This folder contains a report, codes and results. Also it contains 2 presentations, one with more details (Presentation631.pptx), the other is shorter but with narration (Presentation631_short_final.pptx)

Guide to running code:

Panorama 1

matlabinbuilt_panorama.m: This file uses inbuilt MATLAB functions to do image stitching. When run it prompts for a mode. Mode 1 processes images, while mode 2 is for video. If mode 1 is selected then you need to give the path to a folder containing the images. For example C: \<path>\balcony. The image name should be in this form: foldername1.jpg foldername2.jpg. For example the 'balcony' folder has two images balcony1.jpg and balcony2.jpg

In mode 2 give the full location of the video. For example: C: \<path>\vid1.mp4. Then the program prompts the user to input the number of frames to fuse. If the user enters 5 then the code uses approximately 5 equally spaced frames from the video to develop the panorama.

Panorama 2

imgstitch.m: This file does image stitching using my pipeline as described in the report. This too asks for a mode (1 for stitching 2 images, 2 for video and 3 for stitching multiple images). After entering the mode you also need to give the path to the images directory or the path to the video much like what was mentioned in the section above.

Panorama 3

This is an incomplete OpenCV implementation. This code should not be run.

Inpainting: Android

The full project for the android app is present here. This requires OpenCV to be installed in the device to run.

After the app is run, select 'Pick Image' from the menu. Select an image which is now displayed. The region of interest is assumed to be rectangular. To define it touch the top left corner of the region of interest on the displayed image and drag your finger to the bottom right corner of the desired rectangular region of interest. Once this is done the region of interest is shown zoomed in. If you are not satisfied with it press 'Reset' from the menu. If all is OK, tap the screen once where the image is displayed and inpainting will start and the result will be displayed.

Inpainting. Windows

This is a Visual Studio 2010 project which also uses OpenCV. The whole project is present here. The name of the image to be inpainted is passed as argument to the code. When run the image is displayed in a window.

Mode 1: Select the vertices of a polygon (preferably in clockwise or anticlockwise order) by left clicking. Any number of vertices may be selected. This polygon thus defined forms the mask and the code will attempt to inpaint the polygonal region. Once done selecting the vertices press any key to start the inpainting process.

Mode 2: Select the vertices of a polygon (preferably in clockwise or anticlockwise order) by left clicking. This gives us a region of interest. Then right click on a point inside the polygon that is part of the region

that needs to be inpainted. For example if you want to inpaint a timestamp printed in say yellow colour, then first select a rectangular region of interest around the timestamp by clicking on 4 points that form the vertices. Then right click on any point in the timestamp (that is right click on any of the yellow pixels of the timestamp). Then press any key to start the inpainting process

Mode 3: Press control key and then left click on a pixel that has the colour of the regions to be inpainted. Then press any key to start.