

droidcon NYC 2015

Android 6.0 Runtime Permissions... And You!

(a code lab)



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*(a code **review**)*



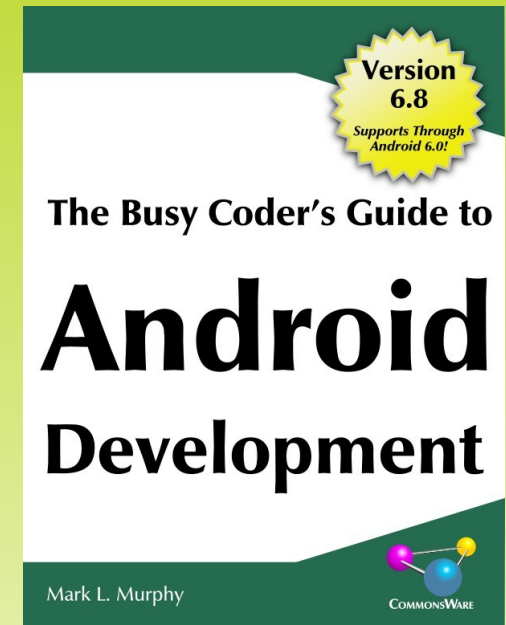
Runtime Permissions... in <140 Characters

- Dangerous permissions
- Put in manifest as normal
- See if you hold them
- Request from user
- Cope with rejection



Resources

- For the Review
 - Finished project
- For the Lab
 - Starter Project
 - PDF with Instructions
 - Excerpt from a book
- For the Heck of It
 - These slides



Resources



<https://commonsware.com/presos/droidconNYC2015>



Step # 1

- Import the Project
 - Options
 - RuntimePermTutorial.zip
 - RuntimePermTutorial-finish.zip
 - Unzip
 - File > New... > Import Project



Step #2

- Update Gradle for Android 6.0
 - `compileSdkVersion 23`
 - `buildToolsVersion "23.0.0"`
 - `targetSdkVersion 23`



But First, A Word About States

- Possible Runtime Permission States
 - We have never asked for the permission
 - We asked for the permission, and got it
 - We asked... and the user rejected the request
 - Or, granted it earlier and rejected it later in Settings
 - We asked... and the user rejected the request, plus took out a restraining order to prevent us from asking again



Step #3

- Review Planned UX
 - Ask for CAMERA, WRITE_EXTERNAL_STORAGE permissions on first run
 - Ask for RECORD_AUDIO on first click of the “Record Video” button
 - Ask for permissions as needed if rejected



Step #4

- Detect the First Run
 - Add a SharedPreferences boolean value
 - Read it in and flip it true when activity starts



Step #5

- On First Run, Ask For Permissions
 - Add static imports for permissions
 - Add array of permissions to ask for up front
 - Call `requestPermissions()` on first run, if we are on an Android 6.0+ device



Step #6

- Check for Permissions Before Taking a Picture
 - See if we have a given permission
 - See if can take a picture
 - See if we can take a picture before actually taking a picture and going **BOOM!**



Step #7

- Detect If We Should Show Some Rationale
 - See if we need to show rationale for a permission
 - See if we need to show rationale for taking a picture



Step #8

- Add a Rationale UI and Re-Request Permissions
 - Add a breadcrumb TextView
 - Show the breadcrumb, with a message, if the user taps “Take Picture” and we do not have permission to take a picture
 - Hide the breadcrumb and request permissions if the breadcrumb was showing
 - If we got the permissions, take a picture



Step #9

- Check for Permissions Before Recording a Video
 - See if we can record a video
 - See if we can record a video before actually recording the video, because if we cannot record the video, trying to record the video will be brutally ineffective



Step # 10

- Detect If We Should Show Some Rationale (Again)
 - See if we need to show rationale for recording a video
 - Show the breadcrumb if rationale is needed



Step # 11

- Determine If We Have Ever Asked for Recording Permission
 - Add another boolean SharedPreferences value
 - Add methods to get, set



Step # 12

- (Re-)Request Permissions
 - Ask for video permissions if we have never asked for RECORD_AUDIO before
 - Or if the broadcast is showing
 - If we got permissions, record the video



Step # 13

- Update the Button Status
 - Find out if we are screwed
 - Disable the buttons if we are screwed
 - In the permission callback
 - In onResume()



Step # 14

- Support Configuration Changes
 - Stuff the broadcast status into the saved instance state Bundle
 - Use that status in `onRestoreInstanceState()`



To Learn More...

- Android Developer Documentation
- A Recently-Updated Book
- Training in NYC!
 - Getting Ready for Android 6.0
 - Security and Device Administration
 - Performance Analysis / Tuning
 - Media and TV

<https://commonsware.com>

