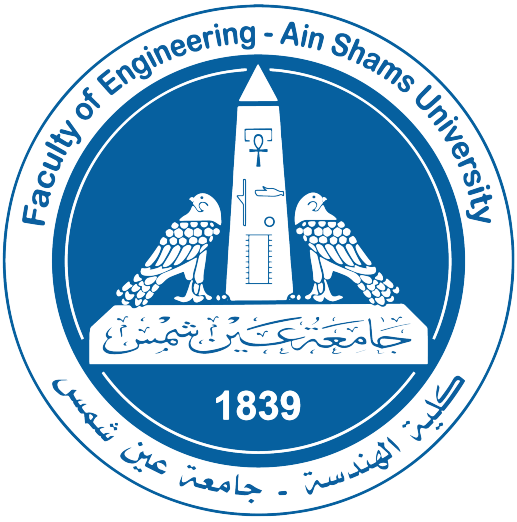

Image And Video Retreival System

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May 2021

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2.4.1 Images techniques

Mean color

This technique depends on computing the distance between images based on the color similarity between them. For RGB images the mean color of pixels is computed by finding the average color of the pixels in each channel separately then finding the average between the three values that result from each channel. To get the most similar images to the input image ,the difference between the mean color the input image and each image in the database is computed then we apply a reasonable threshold to execlude the images with large distance.

Mean color is one of the most techniques used in image retreival systems because it can be completed without regard to image size or orientation and it needs less computational power than other techniques.

Histogram

Histogram search algorithms , characterize an image by its color distribution or histogram. A histogram is nothing but a graph that represents all the colors and the level of their occurrence in an image irrespective of the type of the image.

Few basic properties about an image can be obtained from using a Histogram. It can be used to set a threshold for screening the images. The shape and the concentration of the colors in the histogram will be the same for similar objects even though they are of different colors.

Identifying objects in a grey scale image is the easiest one as the histogram is almost similar as the objects have the same colors for same objects. In order for identifying the objects in the images or generating the histogram the system has to obtain the array values of the frequency of occurrence of each color value -from 0 to 255- in the image.

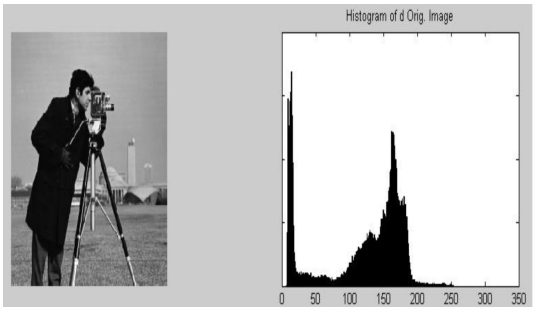


Figure 2.1: example for image histogram

To calculate the distance between two image histogram we calculate the sum of the smallest bin for each corresponding bins in the two histograms for input image I and the model image M normalized to the number of pixels in the model image.

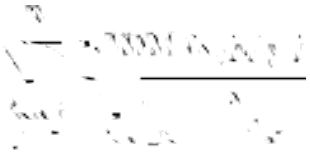


Figure 2.2: histogram distance equation

Color Layout

This technique is similar to histogram based technique except it solves the problem of getting results of images with a low histogram distance value but with a different contents.

In this algorithm we divide each image into 5x5 array of blocks so we get 25 sub-image then we calculate the histogram form each block. To find the distance between to images we get the distance between the histograms of each two corresponding block, then we calculate the total distance by finding the summation of all blocks distance.

$$d_{gridded\_square}(I,Q) = \Sigma\, d_{color}(C^I(g), C^Q(g))$$

-

Figure 2.3: color layout distance equation

2.4.2 Videos techniques

Chapter 3

Project planning

3.1 Task breakdown structure

3.2 Time plan and Gant chart

Firstly, we split all project team members into 3 basic groups in according to simplify the overall problem into smaller ones that we can deal with.

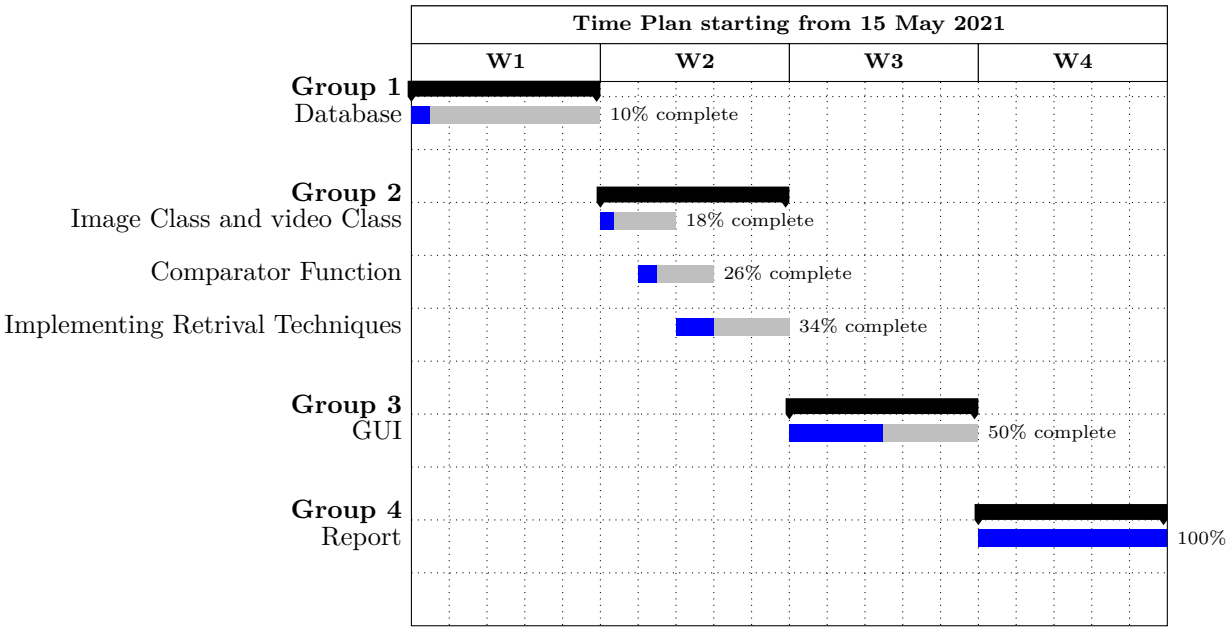
We decided to start with designing the database and find best modelling ways to fit our storage requirements.

The second group mission is to implement software functions that do the following:

1- extract data from videos/images. 2- store the different representations of input data into the database. 3- impelemnt the required techinques that fit project targets.

According to third group, it provides the project with a well-interactive graphical user interface.

Finally, the last group provides the project full documentation.



Gantt diagram for Multimedia project for a month