title	Request Departments
Test	Dedicated Hosting; Dedicated Support; Marketing



Helpful Links:

Balsamiq - <http://www.balsamiq.com/>

SharePoint 2010 Template –

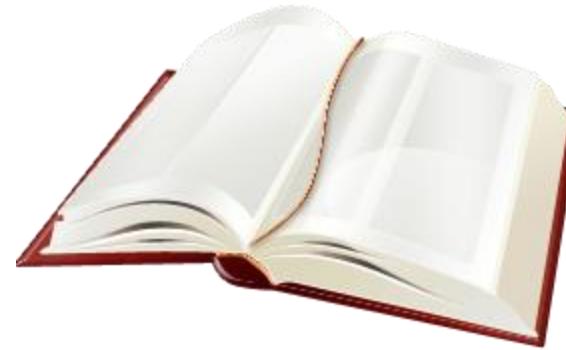
<http://sharepoint.jsturges.com/2011/11/sp2010-wireframe-template/>

SharePoint 2013 Template –

<http://flucidity.com/2013/02/sharepoint-2013-balsamiq-mock-up-template/>

Building the Form

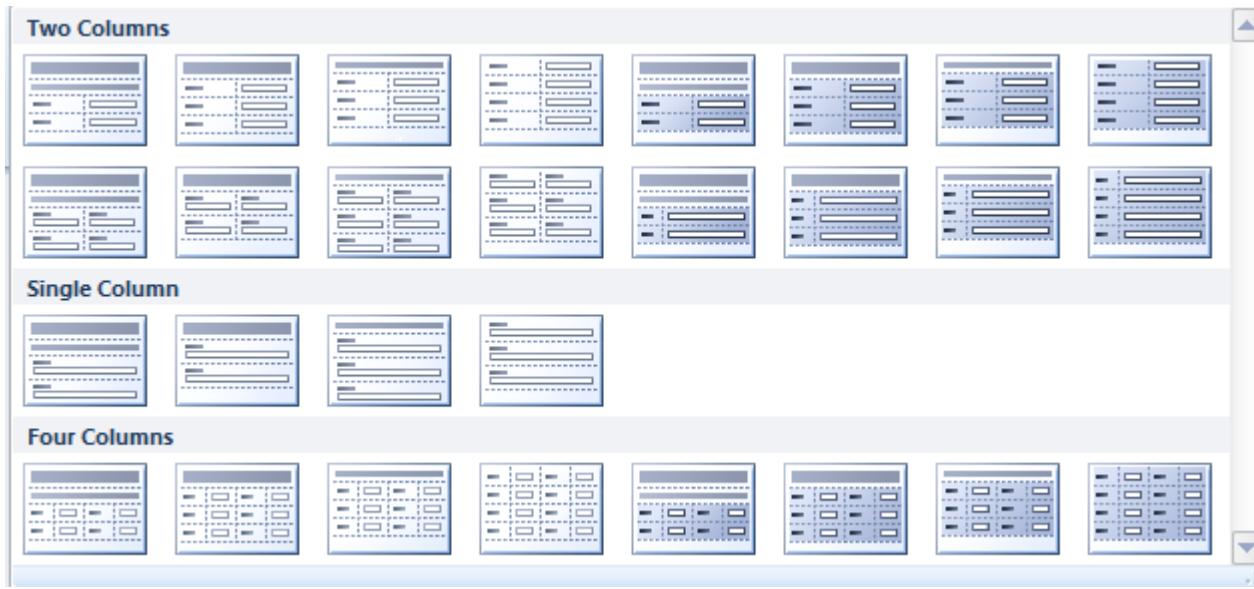
- Fundamentals
 - Form Layout
 - Form Controls
 - Data Sources
 - Form Publishing



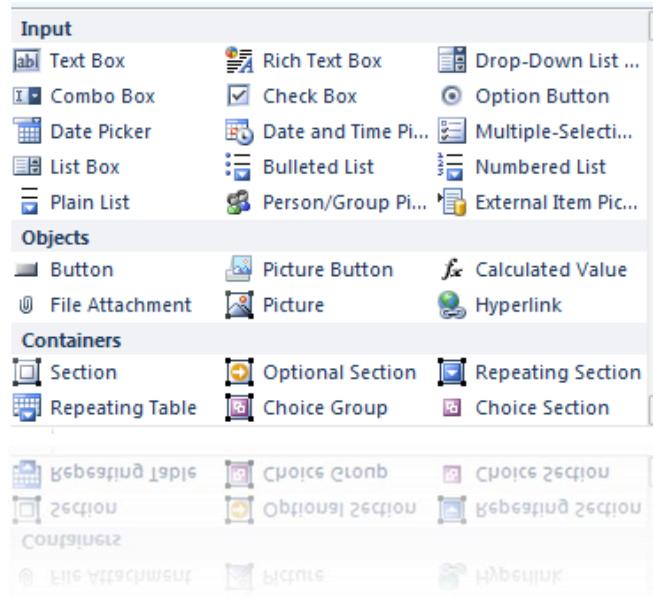


Form Layout

- On the Page Design tab, pick a page template layout first
- On the Insert tab, insert needed sub-tables
- Pick a color scheme to use



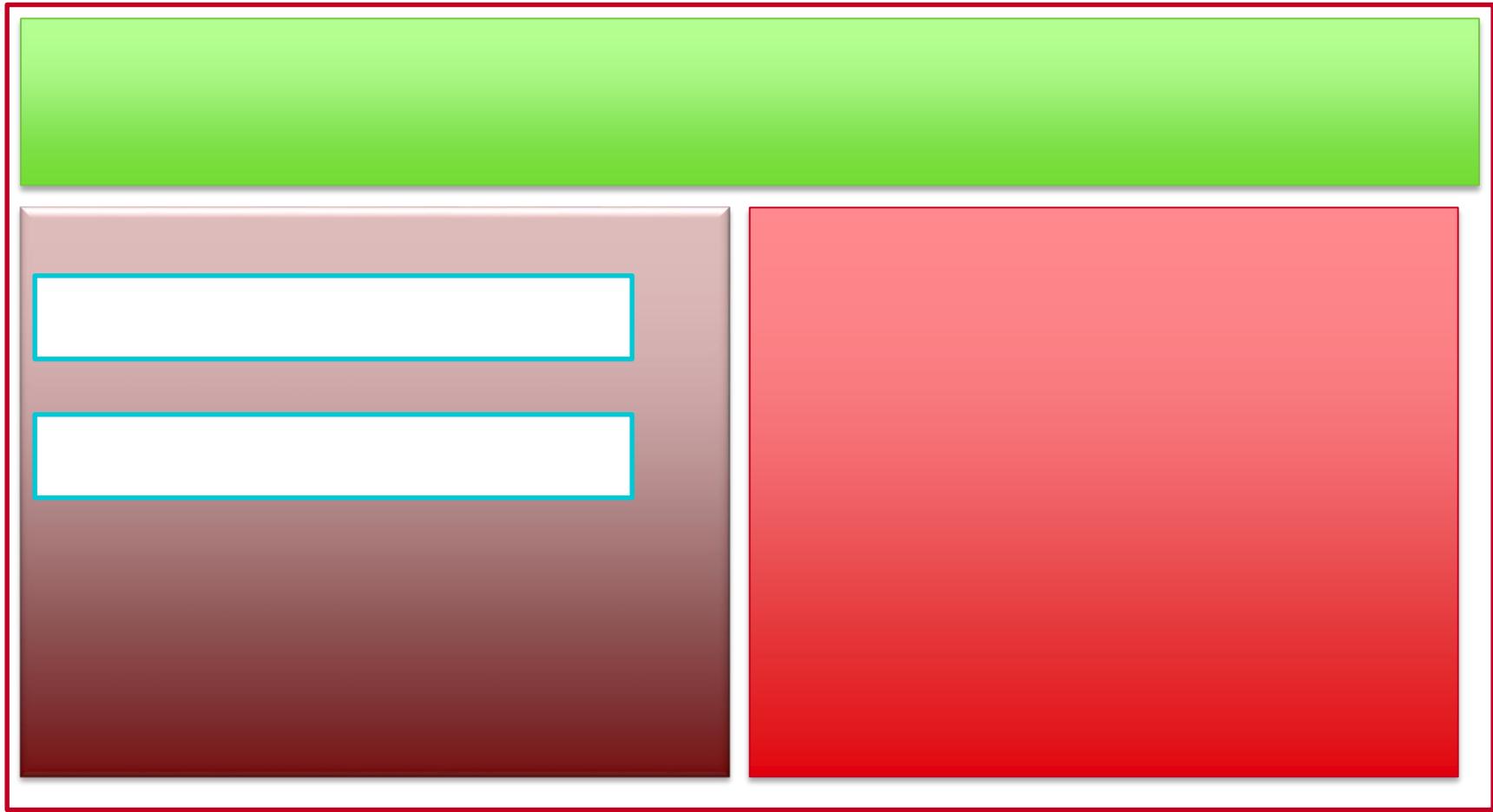
Form Controls



- Input
 - Fields (text, date / time, choice)
- Objects
 - Buttons, Attachments, Calculated Values
- Containers
 - Repeating Tables
 - Sections



Putting it Together



Publishing the Form

Design the
Form in
InfoPath

Associate
the Form
with a Library
in a Site

Using the Form



User Creates
New Item in
Library (An
Instance of the
Form)

User Manually
Does
“Something”
with Form Once
Complete

Adding Rules

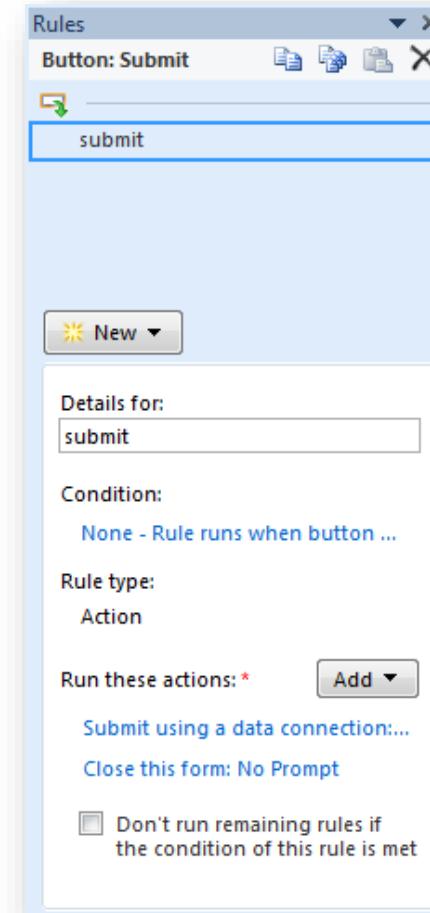


User Creates
New Item in
Library (An
Instance of the
Form)

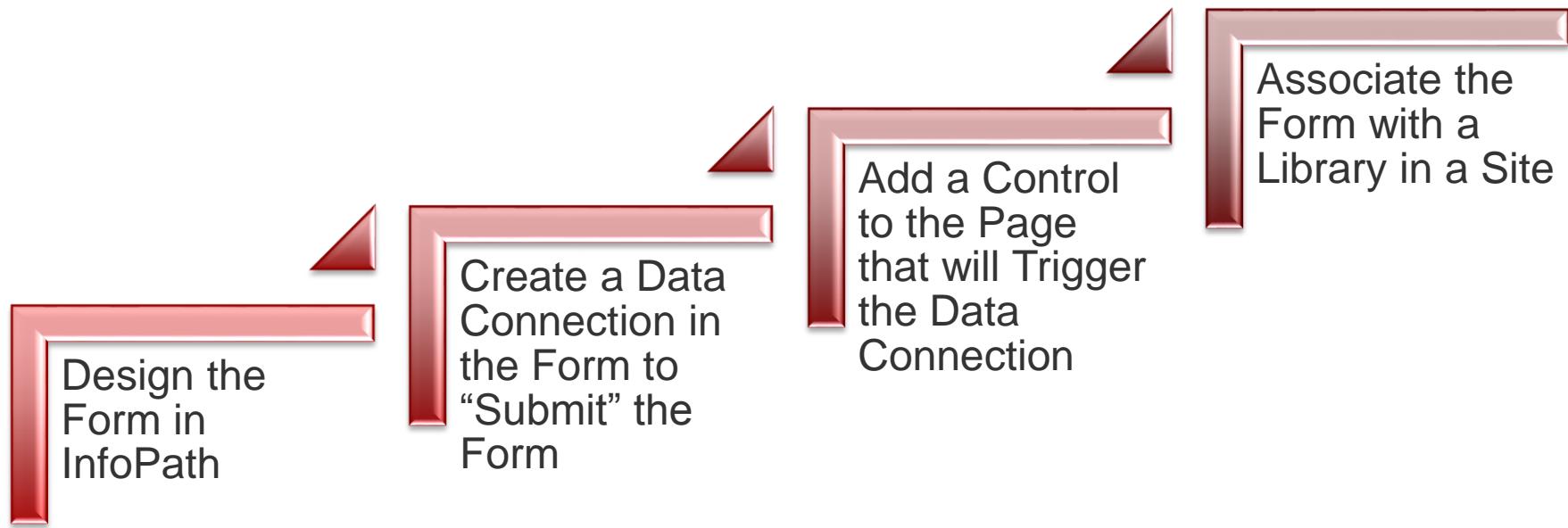
Form
“Completes”
Based on Form
Logic &
Associated
Rules

InfoPath Rules

- Types of rules:
 - Validation
 - Formatting
 - Action
- Different Rules Based on Control Type
- Create multiple rules on any one control
- Common Rules:
 - Receive / Submit Data
 - Hide / Show Sections
 - Validate Data Entry



Add Publishing “Rules”



Putting it Together



Our Total Solution: Part 2

Part 1: The Form

Part 2: Visio Services

Goals!

- Utilize existing Office Tools
- Create a Rich, Interactive Solution
- Provide Visual Aids



Design



Our Final Solution

Site Actions Browse Page Jennifer Ann

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Expense Request Home

Expense Request Approval Dashboard Solution Creation About Search this site...

In Progress Expense Requests

Type	Name	Request Title	Request Departments
	28T18_36_27	Test Two	Dedicated Hosting;
<p> Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna. Nunc viverra imperdiet enim.</p>			
<p>Request Status: In Progress</p>			
<p>Expense Total: \$6,200.00</p>			
<p> Add document</p>			

If you have any questions about the Expense Request Management Solution, please contact the help desk.

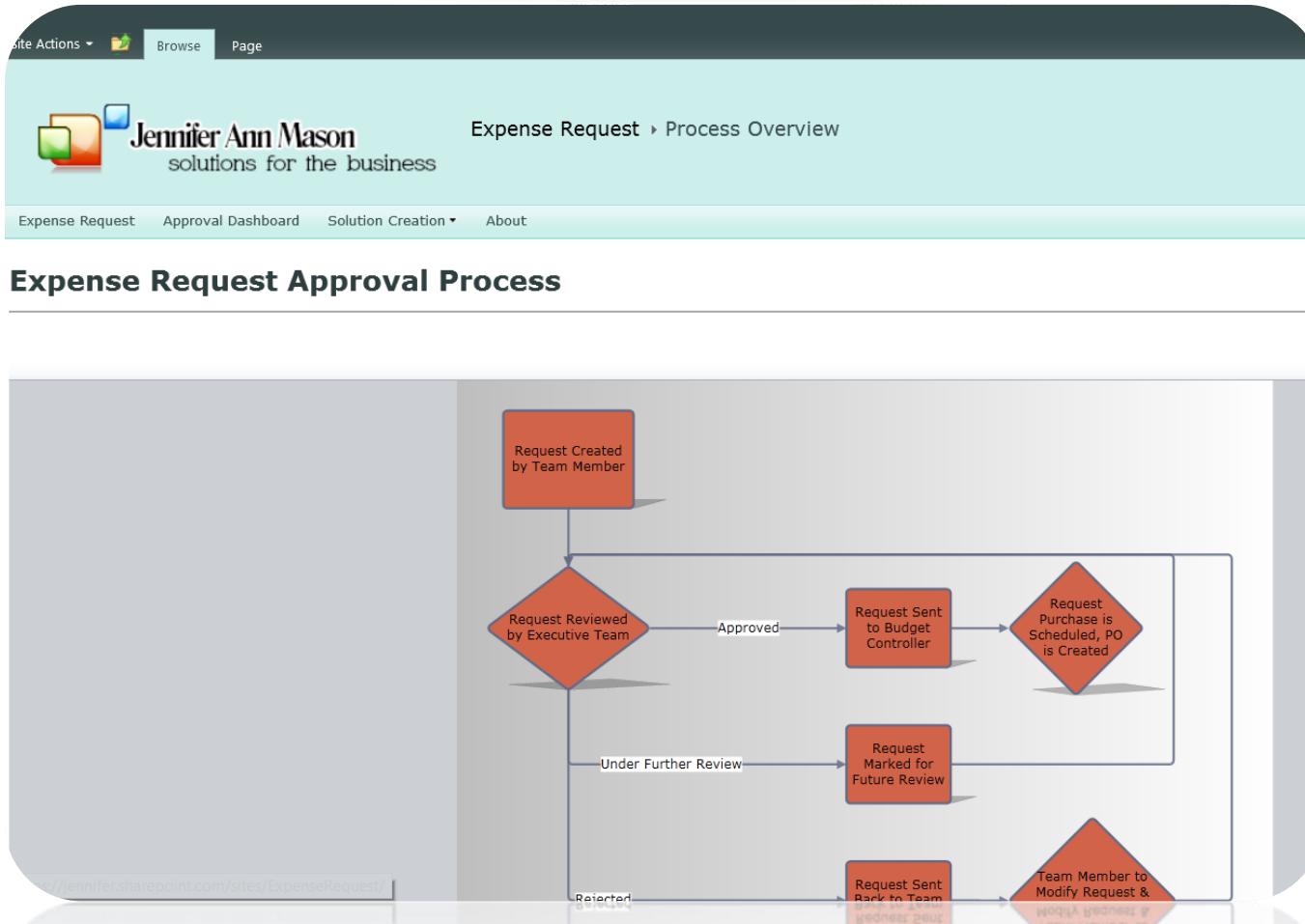
Quick Links

[Review the Approval Process](#)
[View All Processed Expense Reports](#)

My Submitted Expense Requests

Request Title	Request Departments
Test	Dedicated Hosting; Dedicated Support; Marketing

Describing Process



Driving Process

Expense Request > Executive Committee Meeting

Executive Expense Review Process

```

graph TD
    AE[Actual Expenses] --> NR[New Requests]
    NR --> PAR[Previously Accepted Requests]
    PAR --> NAR[New Approved Requests]
    NAR --> AE2[Authorize Expenses]
    NAR --> IR[In-Progress Requests]
    NAR --> RR[Rejected Requests]
  
```

Expense Requests

Name	Request Title	Request Departments
27T14_02_39	Test	Dedicated Hosting; Dedicated Support; Marketing;
<p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna. Nunc viverra imperdiet enim. Fusce est. Vivamus a tellus.</p> <p>Request Status: Submitted</p>		

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Goals

- Use the tools that are common and familiar to enhance our existing solution



- Examples:

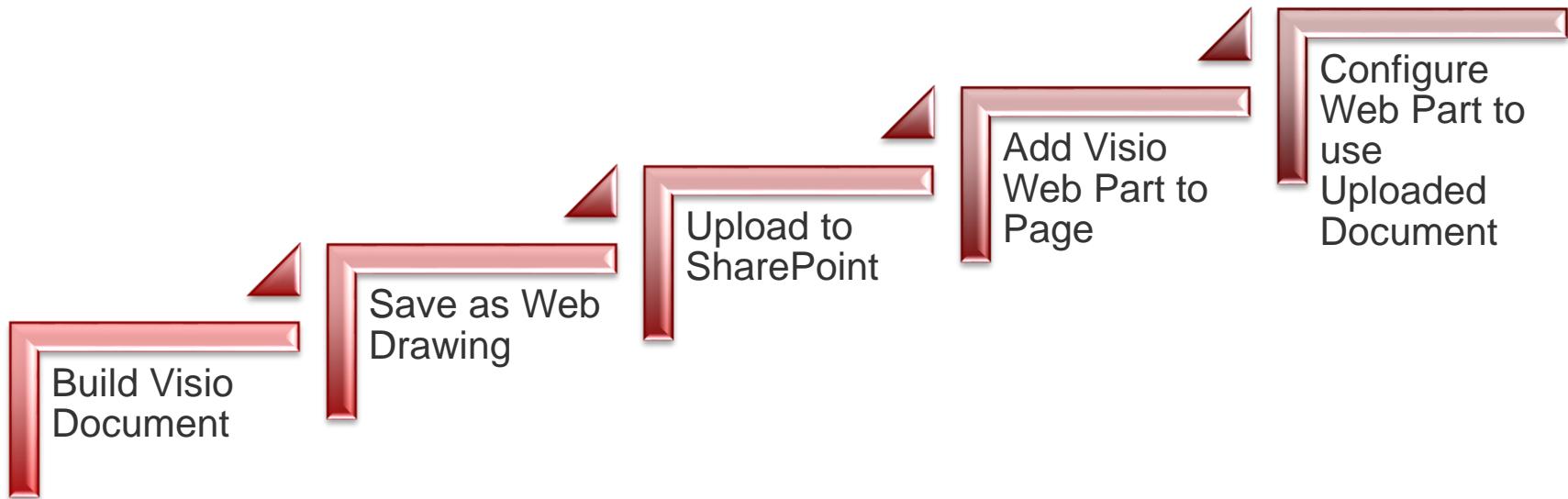
- Display our Process
- Provide Interactive Experience for Decision Makers

The Tools

- Visio
 - Premium vs. Professional
 - <http://office.microsoft.com/en-us/visio/visio-edition-comparison-FX101838162.aspx>
- Visio Services Web Part
- Any SharePoint Page

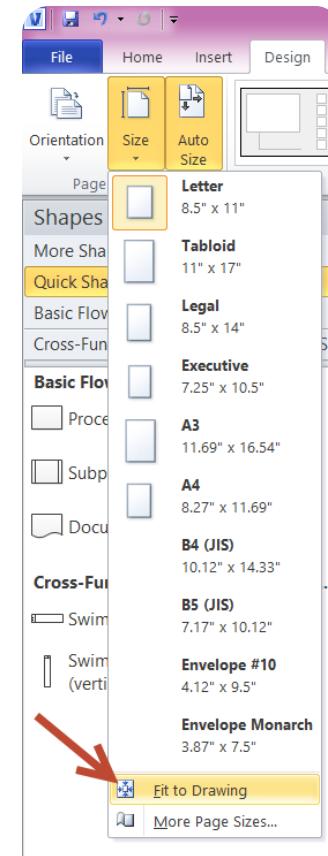


The Process



Helpful Hints!

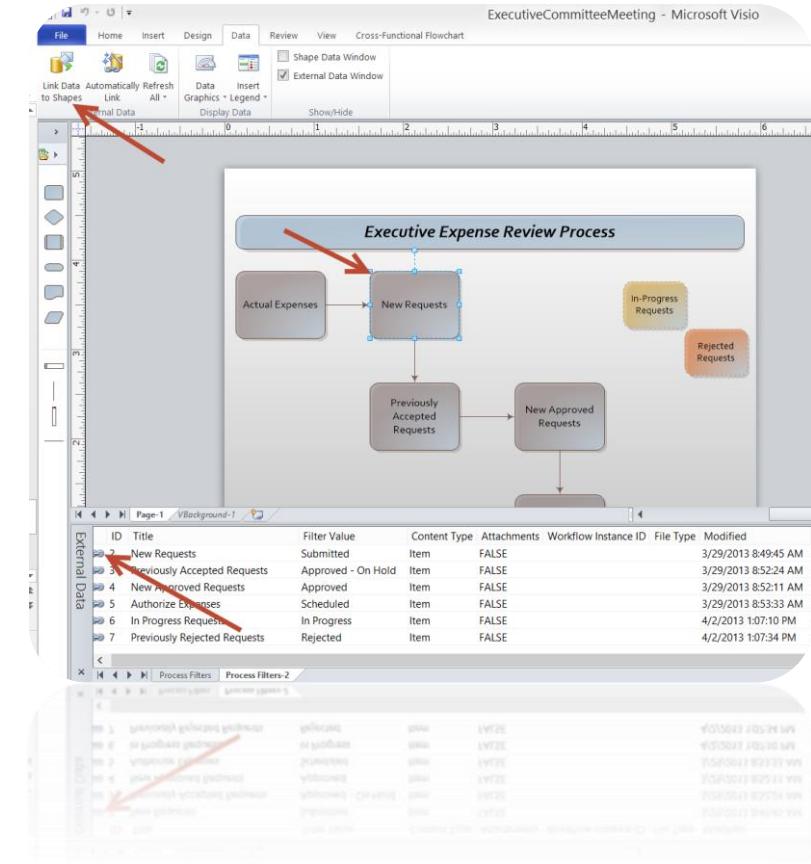
- Fit to Drawing
 - Size the drawing based on the contents, provides the best viewing experience



Visio Web parts

Advanced Options

- Data Connections
 - Connects shapes to data sources, such as SharePoint lists or SQL Databases
 - *Don't forget: Kerberos required for “double hops”*



Data Connection Example



Data Connection Example

Site Actions  Browse Page

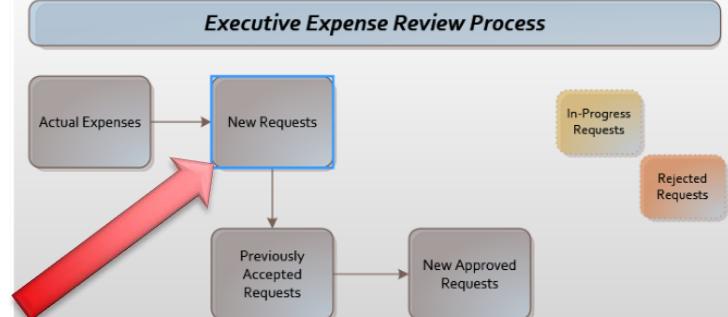
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Expense Request > Executive Committee Meeting

Expense Request Approval Dashboard Solution Creation About

100% 

Executive Expense Review Process



```

graph TD
    AE[Actual Expenses] --> NR[New Requests]
    NR --> PAR[Previously Accepted Requests]
    PAR --> NAR[New Approved Requests]
    subgraph Requests [Expense Requests]
        direction LR
        IR[In-Progress Requests] --- RR[Rejected Requests]
    end
  
```

• Create a New Expense Request

Expense Requests

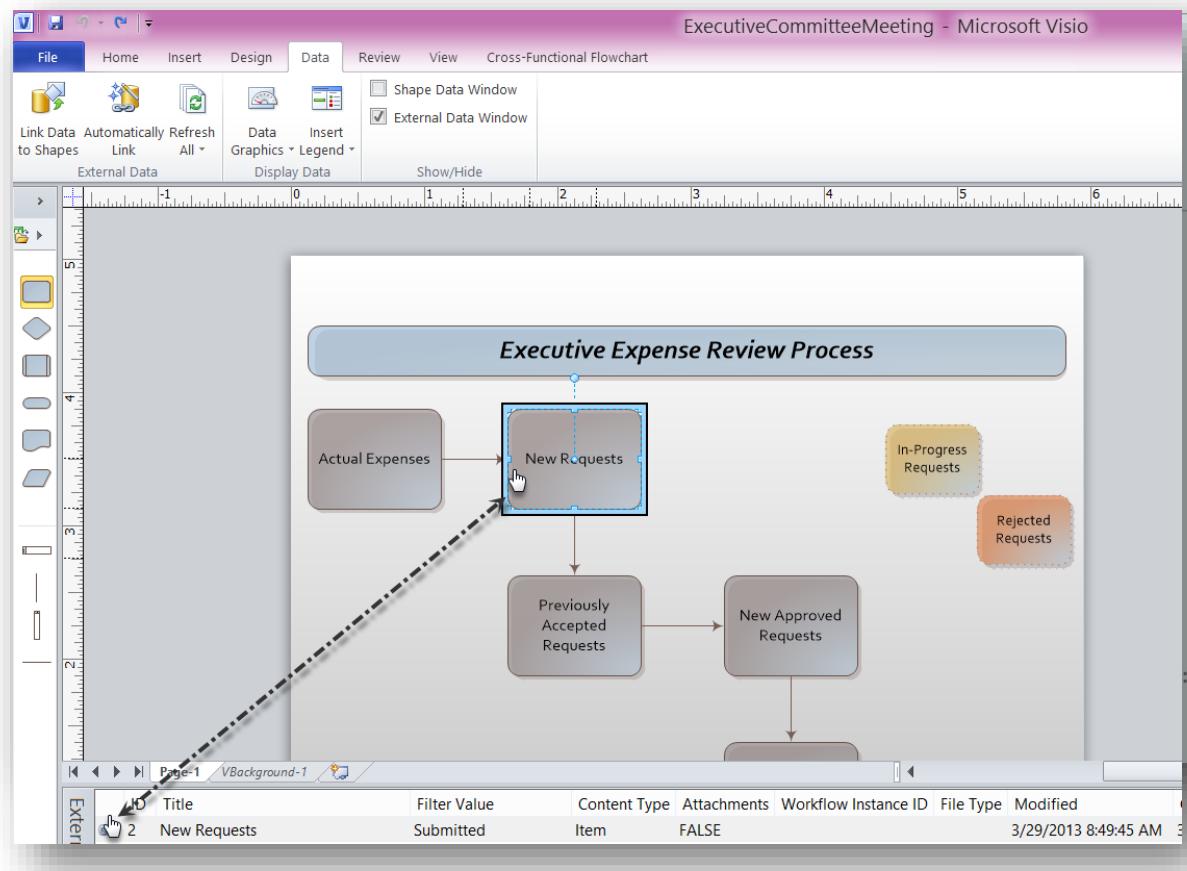
Name	Request Title	Request Departments
27T14_02_39	Test	Dedicated Hosting; Dedicated Support; Marketing;
Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna. Nunc viverra imperdiet enim. Fusce est. Vivamus a tellus.		
Request Status: Submitted		

Click on a shape within the Visio Diagram

Other web parts on the page will show a filtered view of the lists, just returning the items that are associated with the selected shape.

Making it Work

- Create a Custom List for Process Phases
- Add a Lookup Column to Each Associated List or Library
- Connect Process Phases List with Visio Diagram

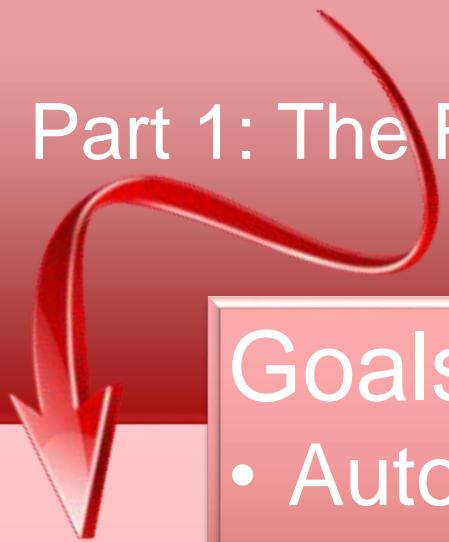


Data connections

Our Total Solution: Part 3

Part 1: The Form

Part 2: Visio Services



Goals!

- Automate Manual Process
- Provide Easy Access

Part 3



Our Final Solution

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Expense Request Home

Expense Request Approval Dashboard Solution Creation About Search this site...

In Progress Expense Requests

Type	Name	Request Title	Request Departments
	28T18_36_27	Test Two	Dedicated Hosting;
<p> Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna. Nunc viverra imperdiet enim.</p>			
<p>Request Status: In Progress</p>			
<p>Expense Total: \$6,200.00</p>			
<p> Add document</p>			

If you have any questions about the Expense Request Management Solution, please contact the help desk.

Quick Links

[Review the Approval Process](#)
[View All Processed Expense Reports](#)

My Submitted Expense Requests

Request Title	Request Departments
Test	Dedicated Hosting; Dedicated Support; Marketing

Single Management Location

Site Actions  Browse Page Jennifer Ann 

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Expense Request > Executive Committee Meeting

 I Like It  Tags & Notes

Expense Request Approval Dashboard Solution Creation About Search this site...  

Executive Expense Review Process



```

graph TD
    A[New Requests] --> B[Previously Accepted Requests]
    B --> C[New Approved Requests]
    C --> D[Authorized Expenses]
    C -.-> E[In-Progress Requests]
    C -.-> F[Rejected Requests]
  
```

• Create a New Expense Request

 **Expense Requests**

Name	Request Title	Request Departments
There are no items to show in this view of the "Expense Request" document library. To add a new item, click "New" or "Upload".		

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Automating Process



Process Expense Request

- Schedule Approved Payment
- View Properties
- Edit Properties
- Edit in Browser
- Edit in Microsoft InfoPath
- Check Out**
- Compliance Details
- Workflows
- Alert Me
- Send To
- Manage Permissions
- Delete

Request Title	Request Departments
Test	Dedicated Hosting; Dedicated

Introduction to Workflow



Triggers

- Manual, on Creation, on Change

Conditions

- If WHAT then do something

Actions

- This is the something that happens according to the condition

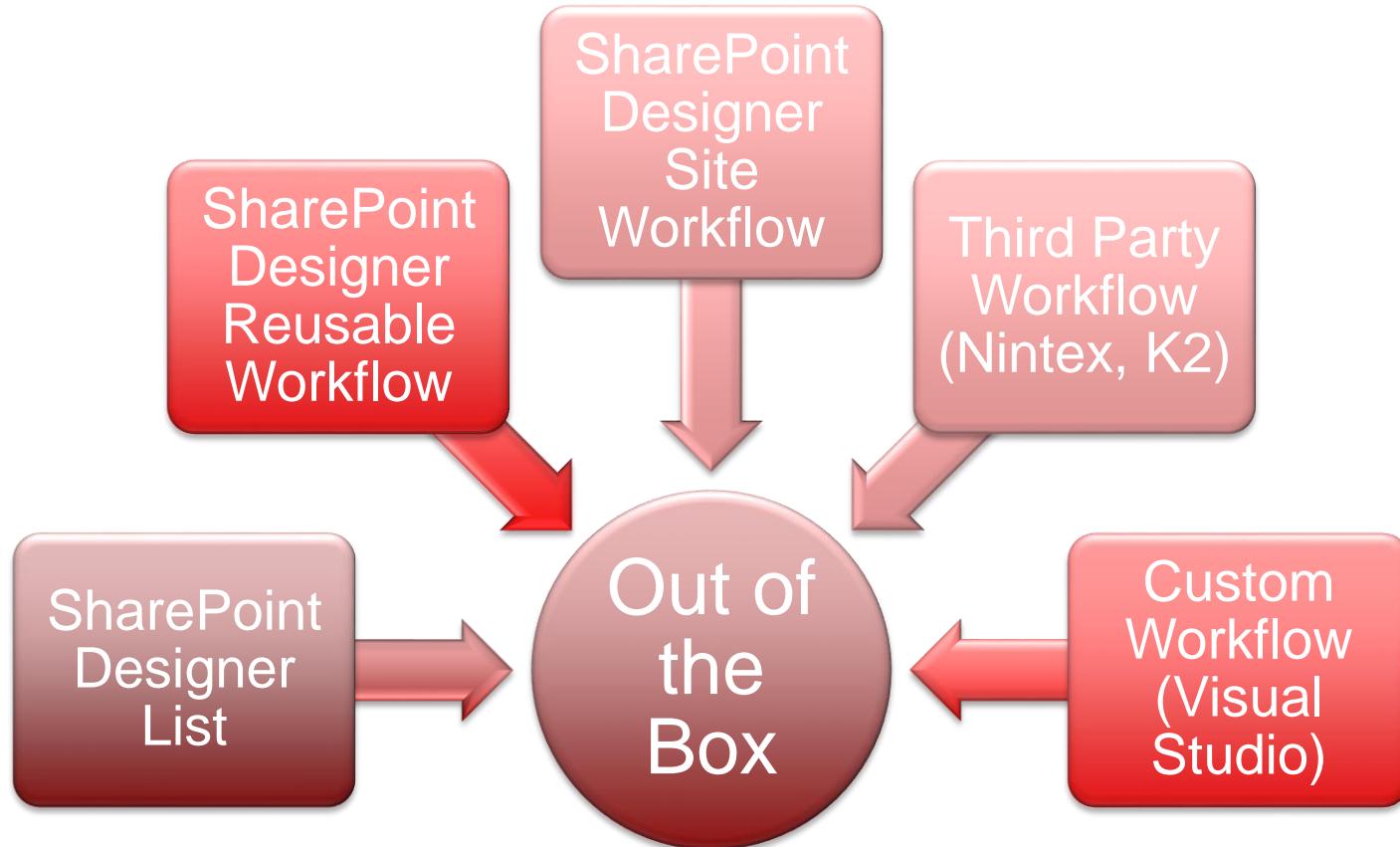
Steps

- The order of progression of the workflow

Impersonation

- Running workflows with elevated permissions

Workflow Options



Remember.....

- Just because you have a hammer, it doesn't make everything a nail!
- Workflow is a powerful feature set, but the best advice is to use it within its limitations.
- Go custom, when custom makes sense!



List Workflow



Our Examples

Expense Request Workflows

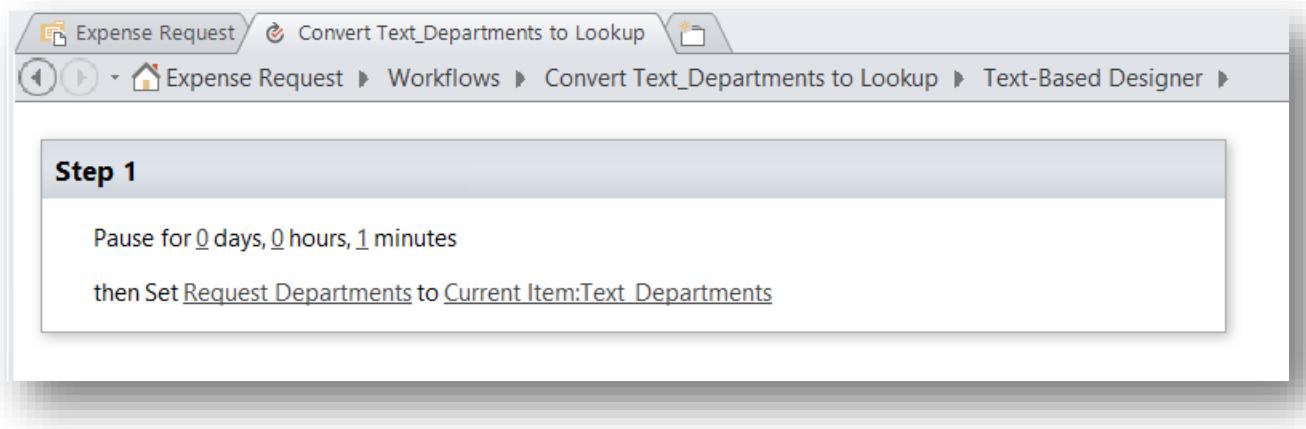
Expense Request > Workflows

Name	Type	Modified By
List Workflow	List Workflow	Jennifer Ann
Convert Text_Departments to Lookup	List Workflow	Jennifer Ann
Process Approved Request - Schedule Payment	List Workflow	Jennifer Ann
Review Expense Request	List Workflow	Jennifer Ann
Update Permissions	List Workflow	Jennifer Ann

Example 1

- Convert Text_Departments to Lookup

- InfoPath doesn't recognize lookups the same way as a SharePoint list. To work around this limitation, we have created a workflow that will convert what we publish from InfoPath to the lookup column in the list.



Pause

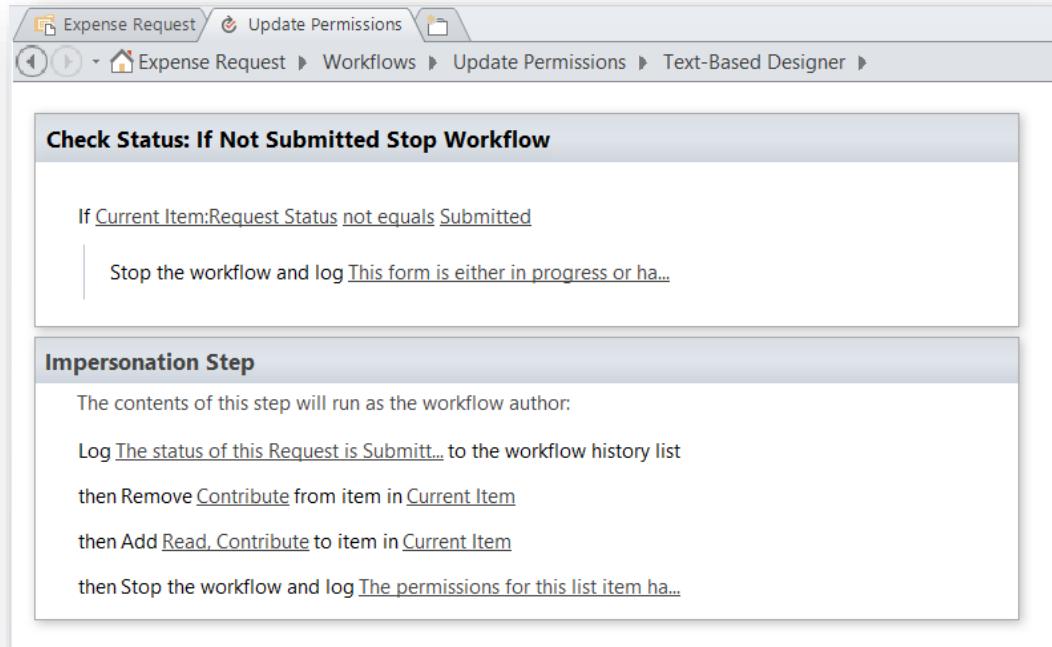
- Tool for troubleshooting workflow errors
- If you have multiple operations happening at once, a pause can help ensure the order of operations.
- Remember!
 - “SharePoint Minute” != “Minute”



Example 2

- Update Permissions

- Whenever an item is submitted, the permissions will be updated to ensure only those with the permissions to review have edit access.

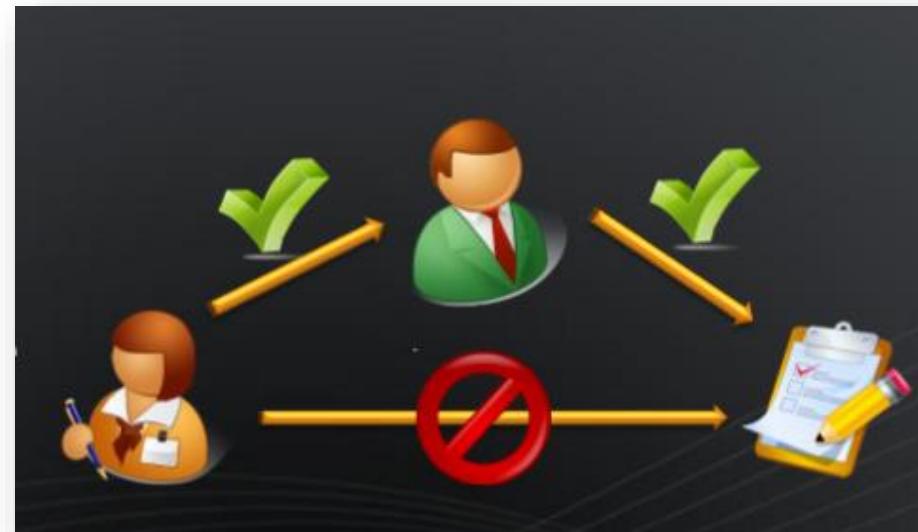


The screenshot shows a workflow editor interface with the following steps:

- Check Status: If Not Submitted Stop Workflow**
 - If Current Item:Request Status not equals Submitted
 - Stop the workflow and log This form is either in progress or ha...
- Impersonation Step**
 - The contents of this step will run as the workflow author:
 - Log The status of this Request is Submitt... to the workflow history list
 - then Remove Contribute from item in Current Item
 - then Add Read, Contribute to item in Current Item
 - then Stop the workflow and log The permissions for this list item ha...

Impersonation Steps

- By default, workflows run under the context of the current users. This means the workflow can only do things that the current user can do. If the current user can't write to a list, the workflow can't write to that list.
- Impersonation steps allow the workflow to run in the context of the person who published the workflow. This means if the publisher can write to the list, so can the workflow.



Example 3 & 4

- Custom Automation
 - Workflows that “do something” based on specific needs.

Schedule Payment

Set Content Type ID to Completed Expense Request
 then Set Request Status to Scheduled
 then Set Approved Amount to Parameter: Approved Amount
 then Set Payment Date to Parameter: Payment Date

Impersonation Step

The contents of this step will run as the workflow author:
 Replace Read of item in Current Item
 then Stop the workflow and log This expense has been approved for I%

If Rejected: Update Item Fields

If Parameter: Status equals Rejected
 Set Content Type ID to Rejected Expense Request
 then Set Request Status to Rejected
 then Set Review Comments to Parameter: Review Comments
 then Stop the workflow and log This item has been rejected.

Impersonation Step

The contents of this step will run as the workflow author:
 If Parameter: Status equals Rejected
 Replace Read, Full Control of item in Current Item
 then Stop the workflow and log This item has been rejected and has n...

If Approved: Update the Item Fields

If Parameter: Status equals Approved
 Set Request Status to Approved
 then Set Review Comments to Parameter: Review Comments
 then Stop the workflow and log That status of this item has been upd...

Initiation Parameters

- Initiation Form Parameters are collected from a user when the workflow starts. This is one way for you to collect data from users. Without entering this information, the workflow won't start.

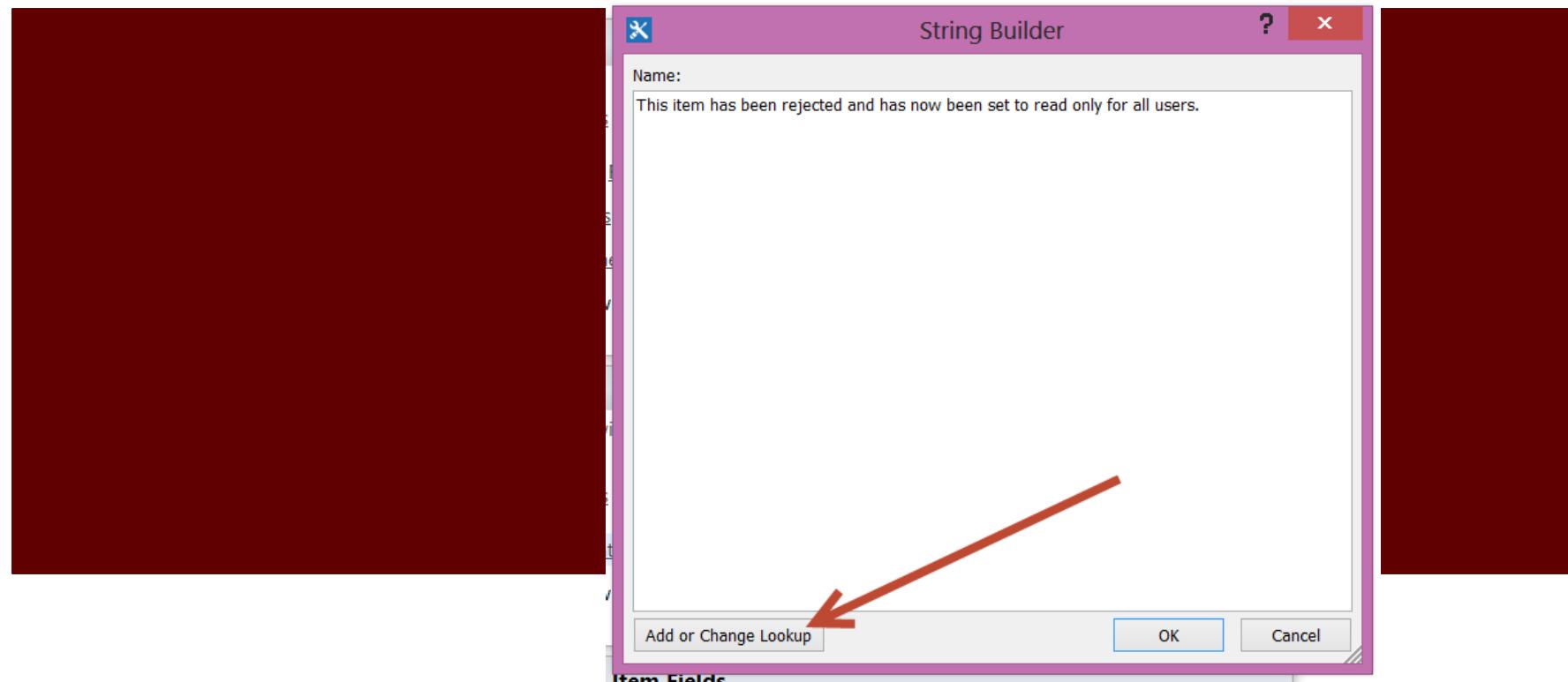
Approved Amount	0
Payment Date	4/8/2013 <input type="button" value="Calendar"/>
<input type="button" value="Start"/> <input type="button" value="Cancel"/>	

- This is just one option, you can also assign tasks within the workflow to collect data from users.
- Many options....pick the best for your solution!



Tips & Tricks: Log!

- By using the “Log to History” workflow action you can track items throughout the workflow process.



Customized Workflow Forms

Add Design & Format Elements

- Create a Rich User Experience by customizing the Workflow Forms

- Remember!



–Just because you can, doesn't mean you should.

Our Total Solution: Part 4

Part 1: The Form

Part 2: Visio Services

Goals!

- Build an Inviting User Interface with No Code!
- Do More with Less

Design



Our Final Solution

Site Actions Browse Page Jennifer Ann

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Expense Request Home

Expense Request Approval Dashboard Solution Creation About Search this site...

In Progress Expense Requests

Type	Name	Request Title	Request Departments
	28T18_36_27	Test Two	Dedicated Hosting;
<p> Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna. Nunc viverra imperdiet enim.</p>			
<p>Request Status: In Progress</p>			
<p>Expense Total: \$6,200.00</p>			
<p> Add document</p>			

If you have any questions about the Expense Request Management Solution, please contact the help desk.

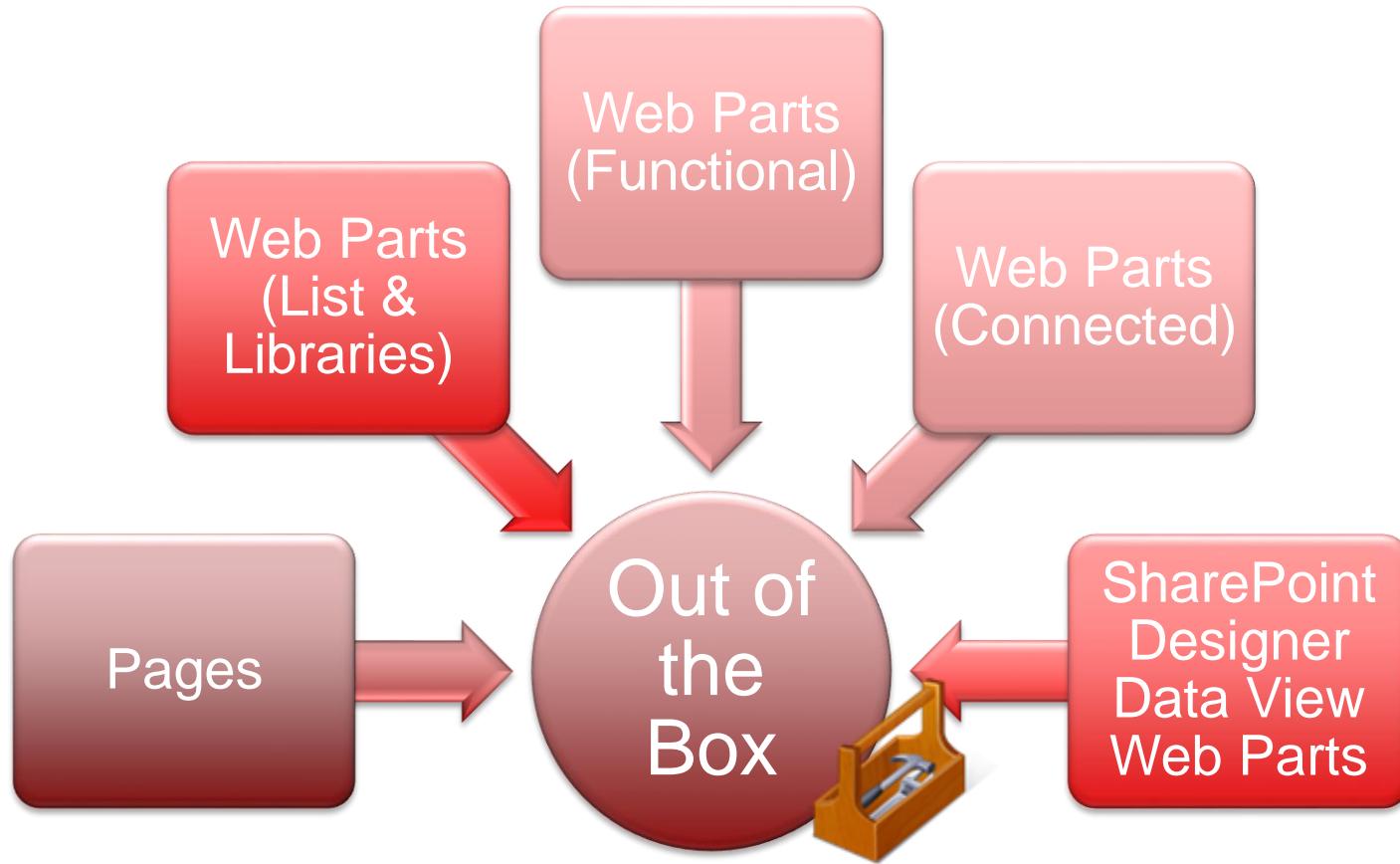
Quick Links

[Review the Approval Process](#)
[View All Processed Expense Reports](#)

My Submitted Expense Requests

Request Title	Request Departments
Test	Dedicated Hosting; Dedicated Support; Marketing

Available Tools



Remember.....

- Just because you have a hammer, it doesn't make everything a nail!
- DVWP can be powerful, but can also cause issues. Go custom, when custom makes sense!



Dashboards



Defining Dashboards



Complexity

- As easy as it can be, as complex as needed!
- The most important thing is to consider the user!
 - *What do they need?*
 - *What is the best tool to create what they need?*





Review Meeting Dashboard

Site Actions ▾ Browse Page Jennifer Ann ▾

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Expense Request ▶ Executive Committee Meeting

Expense Request Approval Dashboard Solution Creation ▾ About  

122%    

Executive Expense Review Process

```
graph TD; A[New Requests] --> B[Previously Accepted Requests]; B --> C[New Approved Requests]; C --> D[Authorized Expenses]; E[In-Progress Requests]; F[Rejected Requests];
```





Additional Information & Links

- Sample Link Goes Here



Expense Requests

Name	Request Title	Request Departments
08T07_55_24 	Test	Dedicated Hosting;

Initiation Form Parameters are collected from a user when the workflow starts. This is one way for you to collect data from users.



Historical Data Dashboard

Site Actions Browse Page Jennifer Ann

Jennifer Ann Mason solutions for the business Expense Request > Expense Data

Expense Request Approval Dashboard Solution Creation About Search this site...

Department Expenses

Department	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	%
Dedicated Hosting (28%)	24,000	26,000	27,000	25,000	28,000	29,000	30,000	31,000	32,000	33,000	34,000	35,000	360,000	28%
Sales (19%)	20,000	18,000	15,000	13,000	14,000	16,000	18,000	20,000	22,000	24,000	26,000	28,000	270,000	19%
Training (14%)	18,000	16,000	14,000	12,000	13,000	15,000	17,000	19,000	21,000	23,000	25,000	27,000	252,000	14%
Services (14%)	14,000	16,000	13,000	12,000	14,000	16,000	18,000	20,000	22,000	24,000	26,000	28,000	252,000	14%
Dedicated Support (13%)	12,000	14,000	11,000	10,000	12,000	14,000	16,000	18,000	20,000	22,000	24,000	26,000	240,000	13%
Marketing (12%)	10,000	12,000	9,000	8,000	10,000	12,000	14,000	16,000	18,000	20,000	22,000	24,000	228,000	12%

NOTES:
Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Maecenas porttitor congue massa.

Creating Pages

Web Parts

- *List Web Parts* display “something”
 - Every list or library you create will have an associated Web Part
 - You can add multiple versions of a list web part to a single page
- *Functional Web Parts* do “something”
 - Users interact with functional web parts to do various things:
 - Search Web Parts
 - InfoPath Form Web Parts
 - Excel Services Web Parts
 - Filter Web Parts
 - Available web parts depend on your licensing and active feature set



Building Dashboards

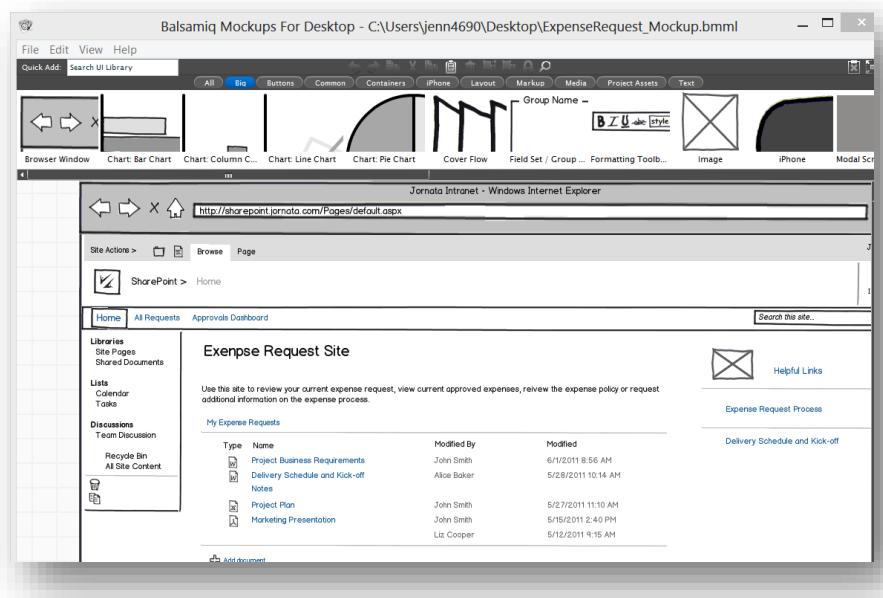
Building the Dashboard

1. Create Lists
2. Create List Associations (Lookup Columns)
3. Create Custom Views
4. Create Page
5. Add & Configure Web Parts on Page
6. Configure Web Part Connections



Remember.....

- Save time by creating mockups of potential site layout *before* spending any time building the solution



Connected Web Parts



Thanks for Coming!

- Don't Forget to Visit My Blog
 - <http://www.jenniferannmason.com>



- Sign Up for Office Hours at SPTechCon!
 - See me after the session for remaining available times!



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