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Distributed Media Sharing

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Abstract— **This application proposes a mobile distributed file system: mobiDFS based on the complex distributed architecture** [1]**. The generic idea of mobiDFS is to reduce computing in mobile device by transferring computing requirement to server. Peer-to-Peer (P2P)** [2][3] **is an efficient file sharing method. By using server-and-client mode, this goal can be reached. Mobile device, such as Android equipped smart phone, tablets, and pads, have multiple communication interfaces which contain Wi-Fi.. This file system will choose the optimal way to transfer files when requested in order to reduce energy consuming. The implementation of this system allows users connect to the whole distributed file system directories without considering the factor of mobile device hardware platform. In addition, User privileges, which separate different users in the file system, are taken into consideration.**

Keywords:- MobiDFS, Peer-to-Peer (P2P)

I. INTRODUCTION

As an evident result of the rapid development in communication technology, huge sizes of content files are available nowadays over Internet. Different methods have been proposed to distribute this content among users across the world using rapid, efficient and secured methods. Client-server communication mode is the traditional data distribution method of files over Internet such as FTP (File transfer Protocol) like protocols that involve the different users to retrieve desired data from a single server [1]. This is important for the client side where disk space is limited, and for the server, on the other side, having files centralized makes the process of updating data faster and easier. However, the main problem raised from the central server is the centralization of information, which makes it susceptible to centralized control. Besides, server will form a single point of failure in the system and will increase system dispose to Denial of Service (DOS) security problem. As a solution to cope with these drawbacks, peer-to-peer appears. The core contribution of the paper is a set of fresh perspectives, which lead us in turn to novel principles and patterns for middleware and subsequently to new styles of platform. These perspectives include a move to emergent middleware, seeking flexible meta-structures for distributed systems, and a step away from generic to domain-specific technologies.

II. PROPOSED SYSTEM

A. *System architecture*

The architecture is based on a Peer-to-Peer model. A peer acts as a client as well as a server depending on the action it's performing. Several peers are connected with each other in a network. The implementation of this system allows users (peers) to connect to the whole distributed file system directories without considering the factor of mobile device hardware platform. In addition, User privileges, which separate different users in the file system, are taken into consideration. Rather than storing data on a centralized server, the data is being stored on all the peers in the network, thus providing a more resilient model for storing of data.

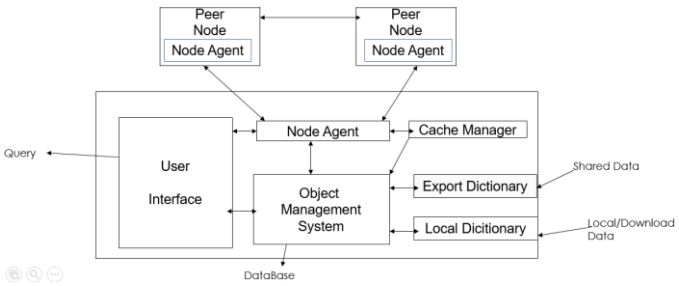

Fig. 1 : System Architecture

1. *User Registration*

User can register himself/herself on the application. After successful registration, user can upload a file or download files uploaded by other users.

2. *Data Upload*

User can upload data without encryption or using encryption using encryption key. So only valid to trusted users can download and decrypt the encrypted file.

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3. Data Downloading

User can download the shared file. If the data is encrypted then the user need to ask data owner for encryption key. If the data owner accept the request came from downloader then the data is decrypted by application itself and downloader gets the data in original form.

4. Encryption Algorithm

Least Significant Bit (LSB) algorithm is being used here to encrypt and to decrypt the data.

Following flow charts represent the LSB algorithm.

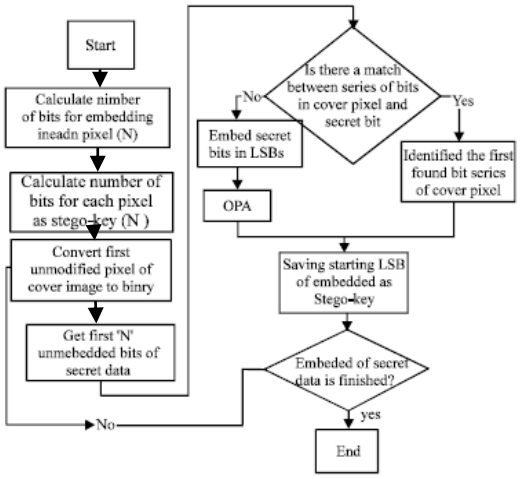

Fig 2: **LSB Insertion Architecture**

B. Maintaining the Integrity of the Specifications

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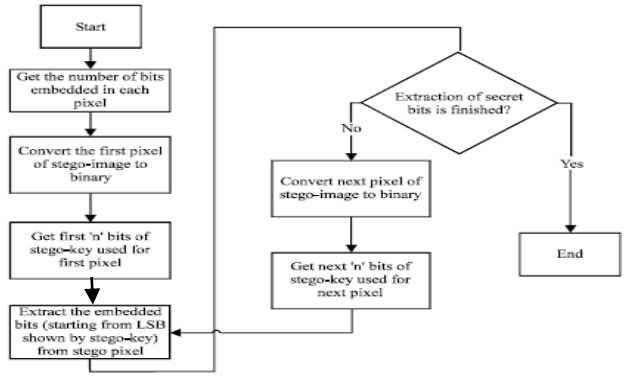

Fig 3: **LSB Extraction Architecture**

III. RESULTS OBTAINED

The main purpose of the system is to provide a platform for sharing of media over intranet.

The systems GUI is designed in the android studio. The GUI design is in XML. Core technologies used is Java. The database used here is SQLite. The overall development was done in the Android Studio IDE.

Fig. 3: User Registration

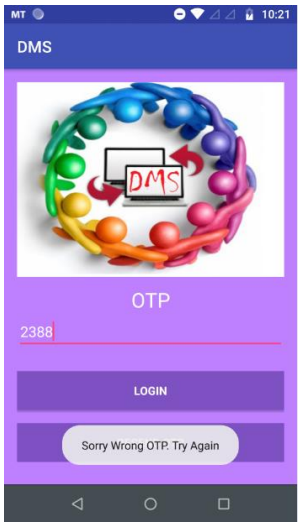

Fig. 4 : OTP verification

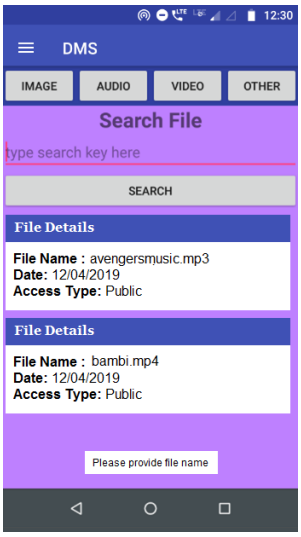

Fig. 5: Main screen (Browsing)

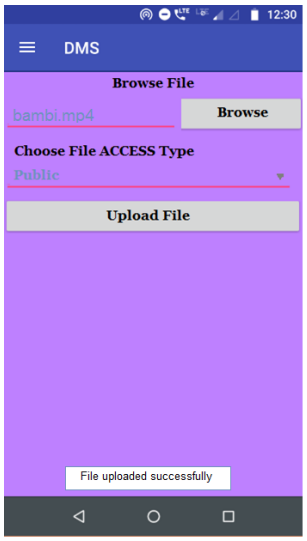

Fig. 6 : Upload a file (Private mode)

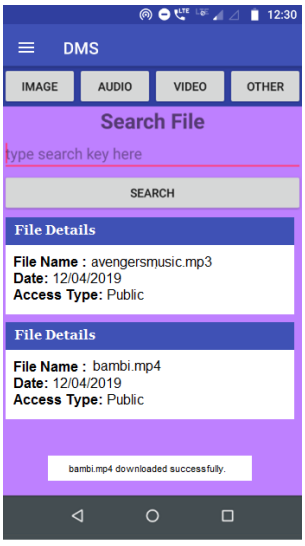

Fig. 7: Downloading a public file

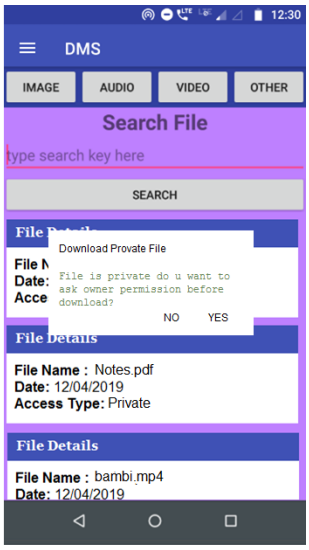

Fig. 8: Downloading a private file

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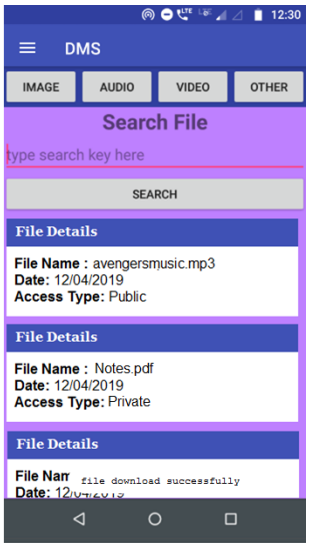

Fig. 9 : After the private file is downloaded

IV. CONCLUSION

The proposed model for a file transfer application for the Android based mobile devices using WI-FI network (intranet) has been achieved. This application allows users to send a file or data (i.e. video, audio, images, text, and files) to the other android device in a secure manner. Application is able to filter out data tagged with user-defined labels (such as public, confidential). In this way, applications can still access the data without reaching for user's sensitive information. This application can be useful in many real time events and applications for an enhanced user support.

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