

Group Broadcast

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Abstract: Group Broadcast is Android App in which leader can share PDF& PPT along with photos and documents and the group leader's device acts as the Wi-Fi access point connecting all the other devices together.

In this Application the group leader has to choose "create group" option which automatically turns on the Wi-Fi access point. All other devices joining a Group Broadcast session will recognize the access point the same way as any other Wi-Fi network. When the program launch, choose "Join Group" instead of "Create Group." The program then automatically searches for available Wi-Fi networks and connects when it finds one called "Group Broadcast". Once you've joined a group, a list of possible information to share pictures, documents or paint and multiple files will be available and can be shared in one session.

Keywords: Group, share, Wi-Fi, access point etc.

1. GENERAL INTRODUCTION

Group Broadcast is Android Application which is used for educational and training purpose by sharing the documents like PDF, PPT in the Wi-Fi network at the instance of time to multiple Android devices, The application can share the photos, images in the connected network. Drawing tool also provided in this application so the image or picture drawn by sender is viewed by all receiver in the Wi-Fi connected network at the same time. In some scenario's where not possible to have black board or projector then it can easily share the information or documents in short time with faster data transfer rate at instance of time, So concepts like study outside classroom are possible. Group Broadcast makes sharing data across mobile devices easier than ever before for example whether it's sharing photos with your friends at a coffee shop or making a business presentation. In these days every one having a Smartphone so sharing of information and documents is easily done at anywhere and everywhere just by creating a group & sharing of data. This application can create a Wi-Fi network in which multiple Android

devices can get connect and create a group, So in this group there is one sender & multiple receiver, all are connected in a Wi-Fi network, When sender want to broadcast the data to other android devices then it create the group it first launch the program, it chooses "Create Group" instead of "Join Group." the program then automatically searches for available Wi-Fi hotspot devices then it gets the list of portable hotspot devices it connect to one of the device, all receiver also get connect to the portable hotspot device, portable hotspot is used as anyone's phone as a modem, when sender and all receiver get connected to the portable hotspot device then the data, files, images or drawings which ever data running on sender device all data are broadcasted to all receivers in the network at the instance of time..

1.1 Literature Review

In Samsung Galaxy S4, Group play app uses NFC for data sharing. Near Field Communication (NFC) is a set of short-range wireless technologies, typically requiring a distance of 5 cm or less to initiate a connection. NFC allows you to share small payloads of data between an NFC tag and an Android-powered device, or between two Android-powered devices. NFC standards cover communications protocols and data exchange formats, and are based on existing radio-frequency identification (RFID). It fits the criteria for being considered a personal area network. This app only support to high cost android devices.

Group Play in galaxy S4 can share music and games along with photos and documents, and the group leader's device acts as the Wi-Fi access point connecting all the other devices. That means user doesn't have connected to any Wi-Fi or cellular data network. One of the Disadvantage of the group play is you cannot connect Galaxy S4 with other devices using this application. This may disappoint some other Android user that they cannot share the data or music.

The above drawback of this app is removed in this application. Group Broadcast Application is applicable

to all android devices (Wi-Fi) which was not feasible earlier. So it is very useful, for broadcasting files such as PDF, PPT, Images etc., at very low cost.

The following are the functionalities of this application

- Sharing PDF.
- Sharing PPT.
- Sharing Images.
- Sharing Paint.

1.2 Android

Android is a Mobile Operating System Developed by Google. It is used by several Smartphone's, such as the Motorola Droid, the Samsung Galaxy, and Google's own Nexus One. The Android operating system (OS) is based on the open Linux kernel. Unlike the iPhone OS, Android is open source, meaning developers can modify and customize the OS for each phone. Therefore, different Android-based phones may have different graphical user interfaces GUIs even though they use the same OS.

Features of Android

Powerful, simple, and beautiful

Millions of people use Android because it's so powerful yet still so easy. The home screen, apps, and widgets are simple to use right out of the box, but completely customizable. With Android, anyone can create a unique mobile experience that's just right for you.

Your stuff, always available, no wires needed

When user sign in to phone or tablet with Google, user can access all of Google stuff (contacts, photos, Gmail and more) quickly and easily. Can also enjoy all of favourite entertainment across Android devices and even a computer have no wires, no synchronizing.

Play everywhere you go

Google Play is the easiest way to enjoy all favourites: more than 700,000 apps and games, millions of songs, thousands of movies and TV shows, the world's largest collection of eBooks, and a growing selection of magazines. With Google Play, there's no wires, no hassle, just pure entertainment. User can now read, listen and watch anywhere he want on his tablet, phone, or in any browser at play.google.com.

2. OBJECTIVE

After analyzing the literature review the idea came into existence to develop an Android application that will

work same like as group play and it will be available for all other android devices for sharing the data in the connected Wi-Fi Group.

2.1 Purpose

The aim of this system is to build an android application which creates a Wi-Fi network using the access point as a portable hotspot. The purpose of creating Wi-Fi network is for broadcasting different kind of files to all android devices which are in the connected network. In the network master device sends data to access point then data transferred to all receivers connected to the access point in the network.

2.2 Proposed Work

The proposed System has following features:

- Broadcasting of different Files.
- Synchronization.
- Centralized Controlling of File.

3. METHODOLOGY

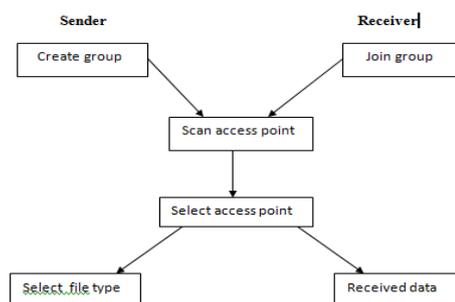


Fig 1: System Architecture

To develop an Android application "Group Broadcast"

This system is divided into following modules

Module 1: Create Group Activity

This activity is responsible for creating Wi-Fi group for a valid user. The creator of group will act as a sender, who sends the data to the active access point in the network.

Module 2: Sender Activity

In this activity sender sends data to all devices connected in a Wi-Fi Network.

Module 3: join Activity

This activity allows a sender & receiver to connect to the access point through which data transferred from sender to the receiver.

Module 4: Receiver Activity

In this activity receiver receives the data sent by sender device in a network.

Module 5: Exit Group Activity

This activity which can be initiated by sender after file transfer has been completed or this can be initiated by receiver when receiver wants to exit from group

4. ALGORITHM AND DESIGN

The algorithm design defines the algorithms of broadcasting data which are implemented in this application.

4.1 Algorithm for sender Activity

Input: Access Point

Output: Raw Data (Raw data of running Screen)

Steps:

- Step 1: Start
- Step 2: Create a group for broadcasting data in network.
- Step 3: Scan list of available active Access Point.
- Step 4: Connect to a specific Access Point to create a group.
- Step 5: Select file type.
- Step 6: Select specific file which sender want to share.
- Step 7: Broadcast the selected file.
- Step 8: End

4.2 Algorithm for Receiver Activity

Input: Raw Data

Output: Screen Images

Steps:

- Step 1: Start
- Step 2: Join a group for broadcasted data in network.
- Step 3: Scan list of available active Access Point.
- Step 4: Connect to a specific Access Point for joining particular group
- Step 5: Receive Data.
- Step 6: Build and View image
- Step 7: End

4.3 Flowchart

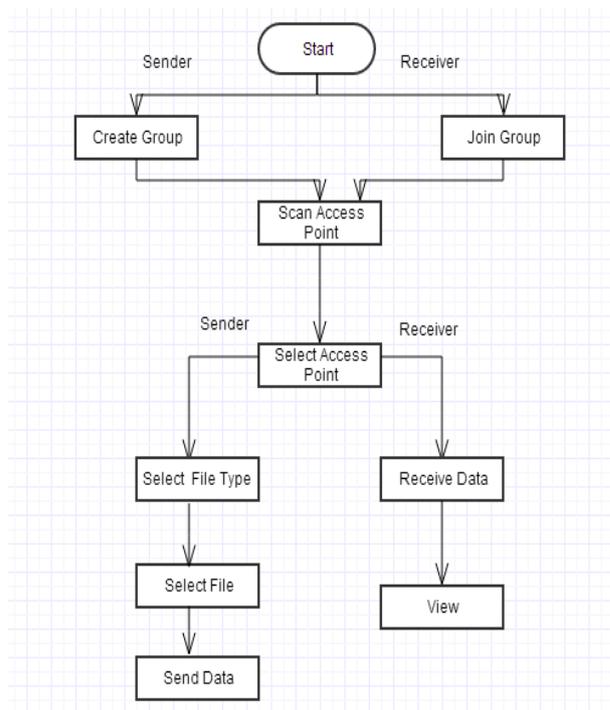


Fig 2: System Flow

5. SCREENSHOTS

This window (fig-3) is used for creating or joining the group the new group.



Fig 3: Initial Screen

The master device can click on any PDF or PPT or Gallery or Paint option for broadcasting file. (fig-4)



Fig 4: Sharing option Screen

6. CONCLUSIONS

Every user can easily use this application for sharing data, documents, and images in easy and simple way. It has the following benefits:

i) Society: Group Broadcast Application is applicable to all android devices (Wi-Fi) which is not feasible earlier. So it is very useful, for broadcasting files such as PDF, PPT, images etc., at very low cost. These types of other applications are available only in high cost and high configuration Android device, but Group Broadcast supports every android device. Sharing of information and documents is easily done at anywhere and everywhere just by creating a group & sharing of data in the group.

iii) Cost Effectiveness : Group Play features which are provided in Samsung galaxy S4 can be develop in this application which will support music, video haring in all Android phone's in the Wi-Fi connected Group. These features are only provided in the high cost

Android phones, these features can be developed in this app which is at low cost and provide all this features.

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