SYNOPSIS

<Share-Ops>

File sharing Application for Android

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The Problem Statement

Often in college or university and also in our working place, we need to share important files with others. Sharing video files, photos, eBooks, PDF, or DOC files become essential sometimes. But often, Wi-Fi connection or mobile data is not available around us so that we can share those files while being online.

We all know about the Internet connection in India, India boasts many of the world's top IT companies, tech entrepreneurs and digital start-ups. Yet, it's also home to nearly 900 million people who do not have access to the internet.

Reason for selecting this Project

With majority of our population being offline and many with the unstable and not so very high-speed Internet, there must be a way or a tool so that at least they are able to share files between their own or with someone else’s devices seamlessly and without any hassle

Objective of the project

In our day-to-day life data is the most important thing. sharing of data helps to save our time and internet.

Data can be shared in many ways (using Internet, cables, USB, portable storage dive) but in many forms the user is also occupied but with the help of our project, data can be shared wirelessly without consuming internet and without much effort of user.

As our life becomes more and more progressive, we get less time to do work manually according to our objective people will be able to share data on the go either while travelling or while doing some work without any interruption.

Literature Survey / Feasibility Study

In this project, we are trying to build a fast file sharing system which include detection, data transmission. Our problem can be simply described as that when 2 mobile devices encounter with each other, one need to detect quickly whether the other one has the file it need and furthermore, we can divide files into chunks and use some algorithm to identify the existence of the chunks. However, in the real case, it could be multiple devices share the files at the same time.

Future Scope

As in the near future data will also become more and more important so eventually data sharing will also become part of our daily life.

As the technology keeps growing data sharing wirelessly will also become more and efficient and fast

Sharing data via wireless technology will be very efficient as people didn't need to be worry about effect of external means, for instance consider the below scenarios -

- While using data transfer cables there is always a concern of interruption such as cable damage, unplugging of cable.
- While using data storage devices there is a threat of damaging the device.

Methodology

There four main part of the work. They are Peer search, Query, Protocol and Data transmission. We will find peers via Wi-Fi direct. The Wi-Fi direct has many limitations, like only in android 4.0 device, and all the devices need open all the time to wait for connection. Since it is convenient, we will use it to simplify the work, and we will focus on developing the protocols and algorithm. Before we search the peers, we need do some initialization work, such as read file list and set up data structure.

After detecting the peers we need, we can connect with them and establish socket communication. Then we need use some protocols to check the files needed and availability and the exact chunk needed and availability.

All this work will be done in the query process. Hash tables and Bloom filter will be used to detect whether an element is a member of a set. The last part is data transmission. After all the work set, we can transmit the data based on the requirement. Then the file status will be updated in the file list.

Hardware & Software to be used

Hardware -	As such no external hardware is required in this project, the only thing we need is a Laptop with decent specification which can run Android Studio in it. (SSD recommended for smooth functioning)
Software -	Android Studio

What contribution would the project make and where?

This project can help many lives and help many people to escape from the hassle of carrying wires everywhere and in addition to that

- With the help of this project data sharing will become more advance, efficient, fast.
- This will vastly effect the lives of people who shares large amount of data from one person to another (Mostly young generation which transfer data)
- This will help to save time and internet (instead of downloading just share it)

Scope for extension into a major project.

It is a full-size project which can be used to share data between different operating systems.

It may have some scope if we can use other person device under some restrictions (like team viewer) then this can evolve into major project.

In addition to that if the application becomes popular enough we can even build a desktop application so that people can even transfer their files

Conclusion

As currently there are many sharing applications on app store but mostly are made by foreign country and due to recent events it is safe to think these problems can occur again in the near future so it is better to have a simple application made in our country and promote make in India.