CBIR SYSTEM

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BACKGROUND ON CBIR

Content-based image retrieval is heavily based on the extraction and subsequent comparison of visual features of the images.

There are multiple types of low-level features that focuses on human vision, it being color, texture and shape information of each content of the image.

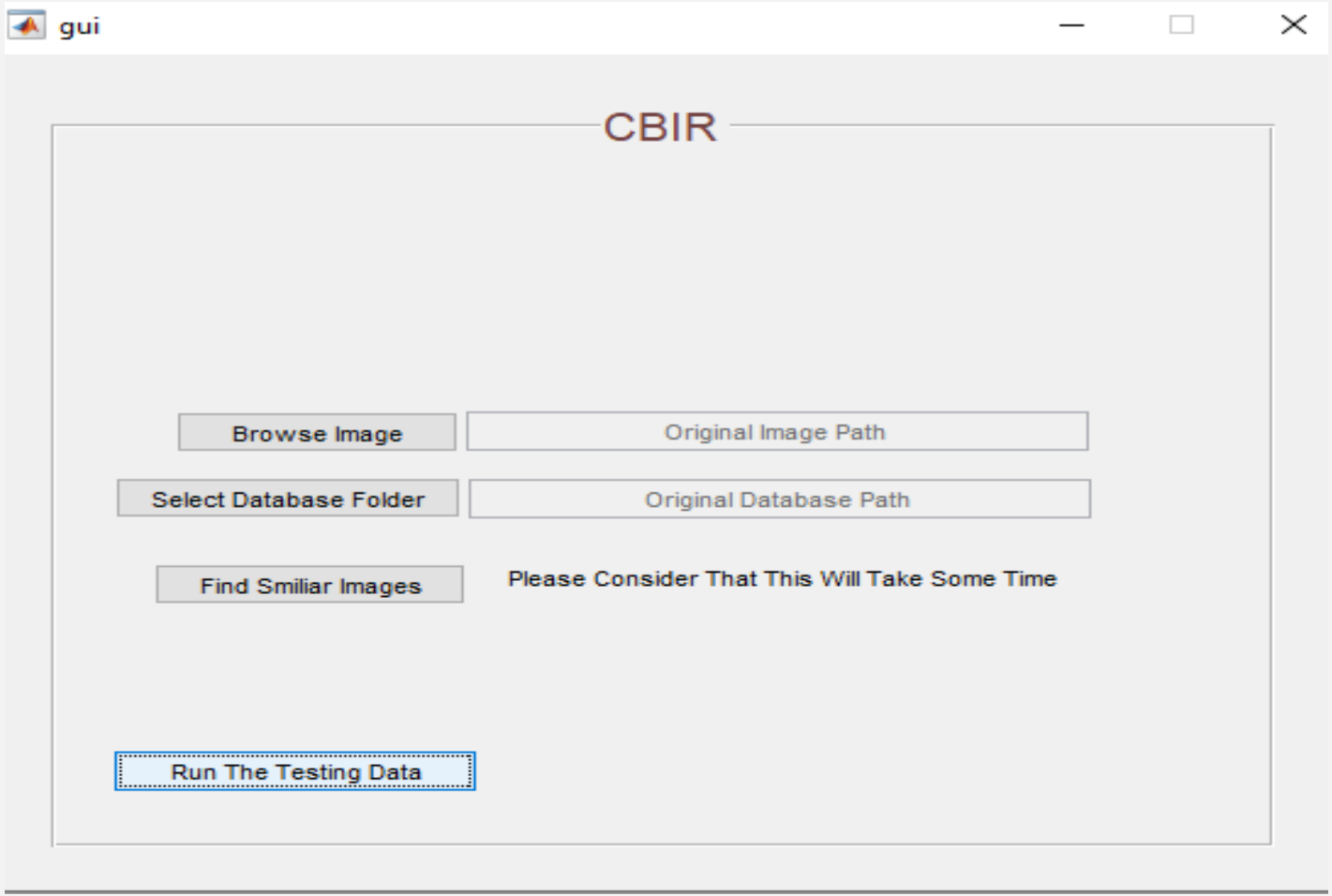
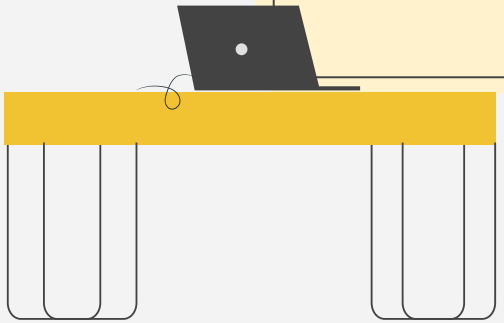
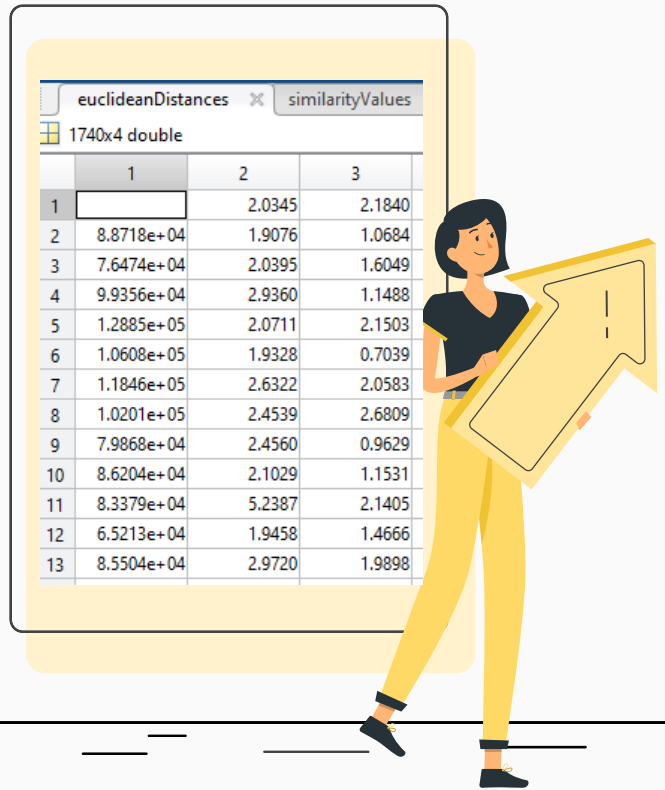

gui
CBIR
Browse Image
Original Image Path
Select Database Folder
Original Database Path
Find Smiliar Images
Please Consider That This Will Take Some Time
Run The Testing Data

IMAGE PREPROCESSING

- Image resize
- Gray to RGB





	1	2	3
1		2.0345	2.1840
2	8.8718e+04	1.9076	1.0684
3	7.6474e+04	2.0395	1.6049
4	9.9356e+04	2.9360	1.1488
5	1.2885e+05	2.0711	2.1503
6	1.0608e+05	1.9328	0.7039
7	1.1846e+05	2.6322	2.0583
8	1.0201e+05	2.4539	2.6809
9	7.9868e+04	2.4560	0.9629
10	8.6204e+04	2.1029	1.1531
11	8.3379e+04	5.2387	2.1405
12	6.5213e+04	1.9458	1.4666
13	8.5504e+04	2.9720	1.9898

COLOR FEATURE EXTRACTION

Color Histogram

TEXTURE FEATURE EXTRACTION

Gabor Filters

euclideanDistances | similarityValues | fileNam

1740x4 double

	1	2	3	4
1	0	0	0	0
2	0.2575	0.1687	0.1435	0.2055
3	0.2699	0.1678	0.1715	0.2199
4	0.3217	0.1371	0.1226	0.2251
5	0.2618	0.1857	0.1984	0.2276
6	0.2621	0.1871	0.1979	0.2278
7	0.2814	0.2037	0.1549	0.2279
8	0.2960	0.1772	0.1498	0.2284
9	0.2575	0.2059	0.1997	0.2298
10	0.2991	0.2015	0.1387	0.2315
11	0.2675	0.2181	0.1830	0.2323
12	0.2927	0.1702	0.1778	0.2337
13	0.2603	0.1601	0.2402	0.2342

Col4 = 0.5* col1 + 0.2*col2 + 0.3* col3

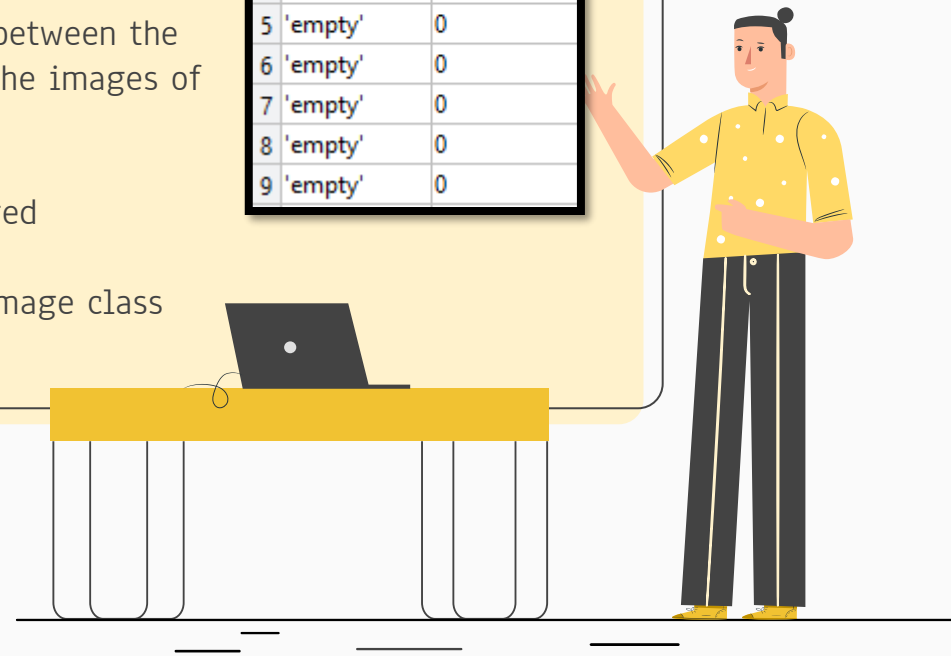
Similarity Values are calculated With range 0-1

KNN (K=9)

- Euclidean distance is calculated between the features of the input image and the images of the dataset.
- The nearest 9 images will be stored
- Voting is applied to choose the image class (animal type)

9x2 cell

	1	2
1	'tiger'	1
2	'horse'	6
3	'deer'	2
4	'empty'	0
5	'empty'	0
6	'empty'	0
7	'empty'	0
8	'empty'	0
9	'empty'	0



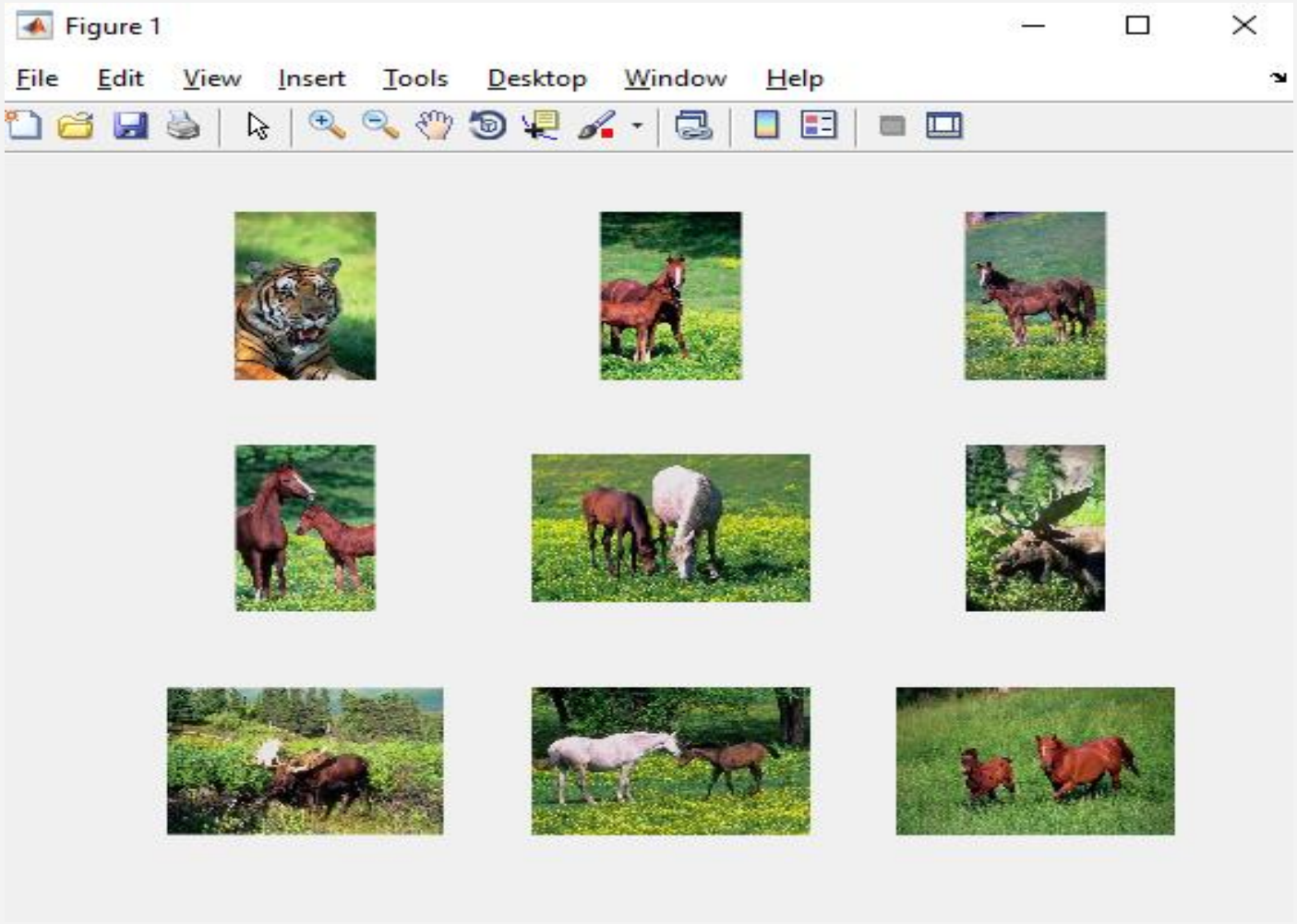


Figure 1
File Edit View Insert Tools Desktop Window Help