Project

by **Pazim Goyal**

Language Used: Python

Editor: PyCharm

Python Version: 3.4.

Library used openCV2 , NUMPY, OpenCV

Notes: Image output as 1a-Image1.png,2-Image1.png and so on for Rainier1.png and Rainier2.png

Image output as 1a-Image2.png,2-Image2.png and so on for new image and Rainier3.png

….And so on for all images

My own 3 images are image1.jpg, image2.jpg, image3.jpg

To test with my Rainier images run loop for 0-5 instead of 0-2 in line

(i.e) 229

Comment out the lines:

“Line no 221,222,223

image1="project_images/image1.jpg"

image2="project_images/image2.jpg"

image3="project_images/image3.jpg"

” Just in starting of main function

Using opencv Sift and Harris Corner

Functions Implemented:

Startup: taking image 1 and image 2 and calling functions for keypoints and descriptors

```
def getRandromMatches(matches):
```

Takes 4 matches from all the matches randomly and return new match list

```
def findMyHomography(f_matches,kp,kp2):
```

return Homography H for matches , keypoints

```
def getMatches(matches,homocount,kp,kp2):
```

return only the matches those are inliers

```
def computeInlierCount(H,matches,inlierThreshold,kp,kp2):
```

computing inliers

```
def project(x1,y1,H):
```

returns x2 y2 for x1 y1 and H

```
def Ransac(matches,numIterations,inlierThreshold,kp,kp2):
```

Apply Ransac

```
def stitch(img, img2,Hnew,inverse):
```

creating empty canvas and copying image one on canvas, finding new points for image 2 and move to canvas

```
def co_ordinates(img,img2,inverse):
```

calculate four corners of both images