FILE SHARING & CHAT ANDROID APPLICATION

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ABSTRACT

This paper presents an android application to share different types of files with other android devices using WIFI.

INTRODUCTION

The File Transfer Application is a simple android application that can be used to transfer your files from one android device to another android device in close proximity. You can also chat remotely with the device that you are connected with. The idea behind this application is to make transfers easy and fast for people having internet issues.
This app solves the problem of transferring files from one android device to another android device without the internet. It eliminates the old Bluetooth transfers and transfers files using Wi-Fi which provides much faster data transfers. You can share music, images, documents, etc. Without any mobile data usage.

II. STUDY OF PREVIOUS SYSTEM

1. *Files By Google*

   It is a file management app that also provides features that include sharing files with different android devices, without data. It is developed using JAVA Programming language. It uses Wi-Fi connection to share files and uses WPA2 encryption.

2. *Xender*

   A popular file sharing application that is developed by Xender Technologies. That uses similar technology as Google files helps you share file with any device you want.

MOTIVATION

The reason behind choosing this as our project was because, we were facing difficulties sharing our files from our android device to our PC's of course we have data cables to do that but we all know we all live in an age of wireless technology. Hence we decided to build an application that can make this happen but at the current time we did not possess enough knowledge as well as experience to make it happen so we settled to make an android application that can transfer files from one android device to other for starters.

TECHNOLOGY

This application works on Client-Server networking technology.

It is a type of networking where there is no need for a centralized server, each node works both **as server or client.**

The client device request for the files from server device (or vice-versa), by establishing TCP or UDP connections. Each node has a particular ID assigned, by which they can identify internally.
When one device makes a request, it is possible that multiple device have the copy of that requested object. Now the problem is how to get the IP addresses of all those devices. This is decided by the underlying architecture supported by the WIFI systems. By means of one of these methods, the client can get to know about all the device which have requested object/file and the file transfer takes place directly between these two devices.

IMPLEMENTATION STRATERGY

1. INTIAL SETUP

1. Before using the services provided by Android device, we need to ask for permissions.
   - ACCESS_WIFI_STATE
   - CHANGE_NETWROK_STATE
   - ACCESS_FINE_LOCATION
2. Enabling and disabling WIFI, HOTSPOT and Location's state in onClickListeners().
3. Accessing device's external storage via Intent. And obtaining the path of the selected file.

2. *SERVER & CLIENT SETUP*

1. Once we are able to access different services and external storage, we need setup the client and server for communication between two devices.
2. Create a ServerSocket. The socket waits for a connection with the client at a specified port, this happens in the background.
3. Create a client socket. The client uses IP address and port of the server socket to connect to the server device.
4. Client need to request server for initial connection.

3. *SERVER'S IP ADDRESS*

1. To send the connection request, the client must know the IP address and port number of the server device.
2. To obtain the IP address, call getLocalIpAddress() in onCreate() of server class.

4. TRANSFER DATA

1. Send the intended data from client to server using the server socket, it can be sent with byte streams.

2. Carry out any action with the data, such as presenting it to the user or saving it to the file.

PROPOSED SYSTEM

A. Application

The application has a simple UI, at every step when an activity is being performed there are a number of toasts messages that keep you updated about what's happening.

B. Reason for choosing Android.

The reason for choosing android over any other systems is that android rules the app market and there is also a larger audience to cater to hence android development seemed to be the best path for this type of application.
Also it is easy to use and the documentation is really detailed and helpful from the developer's point of view.

C. Target audience for the application.

This application is mainly for people who frequently need to transfer their files now and then between the devices and people who want to chat remotely.

D. Reason for selecting JAVA.

There are a number of reasons for choosing JAVA as the choice for the development of our application the major reasons being:

1. *API and libraries*
   The API selection and JAVA library selection is huge hence it very useful if you are targeting a particular version of android.

2. *Robust nature:*

   The robust set of tools not only help you in coding but also offers you influencing debugging capability, which is essential for real-world development.

3. *Object Oriented Language*

   Java being an object oriented language has it usual oops benefits like inheritance, polymorphism etc. This concepts makes the task easier.

E. Why Android Studio?

The main reason for choosing Android studio as the platform to develop our application was because

Android Studio uses Gradle as the foundation of the build system, with more Android-specific capabilities provided by the Android Gradle Plugin.

The UI is very easy to design, the drag and drop feature of Android studio is very useful.

Use inline debugging to enhance your code walk-throughs in the debugger view with inline verification of references, expressions, and variable values. Inline debug information includes: inline variable and method values, referring objects that reference a selected object.

SCOPE AND FUTURE DEVELOPMENTS

Till know the application only supports android to android transfer , currently the app can send and receive text data from one another, but no image, audio or pdf transfer are supported by the application currently we aim to add the ability to transfer files from one device to any other device in future.

Once the PC transfers are enabled it would be really great to have cross-platform transfers as well.

CONCLUSION

The paper mentions how our application works and what it is capable of doing. It provides detailed insight into what technology and what kind of API's we are using to accomplish with our application.
Till now we have learned a lot about how android works and this project has been quite a learning experience for both of us, and we'll try to learn as much as possible from this project.

REFERENCES

https://www.geeksforgeeks.org/socket-programming-in-java/

https://developer.android.com/guide/components/intents-common

https://www.tutorialspoint.com/android/android_wi_fi.htm

https://www.ibm.com/support/knowledgecenter/ssw_ibm_i_71/rzab6/howdosockets.htm

https://www.xicom.biz/blog/why-should-you-choose-java-programming-language-for-mobile-application-in-2019/

https://developer.android.com/guide/topics/permissions/overview

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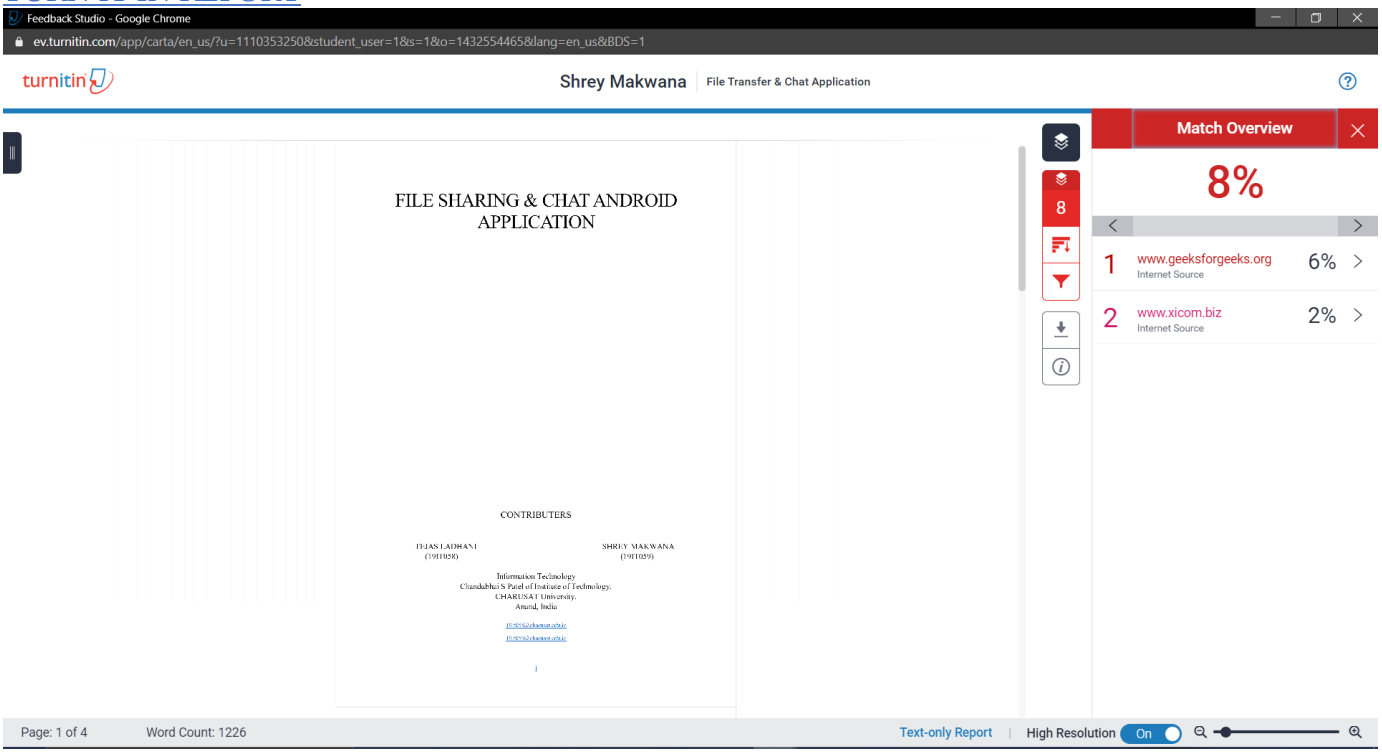

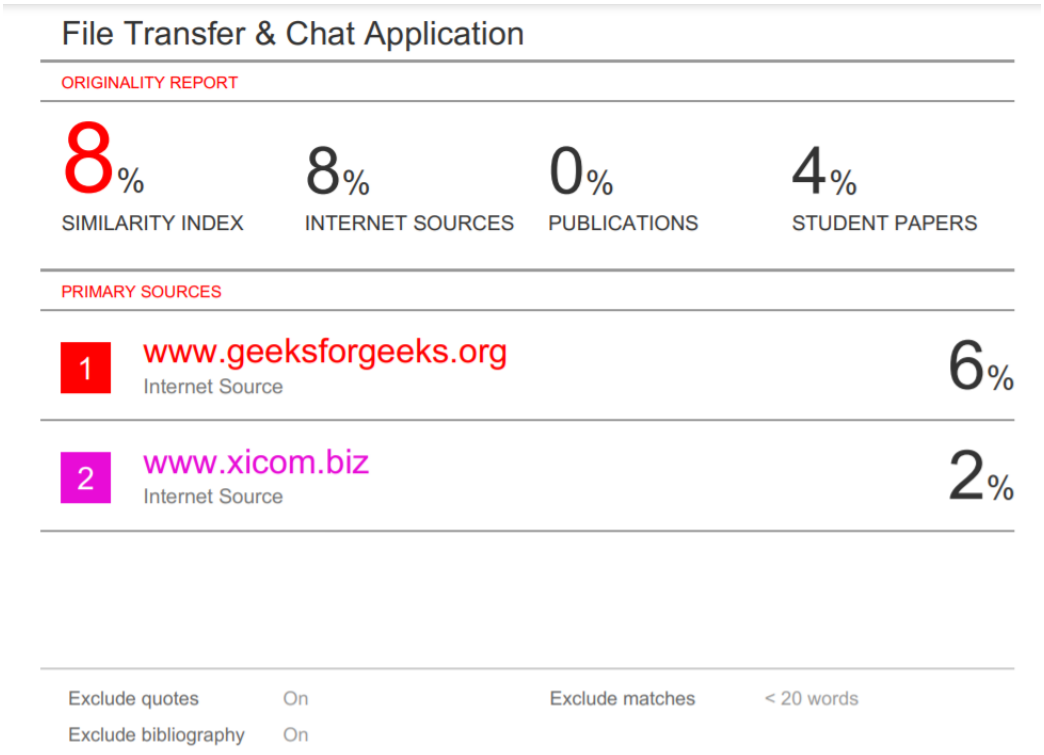

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