# Flutter Project Files

A Beginner's Guide to Important Configuration Files

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**Android** **AndroidManifest.xml** `android/app/src/main/AndroidManifest.xml`

The main configuration file for the Android system. It tells the OS "who" the app is and "what" it needs.

- **manifest (package="...")**: The unique internal identifier for the app package.

- **uses-permission**: This is where you declare permissions like Internet, Camera, or Location.

- **application > android:label**: The name of the app as it appears to the user (e.g., "bootcamp_01").

- **activity > .MainActivity**: The entry point for the Android app. The `intent-filter` with `action.MAIN` and `category.LAUNCHER` makes this the first screen.

- **meta-data**: Configuration tags used by the Flutter engine to set themes or integration settings.

**Android** **build.gradle.kts** `Multiple Locations`

Android uses Gradle for building. There are TWO main files you need to distinguish:

**A. Project Level** `android/build.gradle.kts`

- **Purpose**: Configuration for the *entire* workspace/project.

- **allprojects { repositories }**: Tells Gradle where to download libraries from (e.g., google(), mavenCentral()).

- **Role**: It acts as the "Parent". Generally, you touch this file less often.

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**B. App Level**                                        `android/app/build.gradle.kts`

- **Purpose**: Configuration specific to the **App Module** (your code). Edited most often.

- **defaultConfig > applicationId**: The unique ID for the Play Store (e.g., com.example.app).

- **minSdk / targetSdk**: Defines which Android versions your app supports.

- **versionCode / versionName**: Automatically pulled from `pubspec.yaml`.

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## iOS **AppDelegate.swift**                    `ios/Runner/AppDelegate.swift`

The entry point for the iOS application code.

- **@main**: The annotation that tells iOS "Start here".

- **FlutterAppDelegate**: The class inherits from this to give your iOS app Flutter capabilities.

- **GeneratedPluginRegistrant.register(with: self)**: A critical line that initializes all your Flutter plugins so they work on the iOS side.

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## iOS **Info.plist**                                    `ios/Runner/Info.plist`

A property list that stores configuration data for the iOS app.

- **CFBundleDisplayName**: The app name shown on the iPhone home screen.

- **CFBundleIdentifier**: The unique Bundle ID for the App Store.

- **NS...UsageDescription Keys**: Keys you MUST add to explain why you need permissions (Camera, Location, etc.) or the app will crash on iOS.

- **CFBundleVersion / ShortVersionString**: Mapped from your Flutter build version.

## Flutter pubspec.yaml

`root/pubspec.yaml`

The heart of a Flutter project. It manages dependencies, versioning, and assets.

- **name & description**: Internal project metadata.

- **version**: The single source of truth (e.g., `1.0.0+1` ). Used for both Android and iOS versions.

- **environment**: Specifies the Dart SDK version required.

- **dependencies**: Where you add libraries (e.g., `http` , `provider` ).

- **flutter > assets**: Where you list images to bundle with the app.

- **flutter > fonts**: Where you register custom font files.