|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Neha kanthaliya**  **Color identification project**  **import** **cv2** | |  |  |  |  |  |  |  |  |  |
| **import** **pandas** **as** **pd** | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| img\_path = 'colorpic.jpg' | | | |  |  |  |  |  |  |  |
| csv\_path = 'colors.csv' | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| df = pd.read\_csv(csv\_path) | | | |  |  |  |  |  |  |  |
| print(df.head(5)) | | |  |  |  |  |  |  |  |  |
| air\_force\_blue\_raf Air Force Blue (Raf) #5d8aa8 93 138 168 | | | | | | | | |  |  |
| 0 air\_force\_blue\_usaf Air Force Blue (Usaf) #00308f 0 48 143 | | | | | | | | |  |  |
| 1 air\_superiority\_blue Air Superiority Blue #72a0c1 114 160 193 | | | | | | | | |  |  |
| 2 alabama\_crimson Alabama Crimson #a32638 163 38 56 | | | | | | | | |  |  |
| 3 alice\_blue Alice Blue #f0f8ff 240 248 255 | | | | | | | | |  |  |
| 4 alizarin\_crimson Alizarin Crimson #e32636 227 38 54 | | | | | | | | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| index = ['color', 'color\_name', 'hex', 'R', 'G', 'B'] | | | | | | |  |  |  |  |
| df = pd.read\_csv(csv\_path, names=index, header=**None**) | | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| print(df.head(5)) | | |  |  |  |  |  |  |  |  |
| color color\_name hex R G B | | | | | | | | |  |  |
| 0 air\_force\_blue\_raf Air Force Blue (Raf) #5d8aa8 93 138 168 | | | | | | | | |  |  |
| 1 air\_force\_blue\_usaf Air Force Blue (Usaf) #00308f 0 48 143 | | | | | | | | |  |  |
| 2 air\_superiority\_blue Air Superiority Blue #72a0c1 114 160 193 | | | | | | | | |  |  |
| 3 alabama\_crimson Alabama Crimson #a32638 163 38 56 | | | | | | | | |  |  |
| 4 alice\_blue Alice Blue #f0f8ff 240 248 255 | | | | | | | | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| print(len(df)) | |  |  |  |  |  |  |  |  |  |
| 865 |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| img = cv2.imread(img\_path) | | | |  |  |  |  |  |  |  |
| img = cv2.resize(img, (800,600)) | | | | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| clicked = **False** | |  |  |  |  |  |  |  |  |  |
| r = g = b = xpos = ypos = 0 | | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **def** get\_color\_name(R,G,B): | | | |  |  |  |  |  |  |  |
| minimum = 1000 | | |  |  |  |  |  |  |  |  |
| **for** i **in** range(len(df)): | | | |  |  |  |  |  |  |  |
| d = abs(R - int(df.loc[i,'R'])) + abs(G - int(df.loc[i,'G'])) + abs(B - int(df.loc[i,'B'])) | | | | | | | | | | |
| **if** d <= minimum: | | | |  |  |  |  |  |  |  |
| minimum = d | | |  |  |  |  |  |  |  |  |
| cname = df.loc[i, 'color\_name'] | | | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **return** cname | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **def** draw\_function(event, x, y, flags, params): | | | | | |  |  |  |  |  |
| **if** event == cv2.EVENT\_LBUTTONDBLCLK: | | | | | |  |  |  |  |  |
| **global** b, g, r, xpos, ypos, clicked | | | | | |  |  |  |  |  |
| clicked = **True** | | |  |  |  |  |  |  |  |  |
| xpos = x | | |  |  |  |  |  |  |  |  |
| ypos = y | | |  |  |  |  |  |  |  |  |
| b,g,r = img[y,x] | | | |  |  |  |  |  |  |  |
| b = int(b) | | |  |  |  |  |  |  |  |  |
| g = int(g) | | |  |  |  |  |  |  |  |  |
| r = int(r) | | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| cv2.namedWindow('image') | | | |  |  |  |  |  |  |  |
| cv2.setMouseCallback('image', draw\_function) | | | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **while** **True**: | |  |  |  |  |  |  |  |  |  |
| cv2.imshow('image', img) | | | |  |  |  |  |  |  |  |
| **if** clicked: | |  |  |  |  |  |  |  |  |  |
| cv2.rectangle(img, (20,20), (600,60), (b,g,r), -1) | | | | | | | |  |  |  |
| text = get\_color\_name(r,g,b) + ' R=' + str(r) + ' G=' + str(g) + ' B=' + str(b) | | | | | | | | | | |
| cv2.putText(img, text, (50,50), 2,0.8, (255,255,255),2,cv2.LINE\_AA) | | | | | | | | | |  |
| **if** r+g+b >=600: | | |  |  |  |  |  |  |  |  |
| cv2.putText(img, text, (50,50), 2,0.8, (0,0,0),2,cv2.LINE\_AA) | | | | | | | | | |  |
|  | |  |  |  |  |  |  |  |  |  |
| **if** cv2.waitKey(20) & 0xFF == 27: | | | | |  |  |  |  |  |  |
| **break** | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| cv2.destroyAllWindows() | | |  |  |  |  |  |  |  |  |