“IMAGE SEARCHING USING FEATURE EXTRACTION METHOD”

PROJECT REFERENCE NO. : 37S0101

COLLEGE : GOVERNMENT ENGINEERING COLLEGE, HASSAN
BRANCH : COMPUTER SCIENCE AND ENGINEERING
GUIDE : DR K.C RAVISHANKAR
STUDENTS : MANIKYA V
           NANDANA M G
           SHALINI U M
           ZEBA SIRAJ

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Introduction:

Image searching is a specialized data search used to find images. User may give a keyword, sketch or an image to image search engine for retrieving the relatively similar images from the image databases. The technique used for image retrieval is Content Based Image Retrieval(CBIR). CBIR is the problem of searching for digital images in large databases. Content based means that the search analyzes the content of the image rather than the metadata such as keywords, tags or descriptions associated with the image. The term content in this context refers to color, and texture.

Objectives:

The main objective of this project is to search the similar images from the database where it matches the given input image. Database is nothing but large collection of images and those images are extracted and the feature values of these extracted images are saved. The input image is also extracted to get the feature value. This feature value is compared with the values stored in database. If similarity matches, then that image will be displayed as output.
Methodology:

The required material to carry out this project is as follows: Hardware Requirements: intel core2, 256MB RAM or more, minimum of 10GB HDD.

Software Requirements: Windows xp/7/8 or linux, jdk 1.6 or 1.7, Java, Netbeans IDE 7.3.1

The working procedure of the project is as shown in the figure 1. First, the images are stored in the database and the preprocessing of the images are done. Features are extracted based on the color and texture. The extracted features indexed. Query image is given as input and its features are also extracted and matched with the database image features that are extracted. Similar images are found.

The color feature is extracted using the technique: RGB color space. The statistical values such as mean, standard deviation and skewness have been extracted.

The texture feature is extracted using the technique: Co-occurrence matrix. Extracting texture feature involves two phases. First phase includes edge detection and second phase includes texture extraction through co-occurrence matrix for the image which undergoes edge detection.

![Figure 1: Working Procedure](image.png)
Results and Conclusion:

Figure 2: Indexing phase  
Figure 3: Searching phase

The image searching is done using feature extraction method. Both color and texture features have been extracted. RGB color space has been used for color extraction. Edge detection technique is applied for texture method in order to get accurate result. Co-occurrence matrix is used for texture analysis. Image folder itself is used as database. The query image is compared with this database to get a result.

Scope for future work:

The shape feature extraction technique need to be added to get more accurate result.