

Oct. 01, 2022

MNNIT Computer Coding Club

ANDROID DEVELOPMENT

Class 2



AGENDA



Topics covered in the last class:

Android Studio basics

Activity

Layout

Intent

- ★ **AndroidManifest.xml?**
- ★ **Permissions in Android**
- ★ **Dependencies**
- ★ **Adapters**
- ★ **RecyclerView**

AndroidManifest.xml

Manifest file describes essential information about your app to the Android build tools, the Android Operating system and Google Play.

Manifest file contains:

- ◆ App's Package Name
- ◆ App's components
- ◆ Permissions
- ◆ Hardware and Software features that app requires

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    package="com.practice.myapplication">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.MyApplication"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

Permissions

App permissions help support user privacy by protecting access to the following:

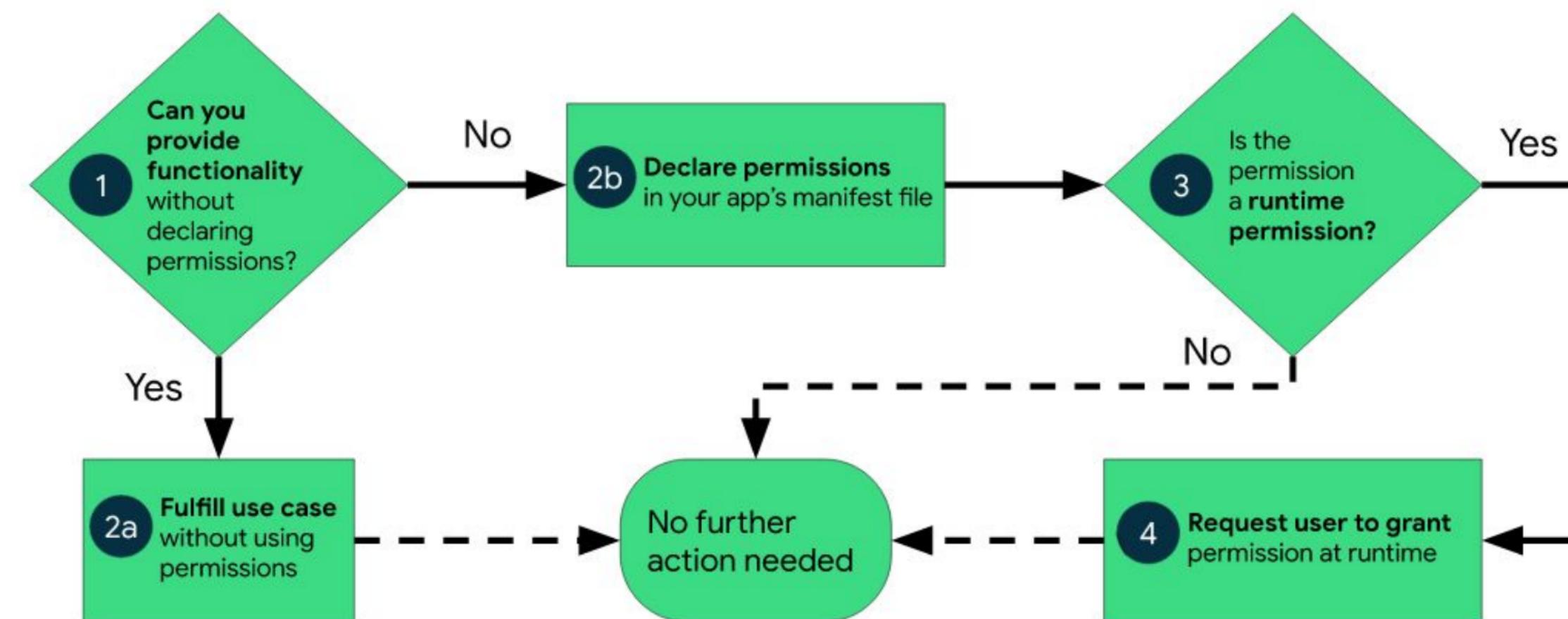
- ★ **Restricted data**, such as system state and a user's contact information
- ★ **Restricted actions**, such as connecting to a paired device or record audio

If your app required restricted data or need to perform restricted actions, you must need to declare appropriate permissions.

Permissions Continued . . .

Install-time Permissions are automatically granted when your app starts

Run-time Permissions require your app to request the permission at runtime



Install-time Permissions

System automatically grants while installing
Install-time permission notice in app's details page

Android includes several sub-types of install-time permissions, including **normal permissions** and **signature permissions**

Version 1.234.5 may request access to



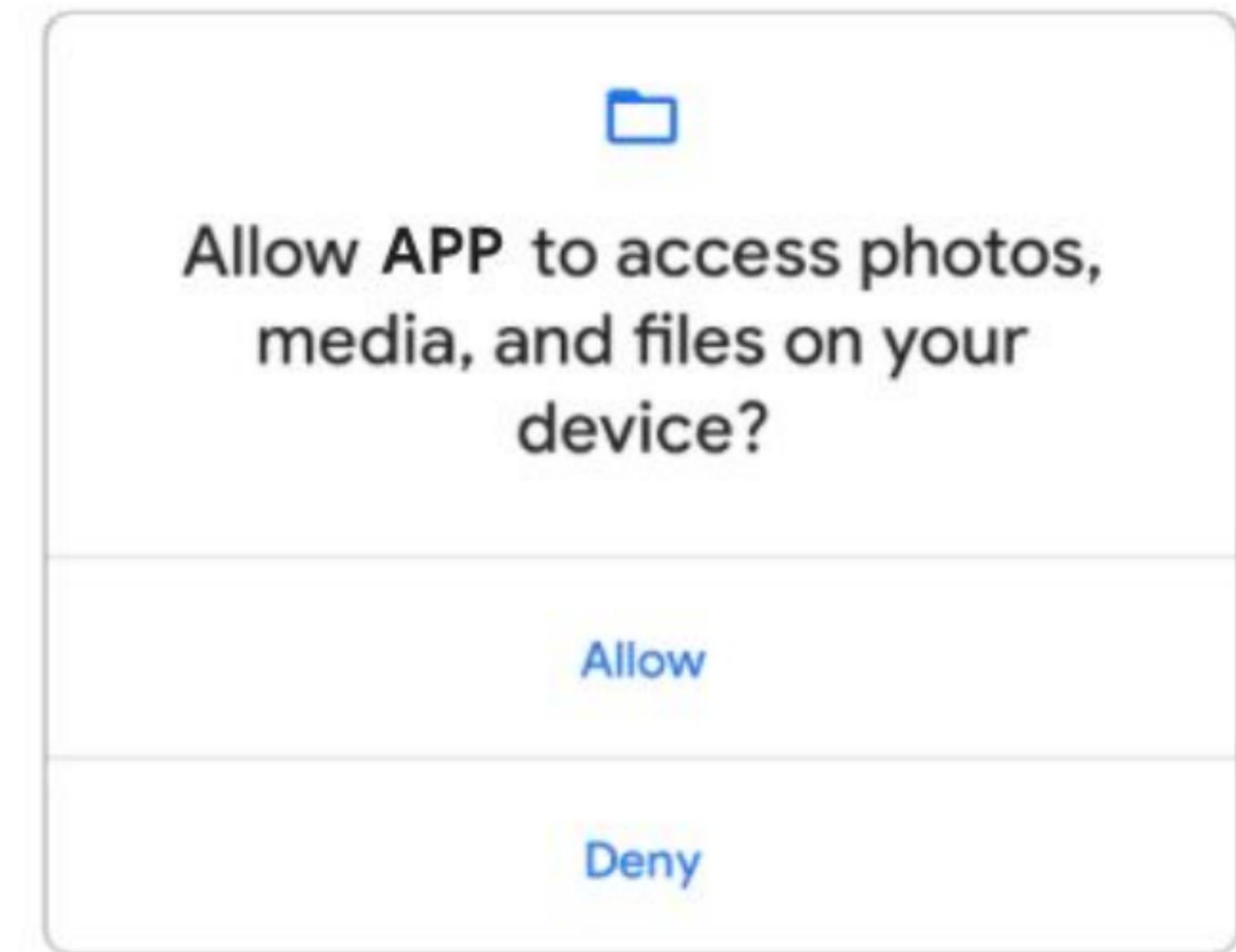
Other

- have full network access
- view network connections
- prevent phone from sleeping
- Play Install Referrer API
- view Wi-Fi connections
- run at startup
- receive data from Internet

Run-time Permissions

Run-time permissions are **dangerous permissions** which gives your app access to **restricted data** and **restricted actions**.

When your app requests run-time permission, the system presents a runtime permission prompt



Dependencies

Dependencies are **external binaries** or **other library modules** used in your app.

They can be located on your machine or in a remote repository.

Any **Transitive dependencies** declared are automatically included.

Dependencies can be added as an implementation in the dependencies block of your **build.gradle** file

```
apply plugin: 'com.android.application'

android { ... }

dependencies {
    // Dependency on a local library module
    implementation project(":mylibrary")

    // Dependency on local binaries
    implementation fileTree(dir: 'libs', include: ['*.jar'])

    // Dependency on a remote binary
    implementation 'com.example.android:app-magic:12.3'
}
```

Dependencies Continued..

There are several dependency configurations

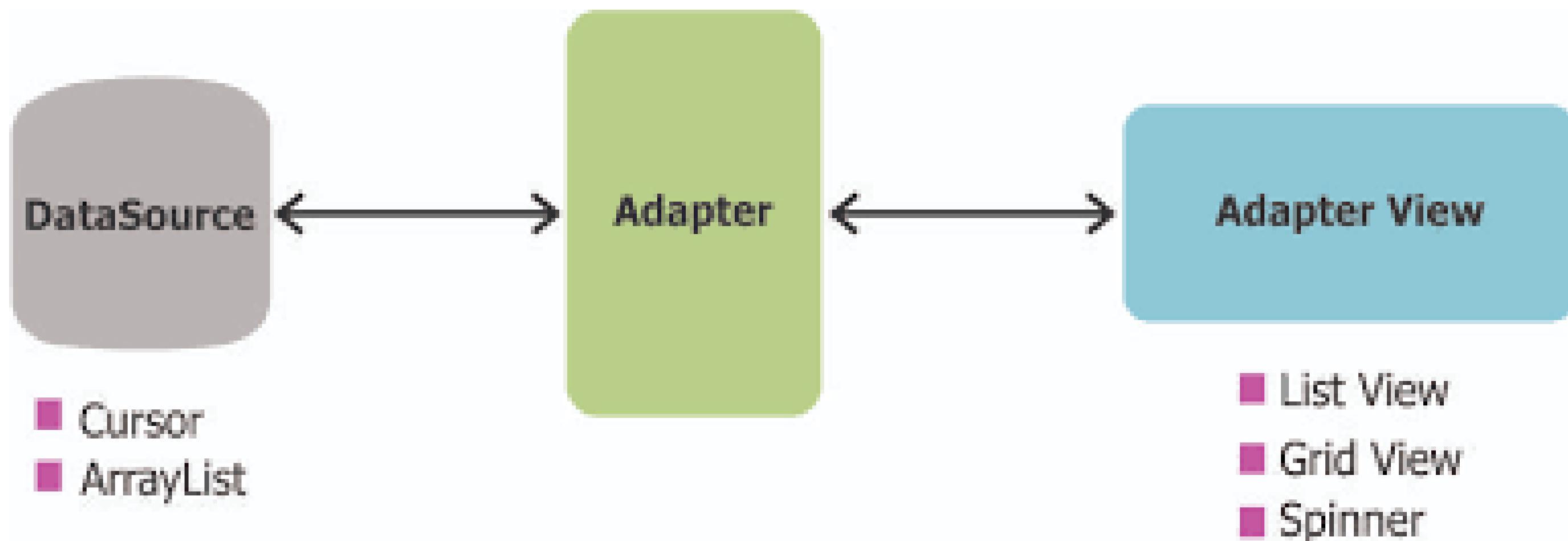
Examples: implementation, compileOnly, runtimeOnly.

Not important for you at this stage.

Note: If you refer to some old code you will see the word '**compile**' instead of implementation. This word '**compile**' is now deprecated and can be replaced with **implementation** for your use case

Adapter

Adapter is a bridge between UI component and data source that helps us to fill data in UI component



RecyclerView

RecyclerView is a ViewGroup added to the android studio as a successor of the GridView and ListView. It displays a collection of views either vertically, horizontally or grids.

RecyclerView reuses the view for new items that have scrolled onscreen.