# Introduction

Android updated storage access for Android 11 (API Level 30) [1, 3]. This document explains how the code implements scoped storage for the AccelPlot application.

# Discussion

Android product managers discovered most apps don’t need broad access. Broad access left behind files that filled up the drive. For this reason, they introduced scoped storage in Android 10 (API Level 29).

Principles:

* Better attribution. Helps remove content
* Protecting app data. Internal app directories are private. SD directories need to be protected from other apps.
* Protecting user data.
* Unrestricted access to your own app storage. You can write to your own directory.

An app always has unrestricted access to their own storage, both external and internal [4, 5].

requestLegacyExternalStorage lets users opt out since scoped storage did not initially satisfy all of the use cases

For apps that need access to the entire file system MANAGE\_EXTERNAL\_STORAGE was introduced. Must be manually reviewed to get whitelisted by Google.

# Methodology

From [6], need to build this section out.

# References

1. <https://developer.android.com/about/versions/11/privacy/storage>
2. <https://stackoverflow.com/questions/64221188/write-external-storage-when-targeting-android-10>
3. “Preparing for scoped storage (Android Dev Summit ’19).” Oct 24, 2019. <https://www.youtube.com/watch?v=UnJ3amzJM94>.
4. “Storage access with Android 11.” Jun 10, 2020. <https://www.youtube.com/watch?v=RjyYCUW-9tY>.

Explains the rationale behind some of the odd behaviors between Android 10 and 11

1. “Scoped Storage in Android in a Nutshell.” Dec 17, 2020. <https://www.youtube.com/watch?v=TkOzcyzH1hU>.

Good visualization of storage model in Android. Confirms thoughts about private app storage.

1. “Writing to Files in Internal Storage Android.” May 21, 2021. <https://www.youtube.com/watch?v=wc4p6sYR3B4>.

A simple how-to video writing a text message to an external file.