Getting Started with Git

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What is Git?

- Distributed Source Control
- Works Off-Line
  - Full functionality on the local machine
- Supports Remote Repositories
  - GitHub is the most popular
- Full Source Control Features
  - Change Tracking
  - Branching / Merging
  - History
  - And more…

Centralized vs. Distributed

Centralized Source Control

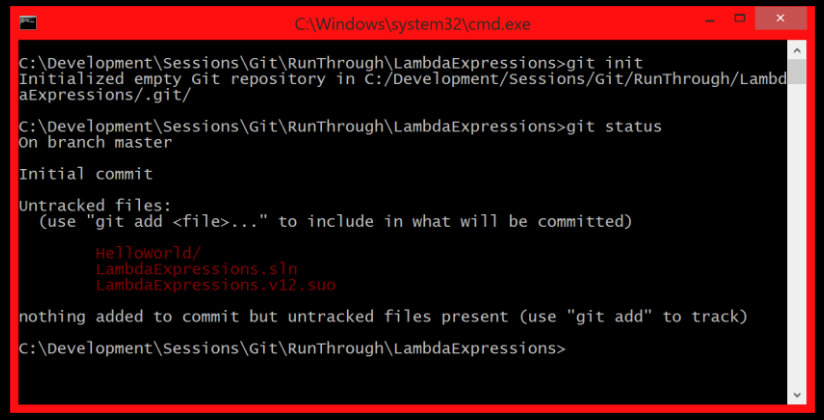
- TFS, Visual Source Safe, others
- Central server is required
- Server has the “true” copy
  - Checkout / locked files
- Server has full history
- Limited off-line features

Distributed Source Control

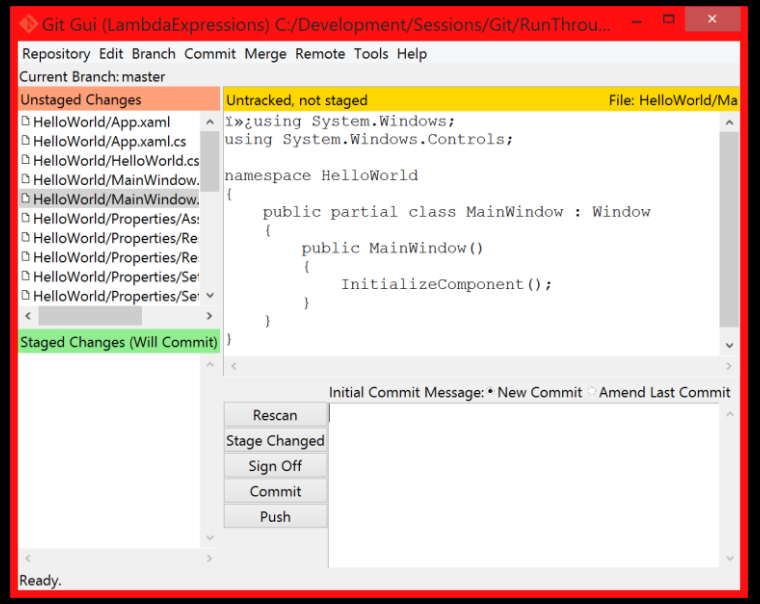
- Git, Mercurial, others (Git has won)
- Server is optional
- Each user has a “true” copy
  - No locked files
- Each user has full history
- Full features available off-line

Interacting with Git

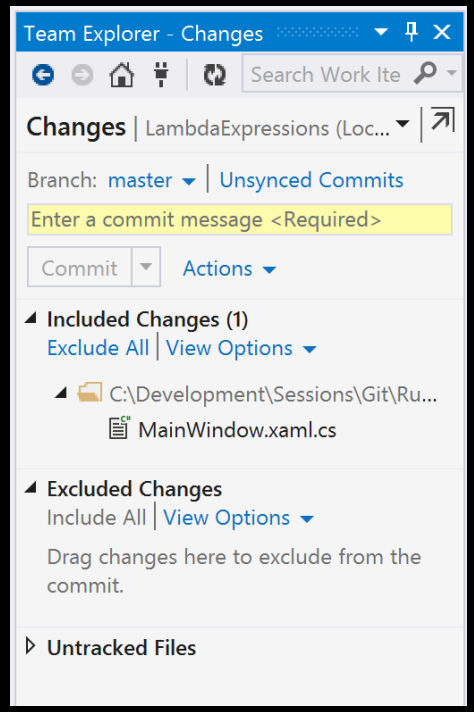
Command Line



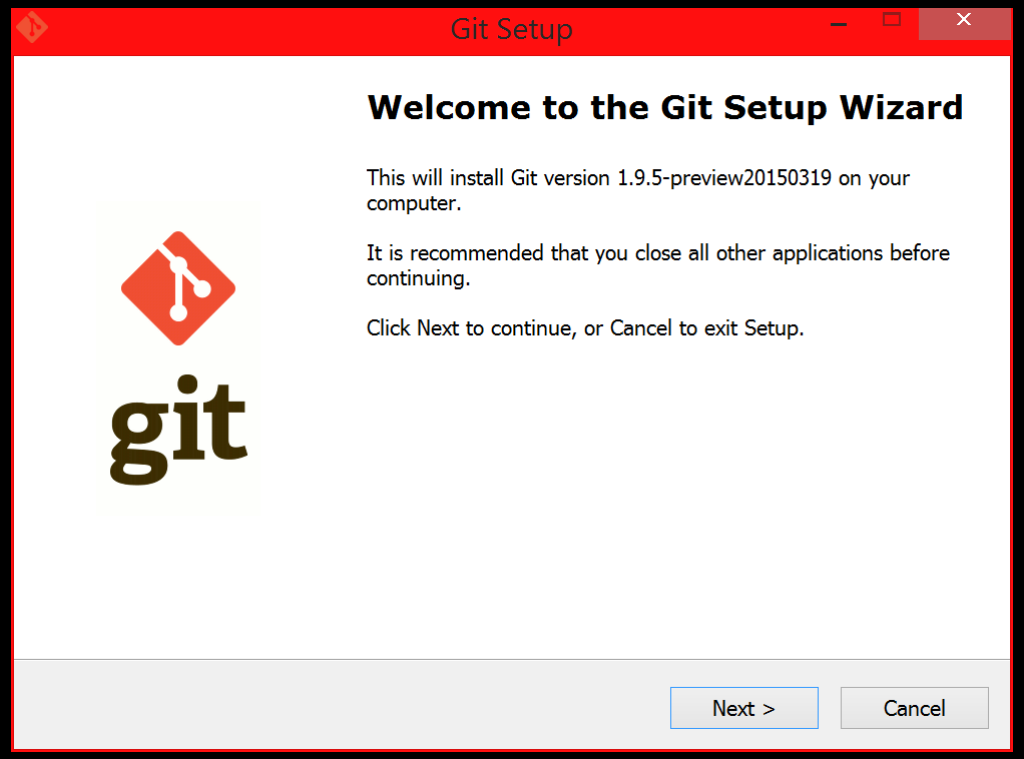
Git GUI

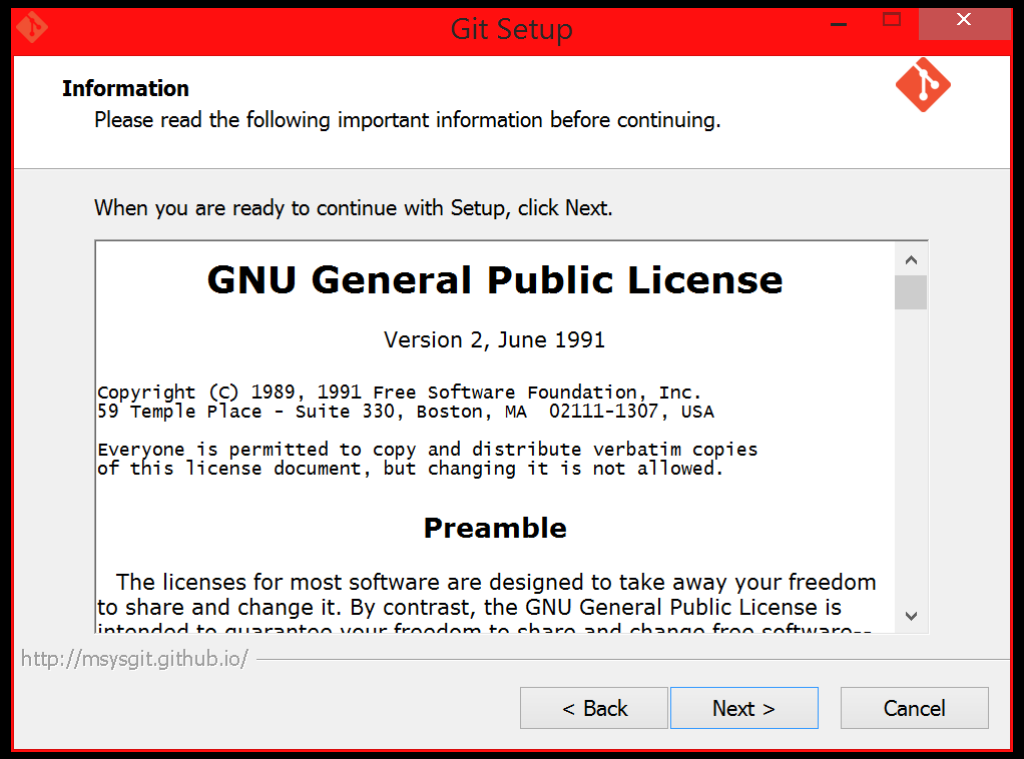


Visual Studio 2013

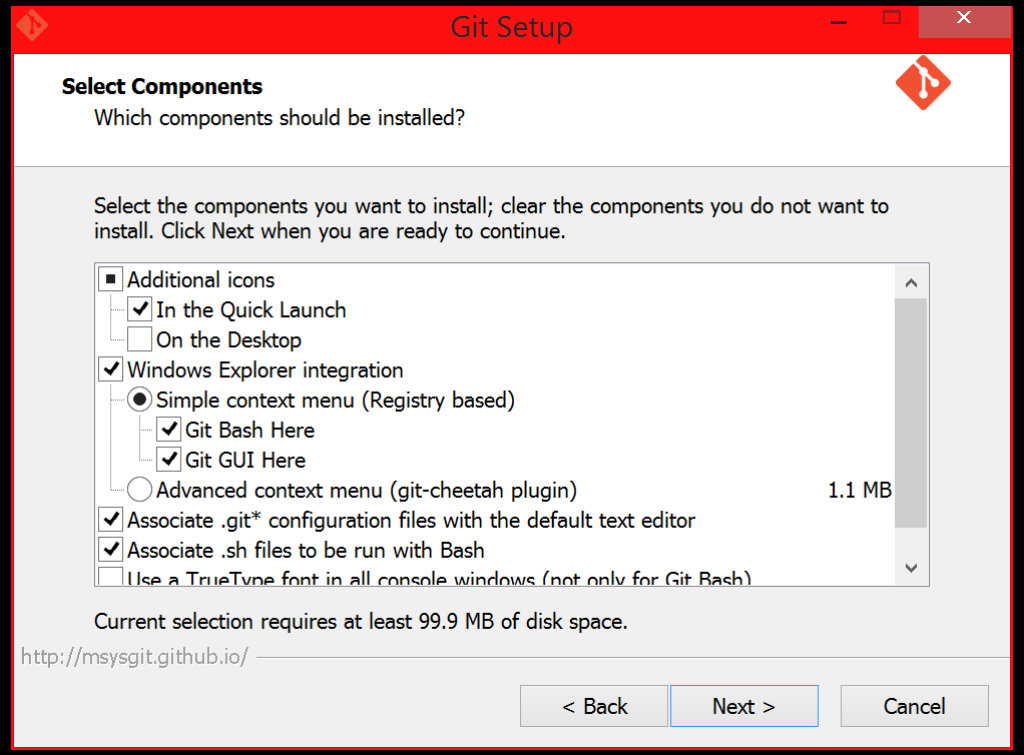


Installation



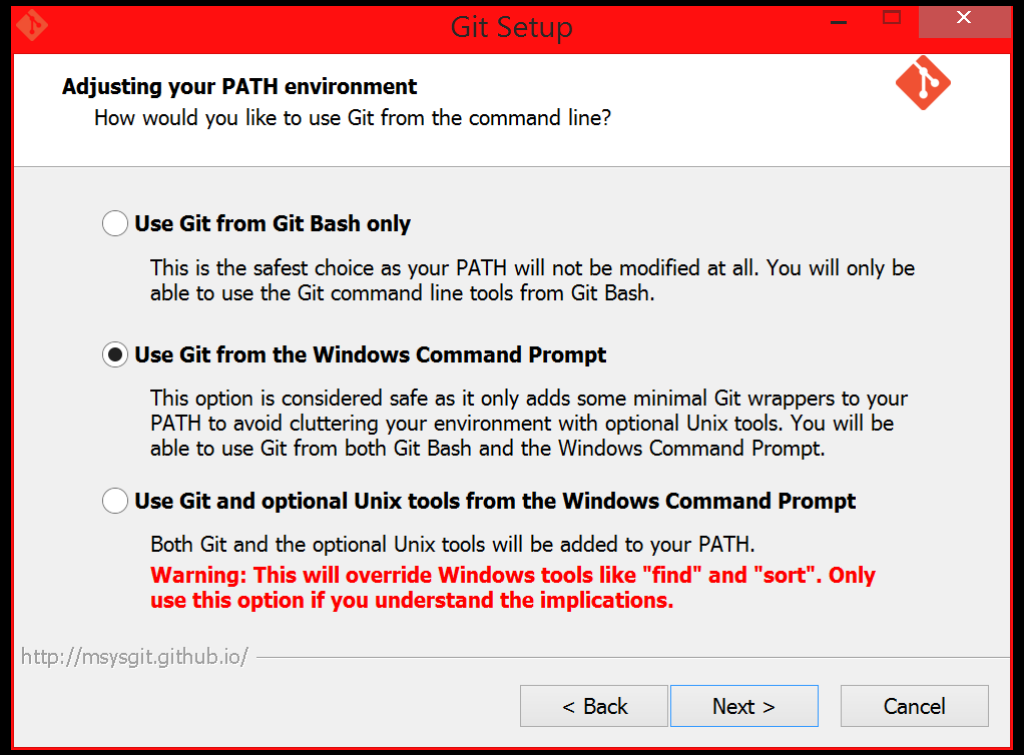


Installation



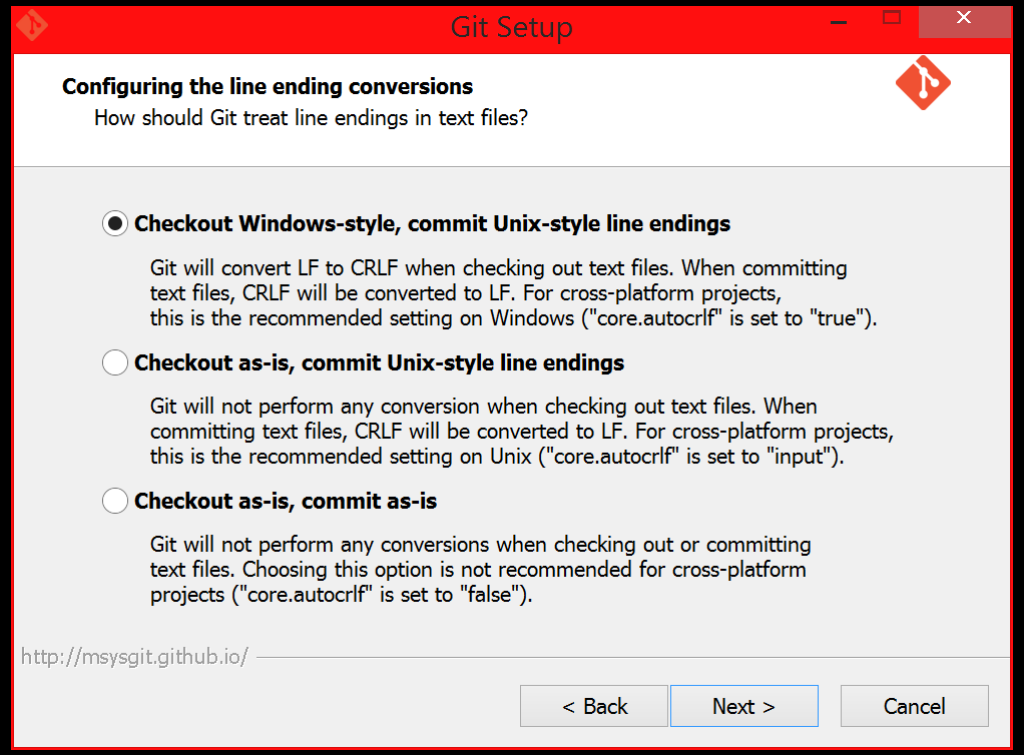
- Git Bash Here
  - Adds right-click menu to open Git command environment
  - bash is a Unix shell
  - *I don't use this
- Git GUI Here
  - Adds right-click menu to open Git graphical environment
  - *I don't use this

Installation



- Use Git from Windows Command Prompt
  - Add “git” to the path
  - Allows git to be used from the command prompt
  - *I use this

Installation



- Line Endings
  - Windows-style = CRLF
    - Carriage return & line feed
  - Unix-style = LF
    - Line feed

- This will impact code editors that don't understand Unix-style.
- This will impact "diff" tools that do file comparisons.

Key Commands

- init
  - Create a repository
- add / rm
  - Include / exclude files from the repository (tracking)
- .gitignore
  - File types to ignore
- status
  - View unsaved changes
- commit
  - Save changes

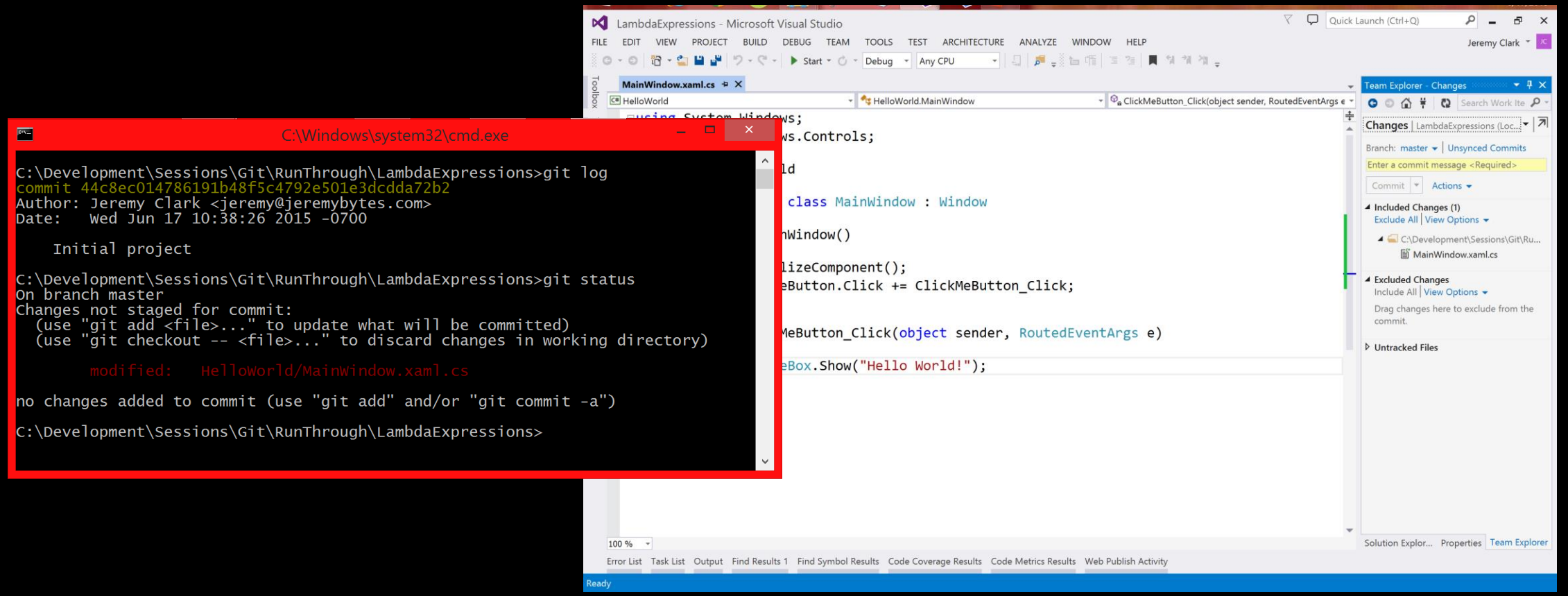
Branching

- branch
  - Create a new branch
- checkout
  - Change to a different branch
- merge
  - Update branch with changes from another branch
- stash
  - Temporary holding area (like “shelve”)
  - Can create a new branch from a stash

Remote Repositories

- remote
  - Configure a remote location
- push
  - Move changes from local repository to remote repository
- pull
  - Move changes from remote repository to local repository

Demo


C:\Windows\system32\cmd.exe
C:\Development\Sessions\Git\RunThrough\LambdaExpressions>git log
commit 44c8ec014786191b48f5c4792e501e3dcdda72b2
Author: Jeremy Clark <jeremy@jeremybytes.com>
Date: Wed Jun 17 10:38:26 2015 -0700
Initial project
C:\Development\Sessions\Git\RunThrough\LambdaExpressions>git status
On branch master
Changes not staged for commit:
(use "git add <file>..." to update what will be committed)
(use "git checkout -- <file>..." to discard changes in working directory)
modified: HelloWorld/MainWindow.xaml.cs
no changes added to commit (use "git add" and/or "git commit -a")
C:\Development\Sessions\Git\RunThrough\LambdaExpressions>
LambdaExpressions - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
FILE EDIT VIEW PROJECT BUILD DEBUG TEAM TOOLS TEST ARCHITECTURE ANALYZE WINDOW HELP
Jeremy Clark
Start
Debug
Any CPU
MainWindow.xaml.cs
HelloWorld
HelloWorld.MainWindow
ClickMeButton_Click(object sender, RoutedEventArgs e
class MainWindow : Window
lizeComponent();
eButton.Click += ClickMeButton_Click;
MeButton_Click(object sender, RoutedEventArgs e)
eBox.Show("Hello World!");
Team Explorer - Changes
Changes | LambdaExpressions (Loc...
Branch: master | Unsynced Commits
Enter a commit message <Required>
Commit
Actions
Included Changes (1)
Exclude All | View Options
C:\Development\Sessions\Git\Ru...
MainWindow.xaml.cs
Excluded Changes
Include All | View Options
Drag changes here to exclude from the commit.
Untracked Files
100 %
Error List
Task List
Output
Find Results 1
Find Symbol Results
Code Coverage Results
Code Metrics Results
Web Publish Activity
Solution Explor...
Properties
Team Explorer
Ready

Links

- Code School
  https://try.github.io
- Git Documentation
  https://git-scm.com/docs
- MSDN Visual Studio Documentation
  https://msdn.microsoft.com/en-us/library/hh850437.aspx
- Git .gitignore
  https://github.com/github/gitignore

Thank You!

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