**AndroidManifest.xml with Intent Filters and Permissions**

The **Android Manifest File** (AndroidManifest.xml) is a crucial component of an Android application. It serves as the central configuration file, providing essential information about the app to the Android system. It defines app permissions, components, hardware requirements, and more. Below is an overview of its purpose and common settings.

<?xml version="1.0" encoding="utf-8"?>

<manifest xmlns:android="http://schemas.android.com/apk/res/android"

package="com.example.myapp">

<!-- Minimum and Target SDK -->

<uses-sdk

android:minSdkVersion="21"

android:targetSdkVersion="33" />

<!-- Permissions -->

<uses-permission android:name="android.permission.INTERNET" />

<uses-permission android:name="android.permission.ACCESS\_FINE\_LOCATION” />

<uses-permission android:name="android.permission.CAMERA" />

<application

android:allowBackup="true"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:theme="@style/AppTheme">

<!-- Main Activity with Intent Filters -->

<activity

android:name=".MainActivity"

android:label="@string/app\_name"

android:exported="true">

<!-- Intent Filter for Main Launcher -->

<intent-filter>

<action android:name="android.intent.action.MAIN" />

<category android:name="android.intent.category.LAUNCHER"/>

</intent-filter>

<!-- Intent Filter for Custom Action -->

<intent-filter>

<action android:name="com.example.myapp.CUSTOM\_ACTION" />

<category android:name="android.intent.category.DEFAULT" />

</intent-filter>

</activity>

<!-- Secondary Activity with Intent Filter for URL Handling -->

<activity

android:name=".WebViewActivity"

android:label="@string/webview\_activity"

android:exported="true">

<intent-filter>

<action android:name="android.intent.action.VIEW" />

<category android:name="android.intent.category.DEFAULT" />

<category android:name="android.intent.category.BROWSABLE" />

<data android:scheme="https"

android:host="www.example.com" />

</intent-filter>

</activity>

</application>

</manifest>

**Explanation of Key Sections**

1. **Permissions**
2. **<uses-permission>**: Requests permissions required by the app. For example:
   1. android.permission.INTERNET: Needed for network access.
   2. android.permission.ACCESS\_FINE\_LOCATION: Accesses precise device location.
   3. android.permission.CAMERA: Uses the device's camera.
3. **Intent Filters**
4. Intent Filters specify how components (like activities) respond to certain intents.
5. **Main Activity Intent Filters**:
6. **Launcher Intent Filter**:
   1. Registers the activity as the app's entry point.
   2. Uses:
      1. android.intent.action.MAIN: Indicates this activity starts the app.
      2. android.intent.category.LAUNCHER: Makes the activity appear in the app launcher.
7. **Custom Action**:
   1. Declares a custom action (com.example.myapp.CUSTOM\_ACTION) to handle specific intents sent by other components or apps.
8. **Secondary Activity Intent Filters**:
9. **URL Handling**:
   1. Configures WebViewActivity to open links with the scheme https and host www.example.com.
   2. Uses:
      1. android.intent.action.VIEW: Indicates the activity can handle "view" actions.
      2. android.intent.category.BROWSABLE: Allows the activity to be invoked from a web browser.
      3. <data>: Specifies the URL scheme and host to handle.

**How It Works**

* **Permissions**:
  + During app installation, the user is prompted to grant the declared permissions (if not runtime permissions).
* **Intent Filters**:
  + When an app or the system sends an intent matching an intent filter:
    - **Launcher**: Displays MainActivity when the app icon is clicked.
    - **Custom Action**: Allows other components to invoke MainActivity using the custom action.
    - **URL Handling**: Opens WebViewActivity when a link matching the specified URL is clicked.