PV239 #android2

cv3

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PERMISSIONS

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Permissions

- Each app operates in sandbox
- Additional capabilities? -> **permissions in AndroidManifest.xml**

```
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.android.app.myapp" >
    <uses-permission android:name="android.permission.RECEIVE_SMS" />
    ...
</manifest>
```

- More levels of protection
  - Normal permissions
    - resources outside the sandbox
    - little risk to the user’s privacy
  - Dangerous permissions
    - contacts

Marshmallow changes the flow (API23)

- App requests permission at run-time

```
if (ContextCompat.checkSelfPermission(thisActivity,
                Manifest.permission.READ_CONTACTS)
        != PackageManager.PERMISSION_GRANTED) {

    if (ActivityCompat.shouldShowRequestPermissionRationale(thisActivity,
            Manifest.permission.READ_CONTACTS)) {
        // show alert why we need that permisson
    } else {
        ActivityCompat.requestPermissions(thisActivity,
                new String[]{Manifest.permission.READ_CONTACTS},
                MY_PERMISSIONS_REQUEST_READ_CONTACTS);
        // this means we have successfully requested the permission
    }
}
```

STORAGE

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STORAGE

- SharedPreferences
  - Simple values, `String, Integer, Boolean,...`
- Internal Storage, External Storage
  - External storage is World R/W
- SQLite DB
  - There are better approaches, like Realm
- Network
  - REST API, Custom server

SharedPreferences

- Simple Data
- `public static final String PREFS_NAME = "MyPrefsFile";`
- Writing

```
SharedPreferences settings = getSharedPreferences(PREFS_NAME, 0);
SharedPreferences.Editor editor = settings.edit();
editor.putBoolean("silentMode", mSilentMode);
// Commit the edits!
editor.commit();
```

- Reading

```
SharedPreferences settings = getSharedPreferences(PREFS_NAME, 0);
boolean silent = settings.getBoolean("silentMode", false);
setSilent(silent);
```

Internal Storage

- https://developer.android.com/guide/topics/data/data-storage.html#filesInternal

```
String FILENAME = "hello_file";
String string = "hello world!";

FileOutputStream fos = openFileOutput(FILENAME,
Context.MODE_PRIVATE);
fos.write(string.getBytes());
fos.close();
```

External Storage

- https://developer.android.com/guide/topics/data/data-storage.html#filesExternal
- External storage may be removed, replaced, erased by 3rd party

```
public File getAlbumStorageDir(String albumName) {
    // Get the directory for the user's public pictures directory.
    File file = new File(Environment.getExternalStoragePublicDirectory(
            Environment.DIRECTORY_PICTURES), albumName);
    if (!file.mkdirs()) {
        Log.e(LOG_TAG, "Directory not created");
    }
    return file;
}
```

SQLite

- File based database
- There are better alternatives
- Better: Realm (try at home)
    - Has sync options (cross-platform/cloud)

Network based storage

- JSON
- POST/PUT/GET Http methods
- Retrofit2

EXAMPLE

See git.

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THANK YOU

See you on Slack.

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