

# Team Foundation Server in Software Development

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# Building projects

- **Small** projects
  - Easy to code



- **Large** projects
  - Many employees
  - How do we manage them?



# Large projects – Google (Android)

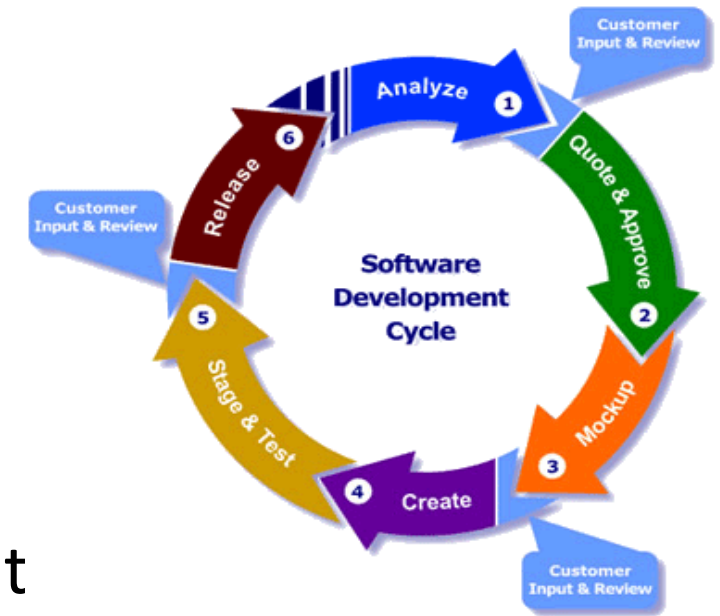
- **How many developers working on Android for Google?**
  - 100-170
- **How many employees at Google?**
  - Total Employees Worldwide: 31,000
- **How many Computer Programmers?**
  - About 2,000

# Large projects – Apple (IOS/Max OS)

- **How many employees at Apple?**
  - Total: 33,000
- **How many Computer Programmers?**
  - Claim to have 200,000 “developers”
  - Really about 1,500 developers

# Agile

- We are uncovering better ways of developing software by doing it and helping others do it.
- Through this work we have come value:
  - **Individuals and interactions** over processes and tools
  - **Working software** over comprehensive documentation
  - **Customer collaboration** over contract negotiation
  - **Responding to change** over following a plan
- That is, while there is value in the items on the right items on the left more



Kent Beck, Mike Beedle , Arie van Bennekum , Alistair Cockburn , Ward Cunningham , Martin Fowler , James Grenning , Jim Highsmith , Andrew Hunt , Ron Jeffries , Jon Kern , Brian Marick , Robert C. Martin , Steve Mellor , Ken Schwaber , Jeff Sutherland , Dave Thomas

# Agenda

- What is TFS
  - How do we use it
  - What does it offer
  - Advantages
  - Alternatives
- Conclusions

# What is TFS?

- Integrated platform for collaborating on software development projects
- **Visual Studio Team Foundation Server 2012 (TFS)** is the collaboration platform at the core of Microsoft's application lifecycle management solution. TFS automates the software delivery process and gives you the tools you need to effectively manage software development projects throughout the IT lifecycle.



# How do we use it?

- Overview of TFS Capabilities
  - Version Control (Branching and Merging)
  - Work Items
  - Project Management
  - Reporting

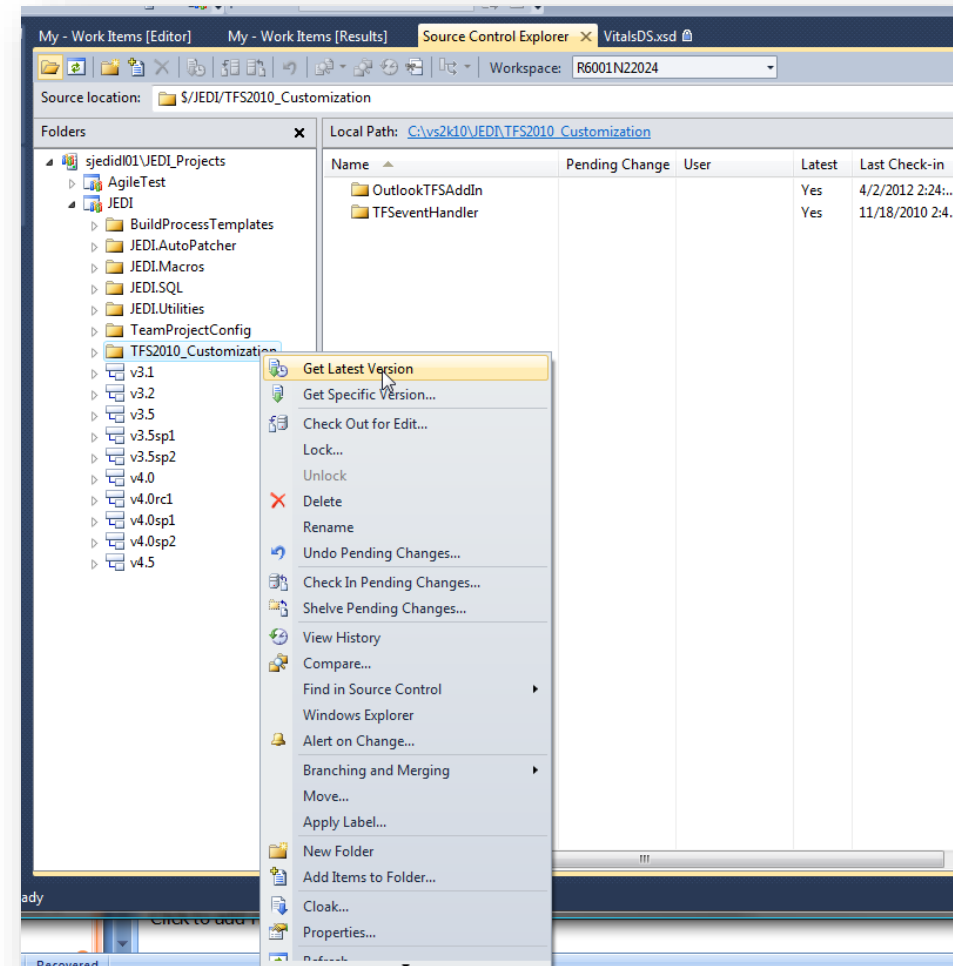


# Version Control

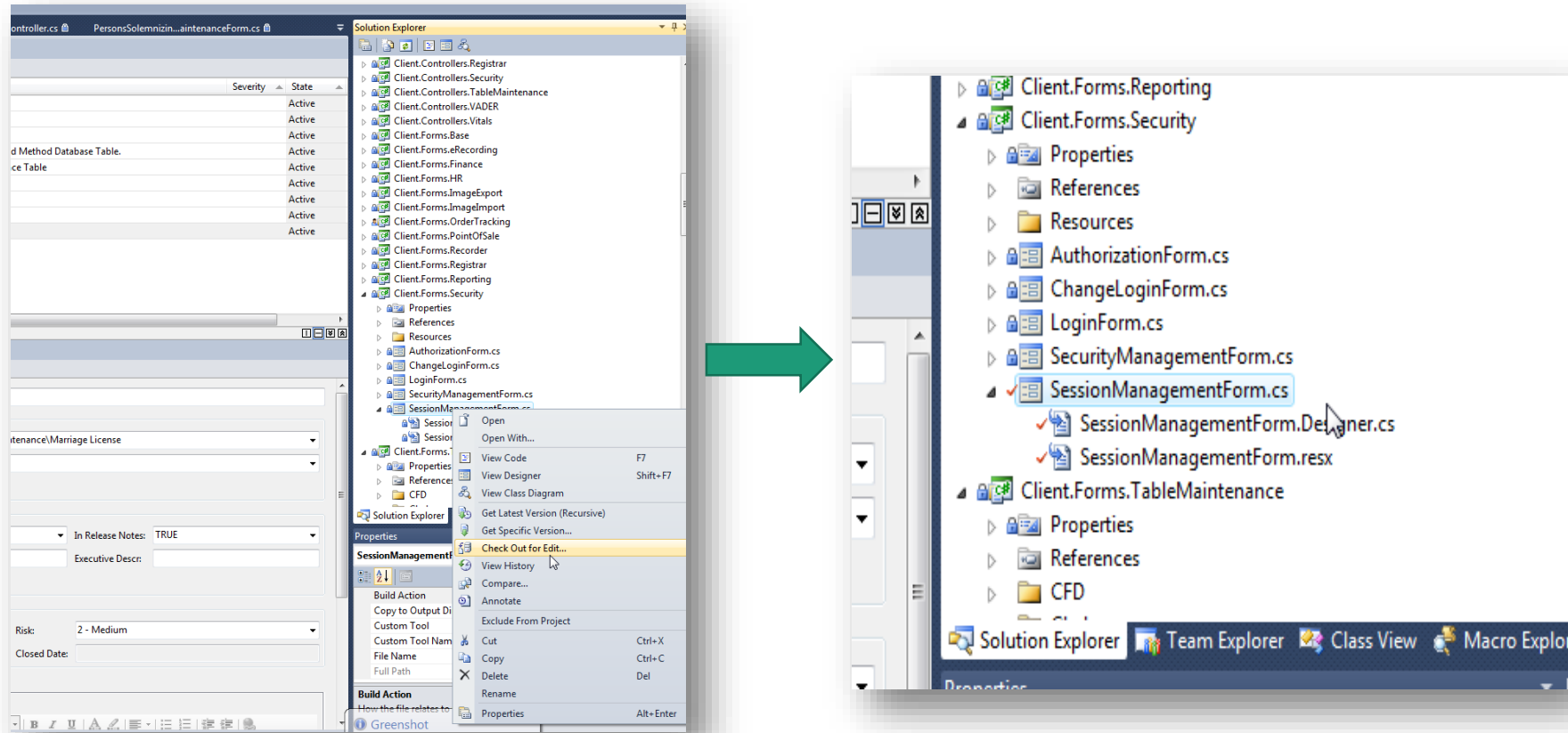
- Simple and familiar interface
- Can be secured and locked down with access controls and customizable check-in rules
- Simple and efficient branching and merging
- Visually track changes across branches

# Connecting to a server

- You can use a server of your own
- Already available repositories
  - Codeplex

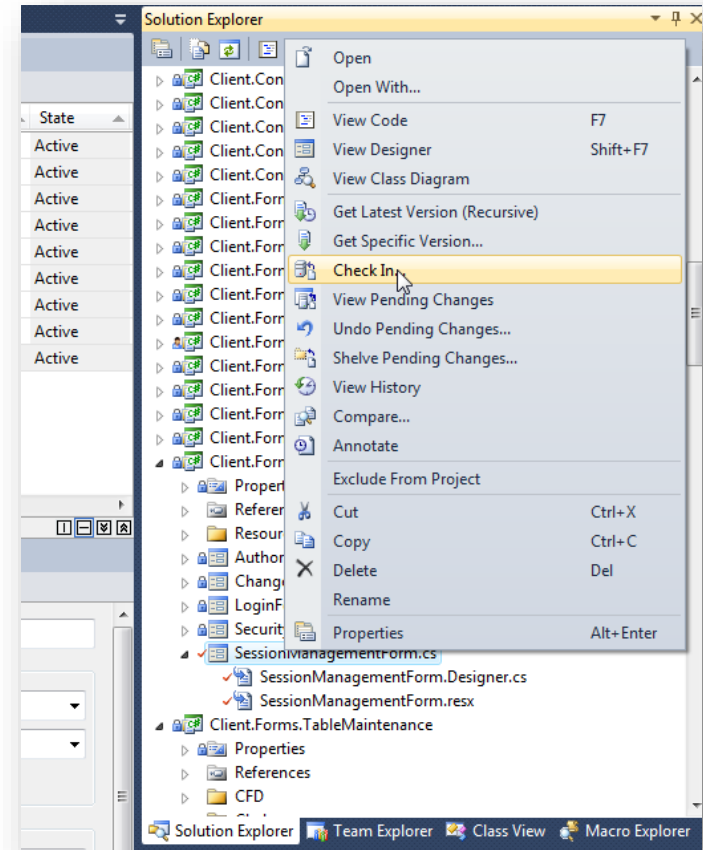


# Check-In and Check-Out

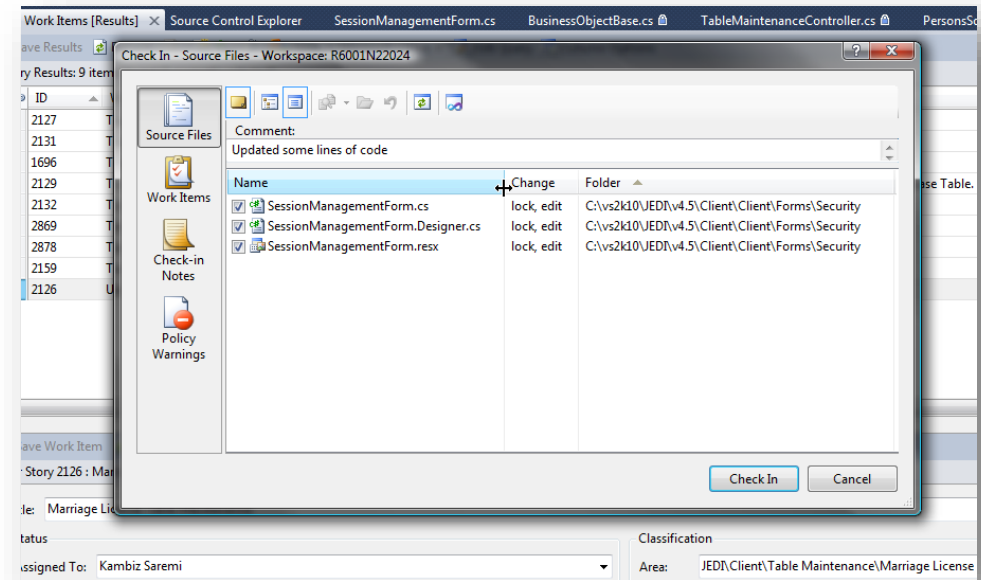
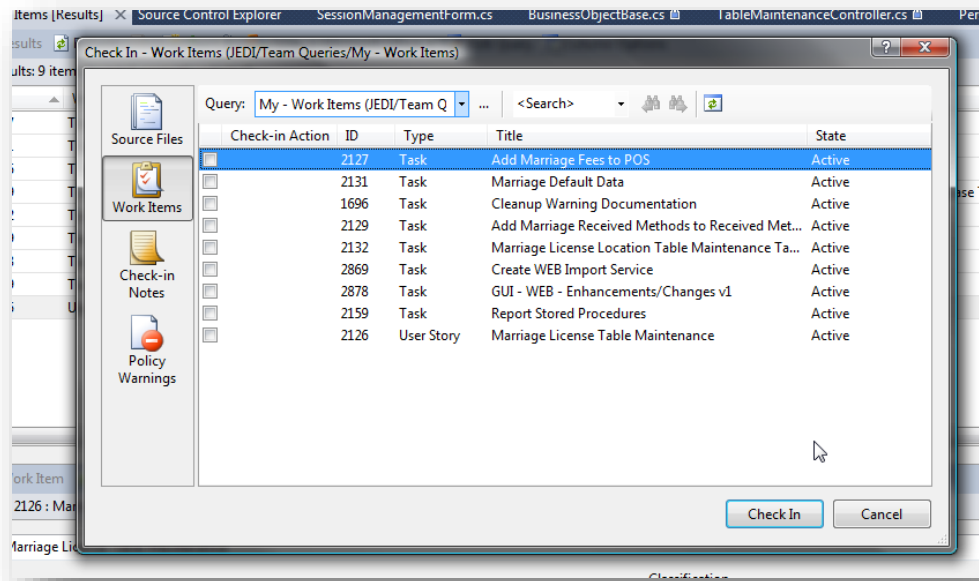


# Check-In and Check-Out

- Undo pending changes
- Shelf pending changes

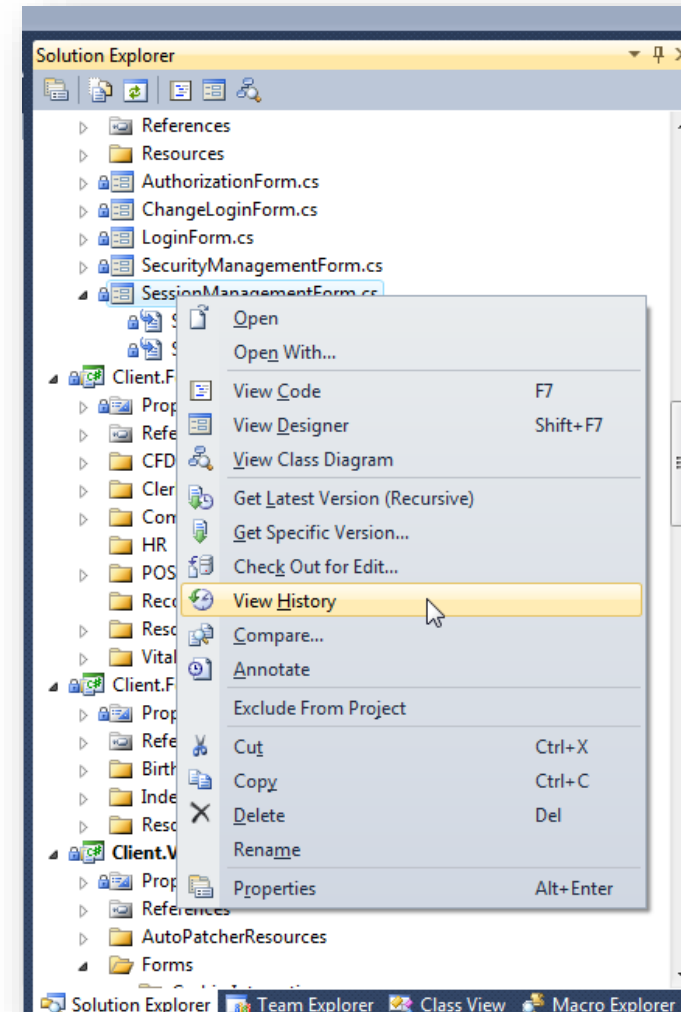


# Check-In and Check-Out



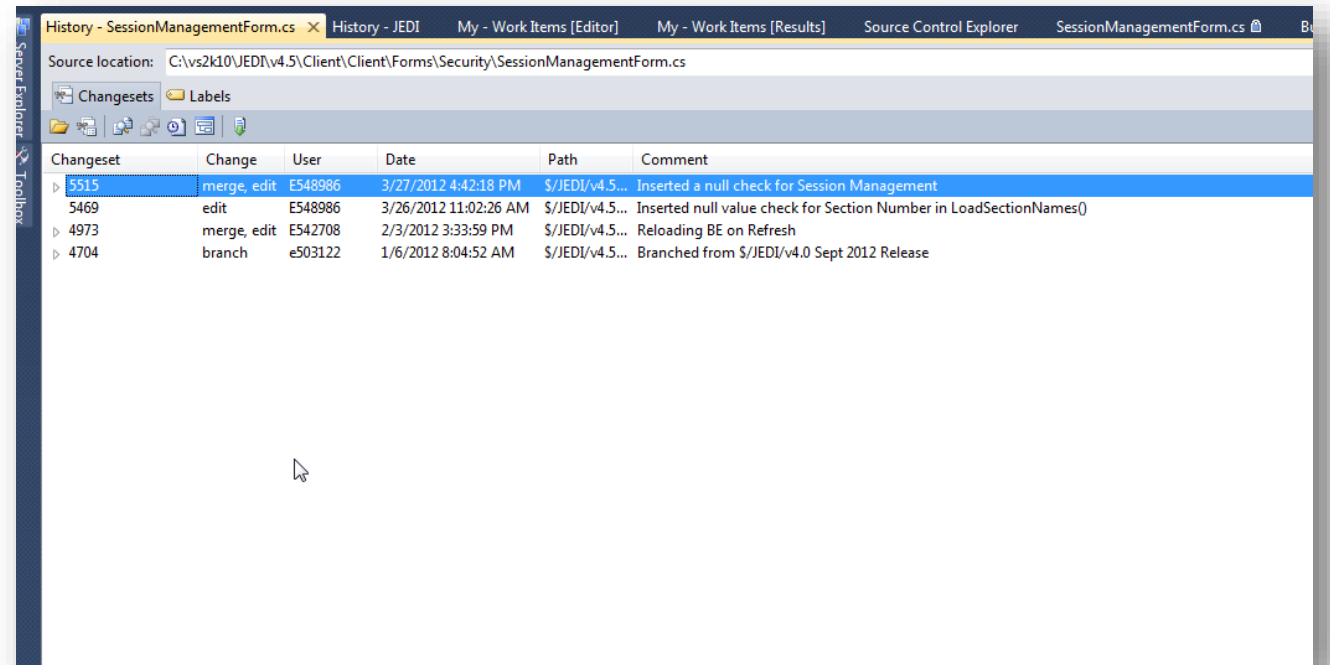
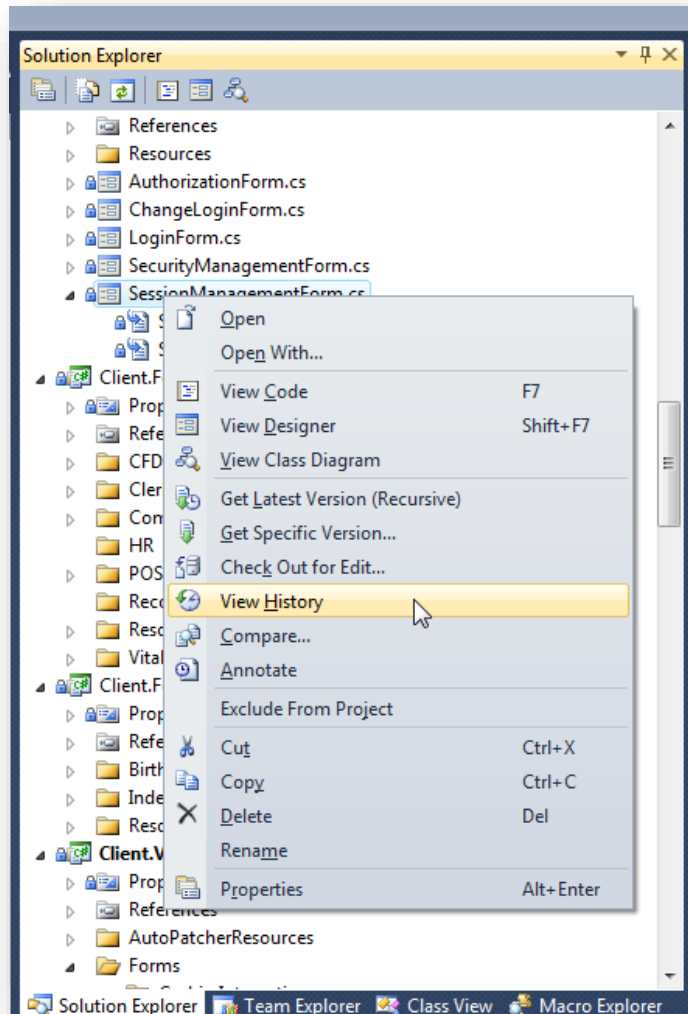
# Check-In and Check-Out

- Check-Out but somebody messed up the file
- Build errors
- Who did it?



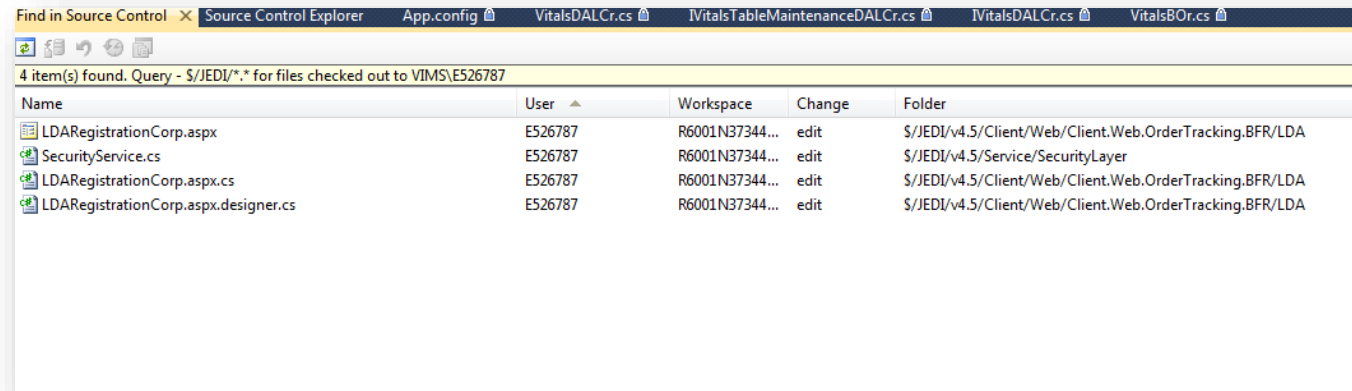
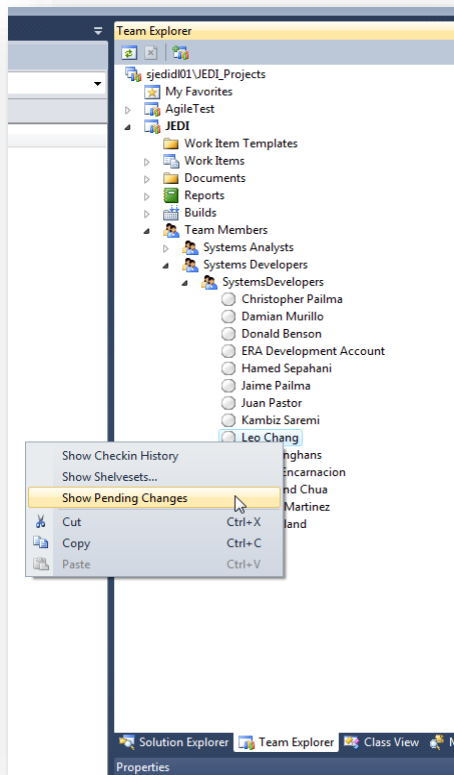
# Somebody messed up a file – recovery

## Method 1



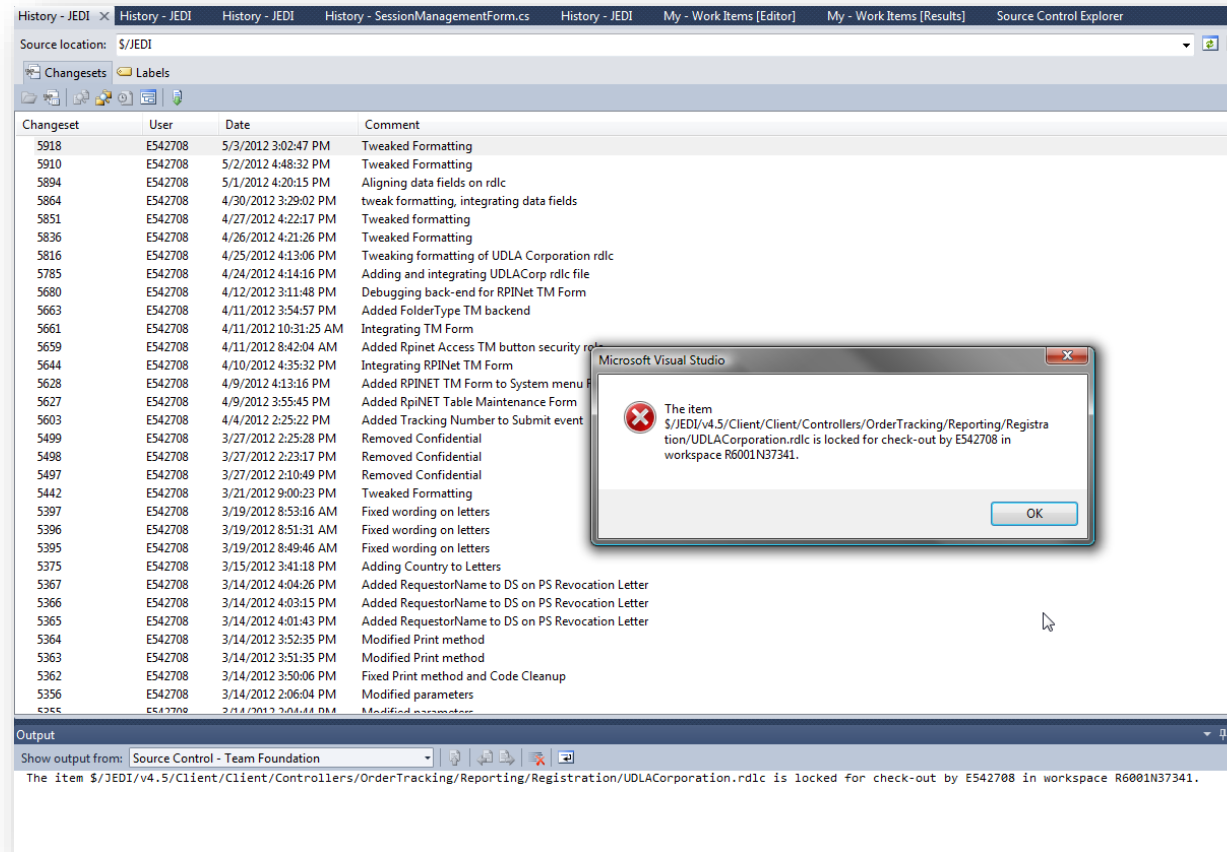
# Somebody messed up a file – recovery

## Method 2

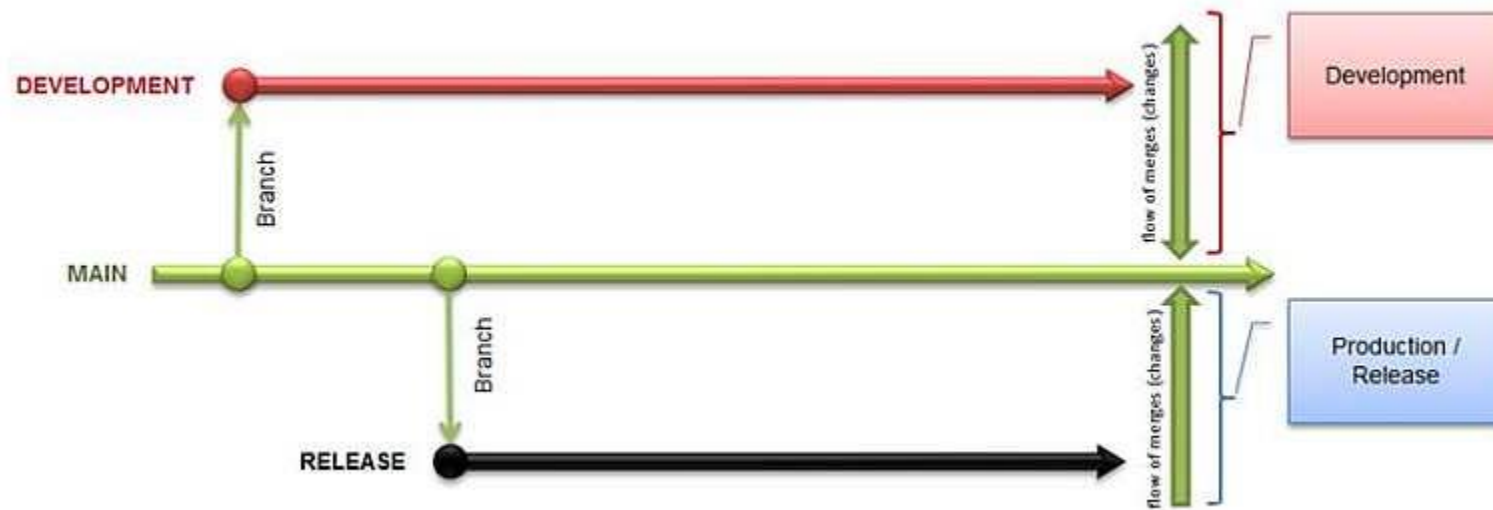




# What if already checked out?



# Branching and merging



# Work item

- What ties everything together and enables teams to collaborate with tasks they are all working on
- A work item can be:
  - User story
  - Tasks
  - Bugs
  - Requirements
  - Etc.

# Work item tracking

The screenshot displays a work item tracking application interface. At the top, there are tabs for 'My Work Items (All) [Results]', 'My - Work Items [Results]', and 'Source Control Explorer'. Below the tabs, a toolbar contains buttons for 'Save Results', 'Refresh', 'Open in Microsoft Office', 'Edit Query', and 'Column Options'. A status bar indicates 'Query Results: 9 items found (1 currently selected)'.

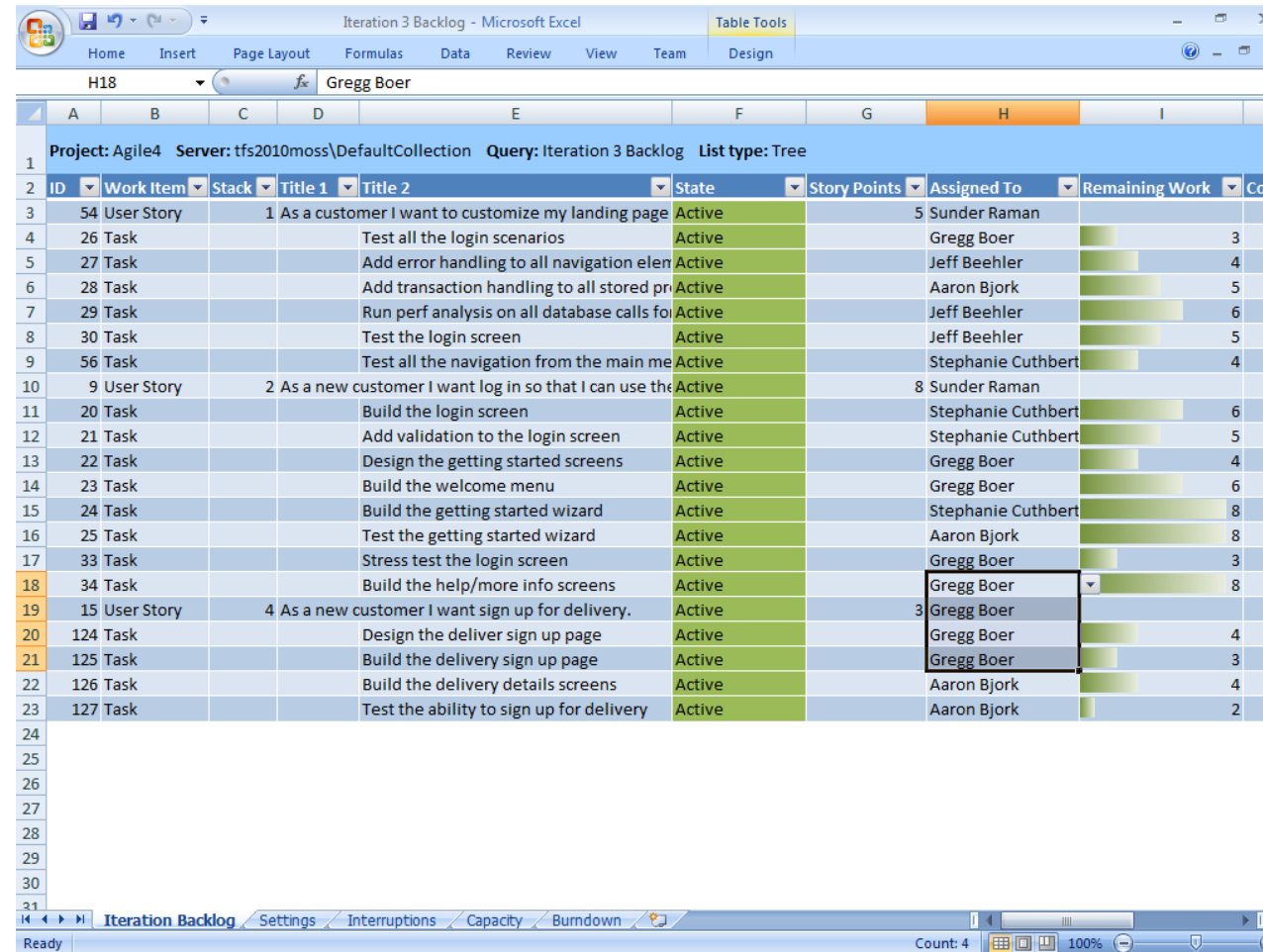
The main table lists work items with columns: ID, Work Item Type, Area Path, Title, Severity, and State. The selected item is ID 2131, a Task titled 'Marriage Default Data'.

ID	Work Item Type	Area Path	Title	Severity	State
2127	Task	JED\Client\Table Maintenance\Marriage License	Add Marriage Fees to POS		Active
2131	Task	JED\Client\Table Maintenance\Marriage License	Marriage Default Data		Active
1696	Task	JEDI	Cleanup Warning Documentation		Active
2129	Task	JED\Client\Table Maintenance\Marriage License	Add Marriage Received Methods to Received Method Database Table.		Active
2132	Task	JED\Client\Table Maintenance\Marriage License	Marriage License Location Table Maintenance Table		Active
2869	Task	JED\Client\RecorderClerk\BDM (LA Vitals)	Create WEB Import Service		Active
2878	Task	JED\Client\RecorderClerk\BDM (LA Vitals)	GUI - WEB - Enhancements/Changes v1		Active
2159	Task	JED\Client\RecorderClerk\BDM (LA Vitals)	Report Stored Procedures		Active
2176	User Story	JED\Client\Table Maintenance\Marriage License	Marriage License Table Maintenance		Active

Below the table, the 'Task 2131 : Marriage Default Data' details are shown. The 'Title' is 'Marriage Default Data' and the 'Activity' is 'Development'. The 'Status' is 'Active' and the 'Reason' is 'New'. The 'Assigned To' is 'Kambiz Saremi'. The 'Classification' shows 'Area: JED\Client\Table Maintenance\Marriage License' and 'Iteration: JED\4.5\Dev'. The 'JEDI - Custom Fields' section includes 'TS Request', 'Training Item: TRUE', and 'In Release Notes: TRUE'. The 'Planning' section shows 'Stack Rank', 'Priority: 1', 'Start Date', and 'Finish Date'. The 'Effort (Hours)' section shows 'Original Estimate: 4', 'Remaining: 4', and 'Completed: 0'.

The 'Details' tab is selected, showing the 'Description' and 'History'. The 'Description' is 'Put the Marriage Default Data into System Parameters. Please reuse where possible. The RRCC Address should already been in the table.' The 'Include' section lists 'Vitals MLS\_DefaultData\_RecorderName', 'Vitals MLS\_DefaultData\_Location', 'Vitals MLS\_DefaultData\_Title', and 'Vitals MLS\_DefaultData\_Address'. The 'History' section shows a list of changes with timestamps and editors: '4/30/2012 9:17:02 AM Edited by Donald Benson', '10/27/2011 8:15:27 AM Edited by Christopher Pailma', and '10/26/2011 3:54:23 PM Edited by JEDI\_TFS\_SERVICE on behalf of Christopher Pailma'.

# Work item tracking



Iteration 3 Backlog - Microsoft Excel

Table Tools: Design

H18 Gregg Boer

Project: Agile4 Server: tfs2010moss\DefaultCollection Query: Iteration 3 Backlog List type: Tree

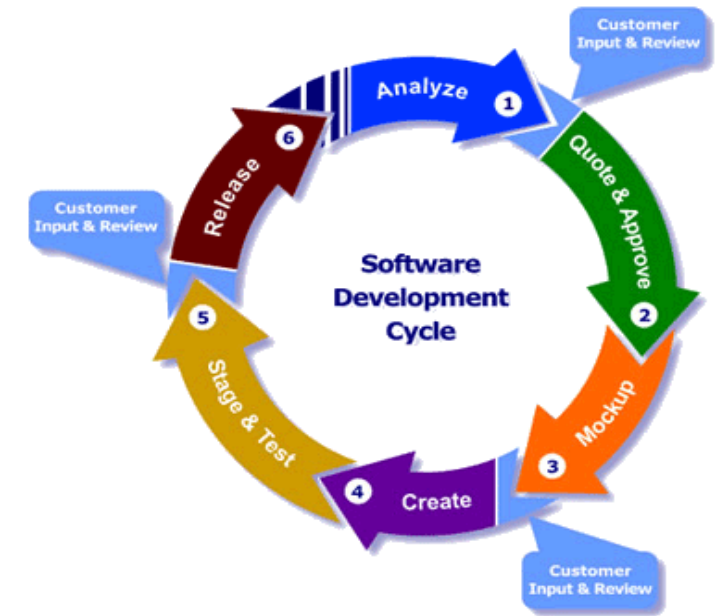
ID	Work Item	Stack	Title 1	Title 2	State	Story Points	Assigned To	Remaining Work	Count
54	User Story	1	As a customer I want to customize my landing page		Active	5	Sunder Raman		
26	Task			Test all the login scenarios	Active		Gregg Boer		3
27	Task			Add error handling to all navigation elements	Active		Jeff Beehler		4
28	Task			Add transaction handling to all stored procedures	Active		Aaron Bjork		5
29	Task			Run perf analysis on all database calls for login	Active		Jeff Beehler		6
30	Task			Test the login screen	Active		Jeff Beehler		5
56	Task			Test all the navigation from the main menu	Active		Stephanie Cuthbert		4
9	User Story	2	As a new customer I want log in so that I can use the system		Active	8	Sunder Raman		
20	Task			Build the login screen	Active		Stephanie Cuthbert		6
21	Task			Add validation to the login screen	Active		Stephanie Cuthbert		5
22	Task			Design the getting started screens	Active		Gregg Boer		4
23	Task			Build the welcome menu	Active		Gregg Boer		6
24	Task			Build the getting started wizard	Active		Stephanie Cuthbert		8
25	Task			Test the getting started wizard	Active		Aaron Bjork		8
33	Task			Stress test the login screen	Active		Gregg Boer		3
34	Task			Build the help/more info screens	Active		Gregg Boer		8
15	User Story	4	As a new customer I want sign up for delivery.		Active	3	Gregg Boer		
124	Task			Design the deliver sign up page	Active		Gregg Boer		4
125	Task			Build the delivery sign up page	Active		Gregg Boer		3
126	Task			Build the delivery details screens	Active		Aaron Bjork		4
127	Task			Test the ability to sign up for delivery	Active		Aaron Bjork		2

Iteration Backlog Settings Interruptions Capacity Burndown

Count: 4 100%

# Agile

- We are uncovering better ways of developing software by doing it and helping others do it.
- Through this work we have come value:
  - **Individuals and interactions** over processes and tools
  - **Working software** over comprehensive documentation
  - **Customer collaboration** over contract negotiation
  - **Responding to change** over following a plan
- That is, while there is value in the items on the right, we value the items on the left more



# Alternatives development programs

- Visual SVN
- Apache Subversion
- Team Explorer Everywhere 2012

# Conclusions

- Single integrated solution that delivers version control, work item/bug tracking and a number of other features
- Cross-functional, in-context collaboration – Project Managers, Architects, Developers, Testers, Designers
- Powerful team management system integration lets you focus on your business, by automating repetitive or otherwise time-consuming tasks



# References

- *Team Foundation Server 2010*. Microsoft Visual Studio Team Foundation Server 2010, 13 March 2012. Web. 3 May 2012. <http://msdn.microsoft.com/en-us/vstudio/ff637362>
- *TFS 2010*. Microsoft Visual Studio, 4 July 2011. Web. 5 May 2012. <http://www.microsoft.com/visualstudio/en-us/products/2010-editions/team-foundation-server/overview>
- Sutherland, Jeff. *Professional Team Foundation Server*. Indianapolis: Wiley Publishing Inc, 2007. Print.

# Thank you

- Questions?

