

File Annotation On Mobile Devices

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Abstract

The rapid growth in mobile technologies has made users to generate and store images on mobile devices. But it has become a challenging task for users to perform efficiently and effectively search for files of interest in a mobile environment that involves a large number of mobile nodes. To improve the searching technique at low end mobile device we use semantic file annotation which provides automatic annotation of images according to their spatial, temporal and social contexts. The file annotation and retrieval technique proposed in this dissertation automatically annotates the images with their basic attributes like event, time, person, location, etc by extracting them from the underlying operating system of the device. The file search may be done on mobile itself or on the mobile or device which is connected in Personal Area Network (PAN).

1. Introduction

Annotation is the concept to associate semantics with a file. Today the mobile technology has rapidly increased and come with the huge storage capacity and many advanced features. But the Importance of mobile phones cannot be neglected which plays a vital role to cope with our daily life [1]. Shooting new pictures gets easier with the mobile camera phone and the storage costs in these devices has decreased enormously [2].

The approach focused on resolving identity of subjects in an image using mobile device connectivity. Usually when image is capture from camera phone, it gets stored with the filename as image001, image002. To perform a search with such filenames and to retrieve those image files is a tedious work. To improve the searching technique semantic file annotation is implemented which annotates the image and retrieves the required file. This technique extracts the basic image attributes from the underlying file system of the device, and uses attribute information as the annotation

tags for the corresponding file and parse it using k-XML to store in XML structure.

The images are annotated automatically on a device. In addition to the basic attributes, additional keywords can also be added to annotate any image. The XML document is then searched for the required field to retrieve any image in the search. The framework provides a variety of options to search for a required file on the device itself or even on the other connected devices, if authorized.

The stored meta-data of files in an Extensible Mark-up Language (XML) format, XML format can also be viewed as a browsing list on the mobile screen. At the same time, it also allows users to edit or refresh the meta-data at any time. The proposed work is implemented in J2ME which can be used to search for a required file based on its name.

2. Literature review

Windson Viana, J.B.Filho in paper [2] focused on Context Photo Ontology. It is a use of annotation allows the development of better organization, retrieval and visualization processes for personal image management. These structures may be attribute-value pairs inserted in the header of image files and the Resource Description Framework/Web Ontology Language (RDF/OWL) ontologies. In the context of the Semantic Web, the use of ontologies for annotation representation is more suitable for making the content machine understandable.

Craig A., Soules, Gregory R. Ganger [3] found as the data set associated with a user grows, organizing that information becomes more difficult. Although hierarchies have several useful aspects, they do not scale. A more flexible, attribute-based naming scheme is needed to effectively manage large personal data sets. The semantic file system provides a way to assign a generic category, value pairings to files, increasing

the scope of their namespace. These attributes are assigned either by user input or by file content analysis.

Burra Gopal, Udi Manber [4] presented a new file system that combines name-based and content-based access to files at the same time. Our design allows both methods to be used at any time, thus preserving the benefits of both. Users can create their own name spaces based on queries, on explicit path names, or on any combination interleaved arbitrarily. All regular file operations such as adding, deleting, or moving files are supported in the same way, and in addition, query consistency is maintained and adapted to what the user is manually doing. One can add, remove, or move results of queries and in general handle them as if they were regular files.

Fergal Monaghan, David O'Sullivan [5] express that an approach focused on resolving identity of subjects in a photo using mobile device connectivity, Web services and social network ontologies is presented in this paper. A framework is described in which mobile device sensors, Web services and ontologies are combined to provide meaningful photo annotation metadata that can be used to recall photos from the Web. Useful metadata can be gleaned from the environment at the time of capture and further information inferred from available Web services.

Andreas Girgensohn, John Adcock [6] in his paper expressed that users could easily collect thousands of photos. Here the goal is to make organizing and browsing photos simple and quick, while retaining scalability to large collections. So this application

automatically divides photos into meaningful events and that supports navigating, sorting, and filtering photos by categories.

Pratibha Singh, Dipesh Sharma [7] implemented, how to make communication over bluetooth . Bluetooth is used here to communicate to other Bluetooth-enabled devices in PAN. In this sense, Bluetooth is like any other communication protocol that you use every day. Bluetooth uses a client server architecture in which one who initiates the connection is the client, and the one who receives the connection is the server. Bluetooth is a short-range universal wireless connectivity standard for electronic appliances and mobile devices.

3. Proposed System Architecture

The aim of this paper is to improve a searching technique and which should be capable of retrieving files on low-end mobile and portable devices with minimum effort required by its users. The proposed system in figure 1, fixes the personal area network (PAN) for file searching. Now we add the keyword for file searching based on an already annotated file. If any file in PAN is not annotated then we add descriptions (annotation) to all the files. The file can be an image, audio, video etc. The annotated file information will be saved in XML and XML also helps to communicate in PAN environment, through which we can be able to retrieve the file.

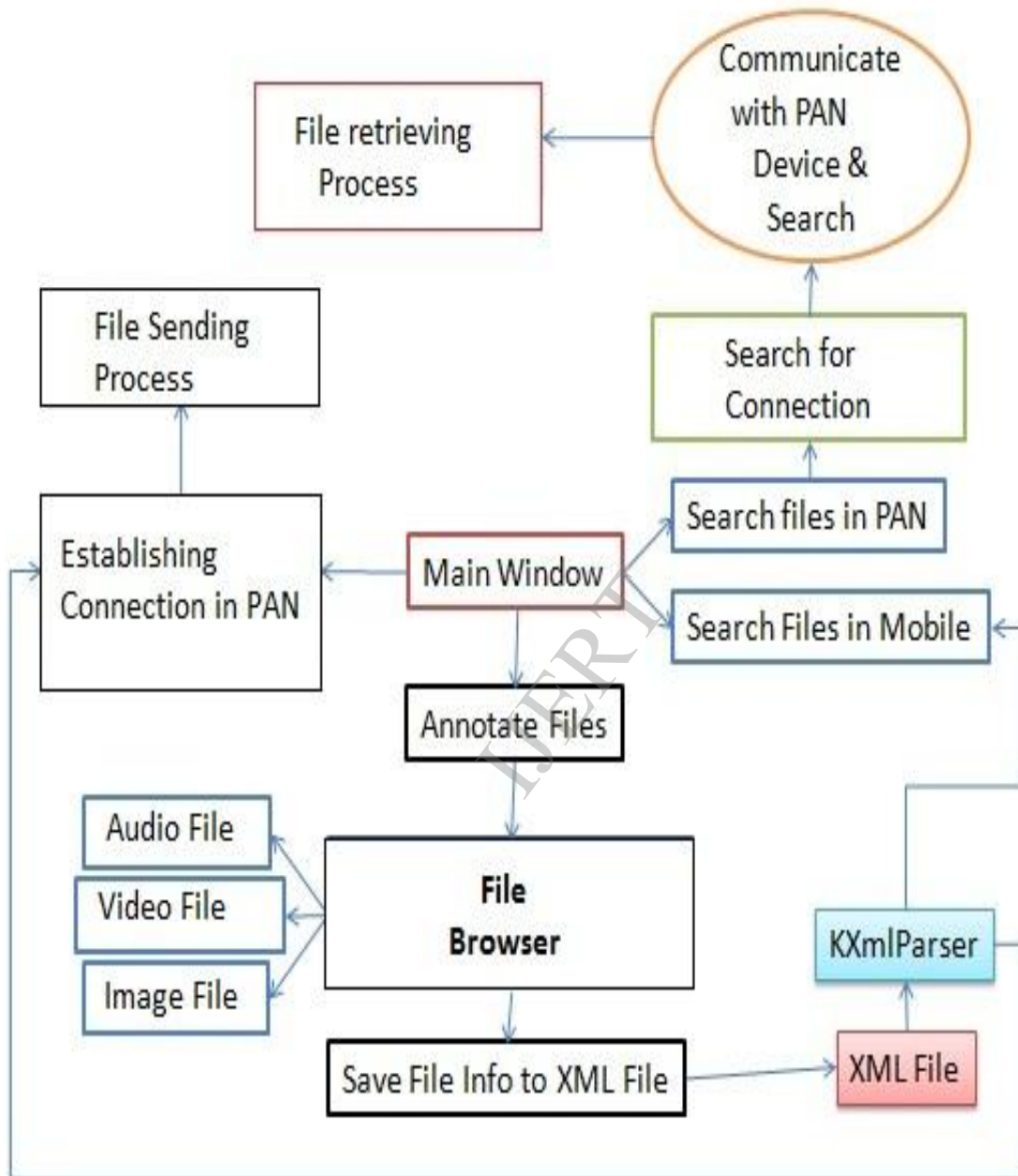


Figure 1: Proposed System Architecture

4. Algorithm

The algorithm for file annotation to files using low end mobile devices

1. Analyse and limit low end mobile devices, in terms of processing, input and output performance.
2. Design the proposed work for File annotation and retrieval framework (FARM) using XML and k-XML parsers.
3. Implement FARM by developing several MIDlet's using J2ME for file annotation and retrieval.
4. Perform Performance evaluation and analysis based on file searching tests using the FARM proposed work.
5. Design a generic ontology to define the general keywords using OWL and APIs.
6. Implement the Semantic FARM framework, which uses the generic ontology in file searching and was developed by extending the search module of FARM.
7. Evaluate the performance of Semantic FARM from a number of perspectives in comparison to traditional mobile file systems and enhance alternatives

5. Conclusion

Here our proposed work is to improve the semantic file annotation and file retrieving in PAN at low end mobile devices. In PAN we enhance the searching method to retrieve files based on keywords

6. References

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