

**Note:** For full list of updates, you can visit our repository updates on our Google Code page at <http://code.google.com/p/capstone2009/updates/list>

### **September 15, 2009**

- Created basic GUI
- Added "About" box with basic information

### **September 17, 2009**

- Added functionality to buttons
- Broke scaling functionality

### **September 22, 2009**

- Added scrollbars (not fully functional yet)

### **September 23, 2009**

- Revised scrolling
- Added a basic zoom functionality (20/50/75/100 percent)
- Added basic information about picture (height, width, filename)
- Debugged NULL commands (ex. saving a picture before opening one)

### **September 24, 2009**

- Added rough iteration of rotate
- Added first functional pop-up box that requires user input (degrees to rotate)

### **September 29, 2009**

- Revised rotate function (Does not keep the original image in the background and now shows the entire image after the rotate)
- Bug: Rotate moves the picture from the top left to bottom right of the viewing area

### **September 30, 2009**

- Refactored overall code
- Improved behavior of zooming while rotating or vice versa
- Fixed bug found on September 29, 2009

### **October 1, 2009**

- Added Doxygen comments to the code to generate program documentation via HTML
- Improved zooming by asking user for percent of zoom as opposed to a fixed value

- Added resize functionality

### **October 6, 2009**

- Added first rough draft of the user manual
- Note: Class presented projects

### **October 7, 2009**

- Revised manual (Added getting started and FAQs)
- Added download link on homepage to download working copy of program
- Added rough iteration of undo and redo

### **October 8, 2009**

- Refactored overall code (Added ShoppedGui.cs)

### **October 13, 2009**

- Lecture from professor

### **October 14, 2009**

- Refactored ShoppedGui.cs. Extracted methods into classes in core
- Fixed newfound bug: Image would stop rotating after rotating so many degrees
- Fixed newfound bug: Image Zoom/Rotate/Resize would behave irrational after use of all 3 ( Rotate, Resize, Rotate )
- Added Doxygen comments
- Removed TempImage entirely from the project
- Replaced TempImage with new logic and a more robust CurrentImage (more properties)

### **October 15, 2009**

- Centered dialog boxes
- Created ImageHistoryItem, a simple class that is now used in the list for ImageHistory
- Added current zoom level to SetAdditionalInfo() in ShoppedGui
- Added a brief description to each action performed in Shopped, used in ImageHistoryItem
- Added a tooltip to Undo/Redo that tells the user what the previous/next operation is
- Added Grayscale filter

### **October 20, 2009**

- Note: Class presented projects

### **October 21, 2009**

- Revised Undo/Redo (Still not perfect, yet)

### **October 22, 2009**

- Added Nunit testing to our project
- Added PictureBoxTester.cs for Nunit

### **October 27, 2009**

- ImageHistory is now tested
- Added bat file to open Shopped project in Visual Studio
- Modified ImageHistory to use PictureBoxImage instead of Image
- Starting adding tests for ImageHistory
- Undo/Redo one step closer to working (Thanks to testing functionality)

### **October 28, 2009**

- Moved ImageHistory logic out of SetUndoAndRedo method in ShoppedGui into 1  
ImageHistory
- Added unit tests for these new methods
- Undo/Redo almost perfected

### **October 29, 2009**

- Added more testing functionality
- Added Filters option for Grayscale and now Sepia (Sepia currently doesn't work)

### **November 3, 2009**

- Changed Interface to not pass in a PictureBoxImage object
- Updated manual and added "Source" index
- Added call to SetAdditionalInfo when undo or redo is used (to update the info at the  
bottom of the GUI)
- Fixed bug in ImageZoom where an extra call was being made to ImageRotate
- Created batch file to view the logging done in our program
- Added invert and brightness filters
- Bug: Zoom/Rotate seem broke when filters are applied before zooming or rotating
- Note: Class presented projects

### **November 4, 2009**

- Added contrast filter (at this point it processes slow, but does the job)

- Added Doxygen comments to rest of filters

### **November 5, 2009**

- Added more buttons to GUI
- Changed var declarations to their appropriate type

### **November 10, 2009**

- Changed ImageZoom to work off of PictureBox object in ShoppedGui instead of our custom PictureBoxImage object
- Refactored unnecessary namespaces, renamed GUI variables, and extracted methods
- Fixed GUI buttons to be disabled while no picture is loaded

### **November 11, 2009**

- Veteran's Day (No Class)

### **November 12, 2009**

- Added color index at bottom of window based on mouse XY coordinates
- Fixed Doxygen comments
- Removed unnecessary using directives at the tops of files
- Removed Unzoomed properties on PictureBoxImage (no longer used)

### **November 17, 2009**

- Added pen tool
- Fixed bug when someone canceled opening up a new photo
- Added scroll wheel zoom
- Updated installer release on code.google.com
- Moved all Dialogs in UI to their own folder
- Created a Dialog for ImageDraw that can adjust the color, thickness and style (i.e. square, rounded) of the shape to be drawn
- Moved event handlers for PictureBox mouse actions into ShoppedGui constructor instead of risking having them in the designer (risk overwriting on autogen of code in that file)
- Added Doxygen comments for pen tool
- Added button in GUI to use the pen tool
- Changed DrawOnPictureBox in ImageDraw to use Graphics object (vs a nested loop) so we can change the shape of the pen tool
- Fixed bug with Image Resize
- Bug: ShoppedGui.Designer.cs sometimes deletes the MouseUp Event in PictureBox
- Note: Class presented projects

### **November 18, 2009**

- Focused on drafting Software Engineering (Requirements) Document for the program
- Renamed PictureBoxImage to ShoppedImage
- Added Doxygen comments to all methods
- Made Dialogs more robust by doing input validation
- Removed DrawToolStripButton and replaced it with a checkbox in the Drawing Properties dialog in the Tools menu
- Created a UML-ish diagram of the general classes and their dependencies

### **November 19, 2009**

- Focused on finishing Software Engineering (Requirements) Document for the program
- Changed generic clamp class in contrast to take in ints
- Fixed validation on DrawingDialog
- Added use case for rotating an image
- Added use case for performing an undo
- Submitted Final SE (Requirements) Document for the program
- Refined Gamma Filter

### **November 24, 2009**

- Group talk with GA: Need to refine Requirements Document

### **November 25, 2009**

- Thanksgiving Break

### **November 26, 2009**

- Thanksgiving Break

### **December 1, 2009**

- Worked on Individual Reports

### **December 2, 2009**

- Worked on Individual Reports

### **December 3, 2009**

- Talked with TA on what changes to make for our final project

**December 8, 2009**

- Worked on filters and documentation

**December 9, 2009**

- Added Crop with Right-Click
- Added 2x Zoom with Right Click
- Added Copy to Clipboard with Right Click
- Added 2x Zoom (True zoom, not just scaling)
- Finalized Gamma Filter
- Added trimming algorithm for rotation
- Fixed filters menu (Toolbar Button and Dropdown menu didn't have the same options)
- Added slower (more iterative) filters
- Fixed error on opening a non-image

**December 10, 2009**

- Added final release on our Google Code webpage
- Presented final presentation and submitted final paperwork
- Watched Group 3 present

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