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Searching Multimedia Contents from Computer System

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ABSTRACT: Multimedia Content Searching and Retrieval System can be defined as the process of finding interesting / useful contents and patterns from different media types such as text, images, audio and video. This multimedia type of data are not ordinarily accessible by basic queries but uses some techniques of content searching for gaining useful data of multimedia types. Here this multimedia content searching is perform from personal computer system. As the traditional search tool of our computer system have the facility of searching documents by entering their names only. That is, it accept only text data as input and perform search one file per time. So, to increase the efficiency of this searching, this paper proposes the method that search for all the files of different media i.e. text, images, audio and video which are present in the drive as one drive at a time. Along with this it also accept subpart of any multimedia type as input for giving the full file of that media type present in our personal computer system. This paper proposes both the methods for full content searching and subpart searching from computer more effectively and efficiently.

KEYWORDS: Multi-media Content Searching, Content Retrieval System, Features Extraction, Byte array conversion, content matching.

I. INTRODUCTION

There is tremendous growth and continuous explosion of multimedia information in today's society, all the users have large amount of their own data. This large amount of data is normally stored by them in their personal computers. Now, searching for information of interest is becoming increasingly difficult. The tremendous growth in the quantity of multimedia content is driving the need for more effective methods of storing, searching, and retrieving of this multimedia data [1]. Multimedia system is defined by computer controlled, integrated production, manipulation, presentation, storage and communication of independent information, which is encoded at least through a continuous and discrete media. All multimedia content consists of texts in some form. The text in the multimedia is used to communicate information to the user. Proper use of text and words in multimedia presentation will help the content developer to communicate the idea and message to the user [2].

Due to the extensive use of information technology and the recent developments in multimedia systems, the amount of multimedia data available to users has increased exponentially. Normally, Multimedia requires large amounts of storage and processing to gain useful information, so there is a need to properly index, store, and efficiently retrieve the user interested information from a file system [3]. With the proliferation of video data which is the combination of all the media types and growing requests for video applications are increasing. And with this there is simultaneous increase in the need of advanced technologies for indexing, filtering, searching, and mining the vast amount of video type of data.

Here, I are performing multimedia content searching from our computer system and not on the web. The existing computer system in which search tool is present does not support multimedia content searching. Also it does not have any arrangement to select particular file and any drives which one wants for the searching any type of the information. The main drawback of the existing system is that only the text information can be given as input for the searching [4]. But when one wants to search all related media files present in our computer one cannot get proper result as there is no such arrangement. Evidence reported that the general searching may not even help to improve the search quality for some multimedia content like image, audio, video [5]. So it is necessary to improve the system for searching all types of media contents from any computer system.

The technique that I have develop is able to retrieve particular file or data form this large storage by providing any media type of input. The develop method is simple but effective multimedia content searching technique, that also provide subpart searching on my interface and data is taken from the particular computer system. Here, I provide an inexpensive mechanism for user to search different multimedia content by giving subpart of any file which is present in



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a computer system and original file having full content is obtained after searching. All the files of different media types from particular directory of computer or any hard drive attach to our system can also be search by my designed interface.

As with the today's advanced world of using Computer, for searching any document with the traditional searching facility provided to its users have many drawbacks. With this, the search tool only search on the computer system and users have to face lots of irrelevancy and also there is problem of multimedia content searching [6]. The traditional search tool lacks the facility for providing the searching by accepting any multimedia type of content as input to its users. So to avoid all this irrelevancy and to make the searching more accurate and proper, I have propose the Multimedia Content Searching (MCS) from a Computer System [7]. This helps to search and get all multimedia contents as proper and useful result. The remaining paper is organized as, Section II gives the related work having some methods that perform Multimedia content searching. Section III gives the problem definition, for which I have to develop advance method for multimedia content searching. Section IV, contains working mechanism of my proposed system having working diagrams also. Section V, gives the implementation of my proposed and designed system. Finally, in section VI I concluded this paper.

II. RELATED WORK

A. Approaches for MCS:

The integration of storage and search techniques with standard data mining methods is required for multimedia database mining. Promising approaches [1] includes Construction of multimedia data cubes, the extraction of multiple features from multimedia data, and similarity based pattern searching.

1. *Multimedia data cube*: Primarily on the basis of visual content this facilitates multiple dimensional analyses of multimedia data. Multimedia Miner as a MDM system prototype has been designed and developed which includes the construction of a multimedia data cube that facilitates multiple dimensional analysis of multimedia data. The mining of multiple kinds of knowledge includes characterization (summarization), discrimination (comparison), classification, association and clustering, in image and video databases.

2. *Feature extraction*: To extract patterns and derive knowledge from large collections of images, audio and video it takes the information contained in multimedia data. Some features that are used include short-time energy, pause rate, zero-crossing rate, normalized harmonicity, fundamental frequency, frequency spectrum, bandwidth, spectral centroid, spectral roll-off frequency and band energy ratio [8].

3. *Similarity based pattern searching*: In multimedia retrieval and data mining Similarity search is a crucial task. It can be defined as searching for a set of similar objects to a given query object. It will help to extract useful knowledge having some particular pattern.

4. *Database approach*: This approach views multimedia data as structured. Manually or semi-automatically features are extracted. The features or attributes on unstructured data, entail a high level of abstraction. In the features the higher the level of abstraction, the lower the scope for ad-hoc queries.

B. Multimedia Content Searching and Retrieval:

As there are different types of data involved in the multimedia storage system each of the data type has their own different feature that have to be extracted. These different characteristics or features includes Color, edges, shape, timing constraints and texture are the common characteristics that are used to extract features for retrieving interesting contents. Feature extraction on these attributes may be performed at the different level of access [8]. It plays a vital role in the multimedia content searching and retrieval system as all the media types have their own feature associated with them that are mainly used to mine data from large storage system. An important issue with features extraction from multidimensional data is how the features should be integrated for searching and retrieval. Most multimodal analysis is usually performed based on the features, and the results are brought together at a later stage to arrive at the final decision about the applications input data. Although this is a simpler approach, we lose valuable information about the

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multimedia events or objects present in the data because, by processing separately, we discard the inherent associations between different modalities. Another approach for combining features is to represent features from all modalities together as components of a high-dimensional vector for further processing. The content searching and retrieval through this approach is known as cross-modal analysis because such an approach allows the discovery of semantic associations between different modalities [9].

III. PROBLEM DEFINITION

As for now, the text can be searched in the files. Most of the operating systems give this facility. But other multimedia contents like Audio, Video, Image, etc. cannot be searched. The reasons for this inability can be termed as follows:

- There are multiple formats for Audio, Video, and Image. Searching either the content or the file into large and different format is necessary.
- Searching of proper Video, Audio, Image data present in some other format needs a lot of computing time.
- Tools for searching these useful contents are rare.
- Accuracy of such tools is not 100%.
- Searching and displaying result accurately is difficult task.
- Searching, Conversion and displaying of multimedia content together is a lot tedious and time consuming work.

The existing computer system in which search tool is present does not support multimedia content searching. Also it does not have any arrangement to select particular file and any drives which I want for the searching any type of the information. The main drawback of the existing system is that only the text information can be given as input for the searching. But when I want to search all related different media files present in a computer system then it cannot be performed as there is no such arrangement to give any file as input. So it is necessary to improve the system for searching all types of media contents from any computer system.

IV. WORKING MECHANISM

Here I have design data flow diagram of my proposed system, in this how User is performing Multimedia content searching is presented. Here, in the first flow diagram working is shown for getting complete media files as output (as shown in the figure 1) for that I have to select which type of media data one want at the particular time and in the second step he have to select the drive from which one want all the files of selected media. With this simple working, all the files from the selected drive of the particular media type are presented as output.

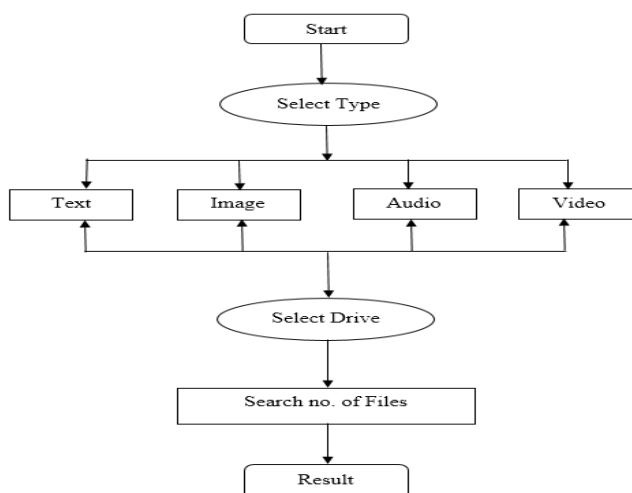


Figure 1: Search all files of one media type

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As stated earlier, in this paper I have proposed the method for searching complete multimedia file by giving its sub-part as input. The working for this is as shown in the figure 2 below. My developed mechanism is much simple and the procedure is also similar for both types of searching. Here, for sub-part searching the process is the same as one has to select media type of subpart file then select drive from which one has to perform search, only the change is that, one has to select and submit the subpart of that media file. It will compare all the files present in the selected drive and if the file is present it will give the properly matched file as output. Otherwise one has to select another drive from the computer.

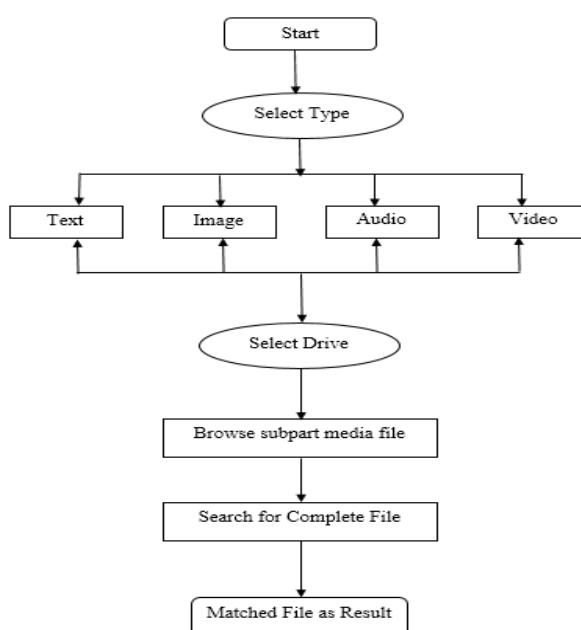


Figure 2: Search file by giving subpart as input

V. IMPLEMENTATION OF PROPOSED SYSTEM

I have developed the model for multimedia content searching from any personal computer system. In this one is able to search all types of media files like Text, Images, Audio and Video. The front end I have developed by using the JAVA programming language and displays the user friendly interface as shown in the figure 3 below. The same interface is able to perform both types of searching as full content searching and searching by giving sub-part as input.

The mechanism developed is able to select the type of media and the drive from the computer system. The main page shows the user interface of the project. As searching is done in two ways so 'Type1', 'Type2' is shown here, where one has to select the media type. Drive button is also given in which all the drives present in a particular computer system is obtained. The upper dropdown list for drive is selected for full searching and the lower list of drive is for searching as subpart. The button 'search No. of files' is used to search all the files present in selected drive. For my sub-part searching mechanism, as it accepts direct particular media file as input, this 'Browse' button is used to browse subpart from the drive. The button 'Search As Subpart' is used to obtain original file match with the subpart file. The big white panel is used to show images / logos of the file obtained after searching. The small pink panel given in the interface contains the path of the media file obtained in the white panel. Finally, the 'Clear' button is used to clear result obtained after both types of searching.

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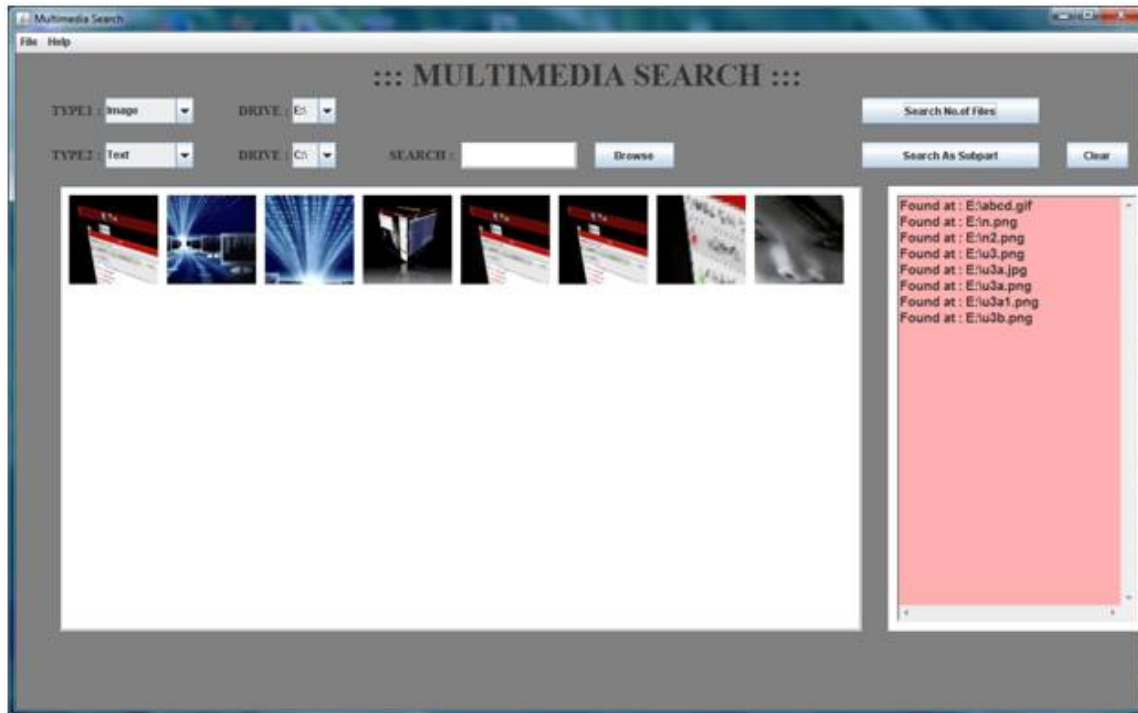


Figure 3: Main interface along with Image searching Result

The figure 3 shows my main interface having all the functionality as explained in the above paragraph. Along with this figure 3 shows the example of image searching result. Here, the TYPE1 is selected as Image media type and 'E:\' drive is selected, it will gives the result as all the images present in the E drive. In the image panel all images are shown and in text panel name of all the image files are displayed.

Our functionality of searching as sub-part is also done with the same interface. This sub-part searching for image media is shown in the figure 4. In this, for searching images by giving its sub-part as input we have to select TYPE2 as image media. For searching from H drive, we have to select DRIVE as 'H:\' drive. Then we have to browse the sub-part image from where it is stored. Here, we have select sub-part as 'H:A1.png'. Now, by clicking on the button 'Search As Subpart', it will scan complete 'H:\' drive and if the sub-part file gets match with any other file present in 'H:\' drive' containing that subpart, in the image panel the match image file is shown as result. In the text panel, the comparison of our inputted sub-part and other image files present in the selected drive is shown. The same result will be obtained for other media files as text, audio and video for both complete searching and sub-part searching with the same functionality and using same interface.

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Figure 4: Result of Image searching as Sub-Part

VI. CONCLUSION

Multimedia Content Search (MCS) has illustrated its effectiveness by improving the quality of search services on the computer system. By using this one can search by giving multimedia content like image, audio, video as input and accurate results of searching are obtained. The develop interface provides properly matched file as output. It is efficient than the previous search tool present. The result shows that my proposed framework is useful for all users and makes the multimedia content searching more User friendly, efficient, Correct and Cost effective. In Future Work, I will try to implement the content search by using animation. I can improve time efficiency for searching audio and video file for both full drive searching and for searching full file by providing subpart as input. I can also add some security features like password or any other kind of features that resist my software used by any unauthorized person. Some more user friendly features along with more GUI interfacing will be added to this, which gives computer searching more effective by using my implemented search tool.

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