What you can do to stay healthy with the **Marshmallow**
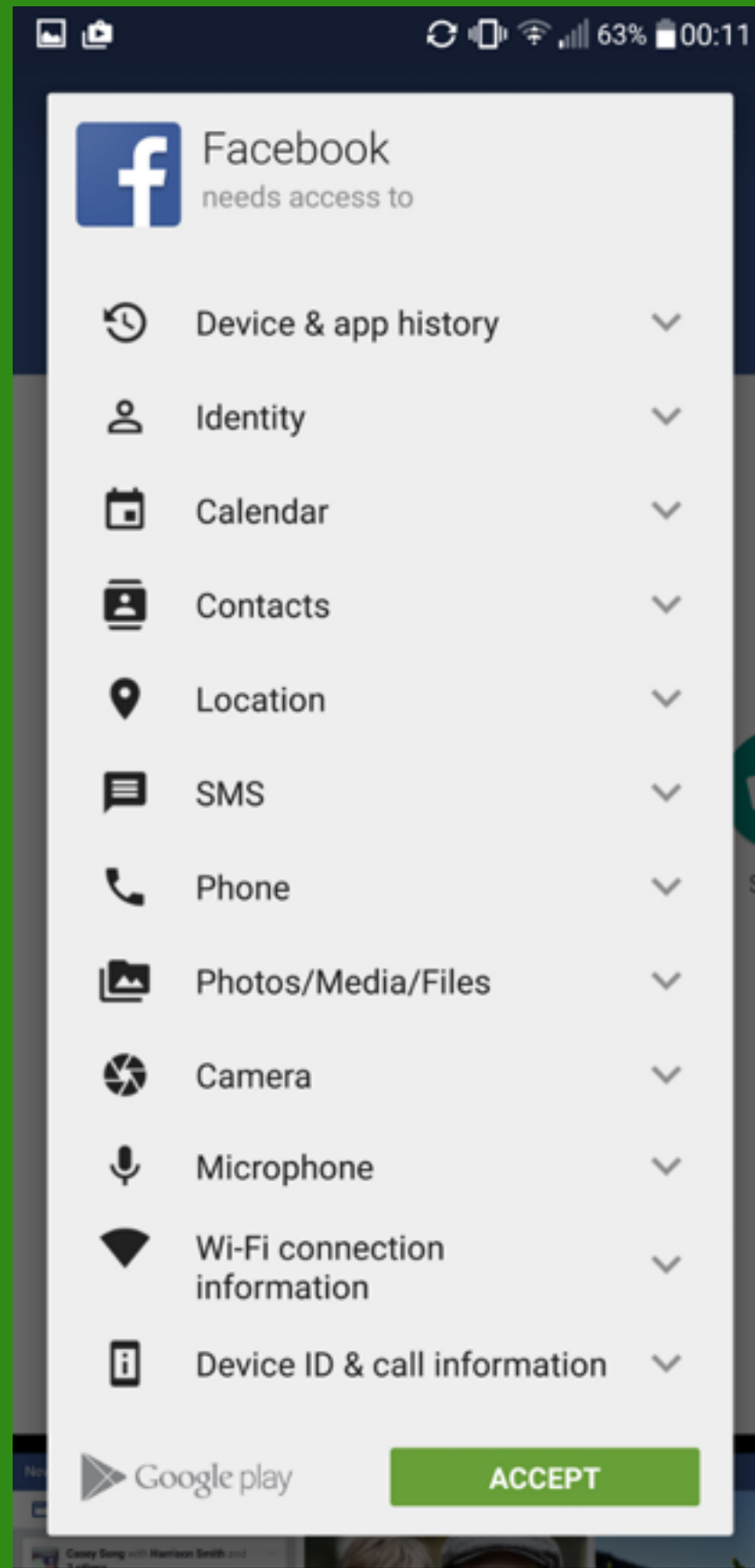

Gabor Bakos
Software engineer @ Skyscanner

Is there any potential danger out there?

New permission model
&
Doze and App Standby

The new **permission model**

8 Aggregated permission groups.

Per-app controls for each permissions

User can grant/revoke a previously given permission

By default nothing is granted.

Intents without permissions

How should I ask for permissions?

Teach your users, let them know
 why you're asking it!

App permissions

- Calendar
- Camera
- Contacts
- Location
- Microphone
- Phone
- SMS
- Sensors

App permissions

Calendar

- Android Permissions Example ⬤
- Calendar ⬤
- Calendar Storage ⬤
- Contacts ⬤
- Email ◯
- Exchange Services ⬤
- Google Play services ⬤
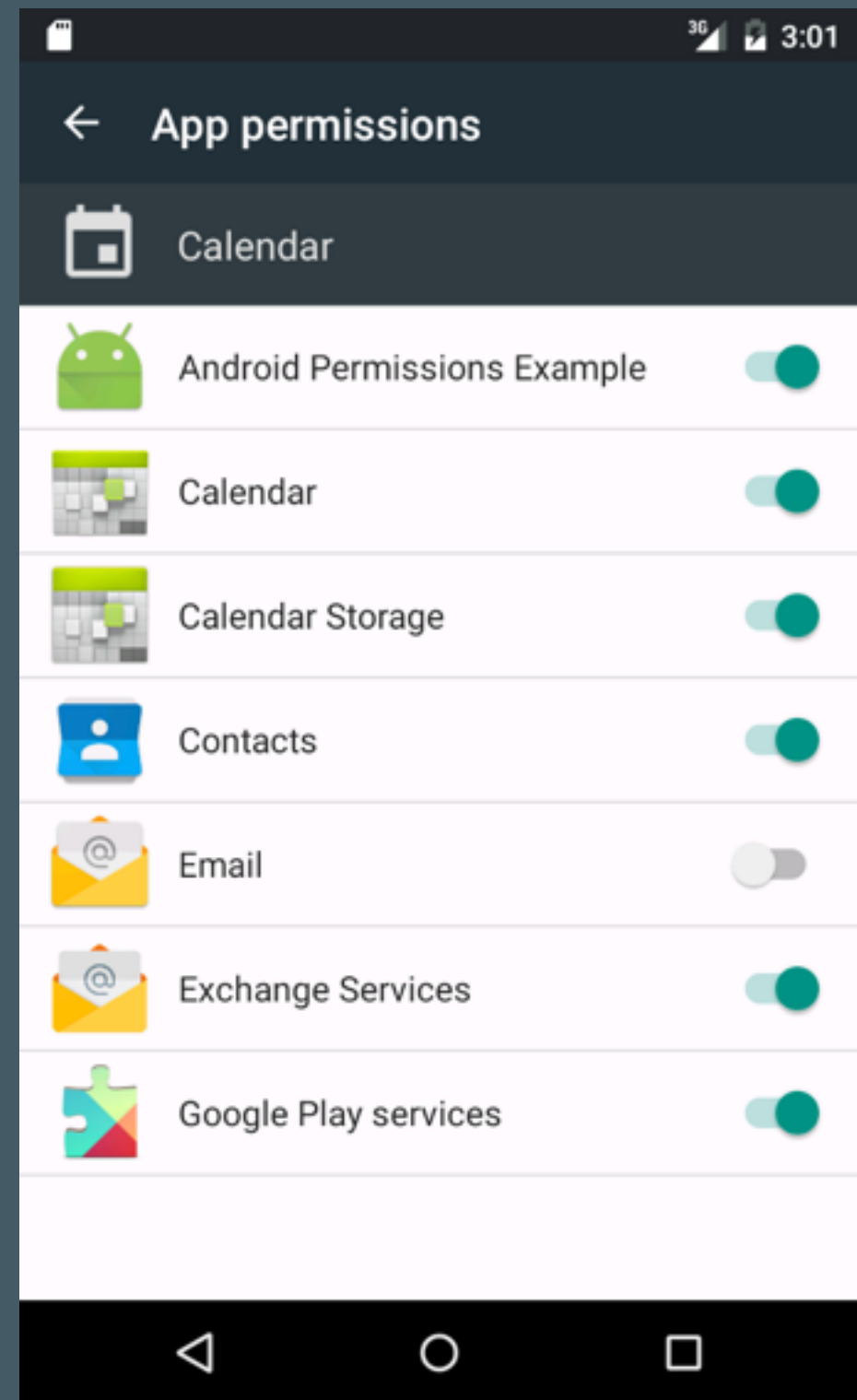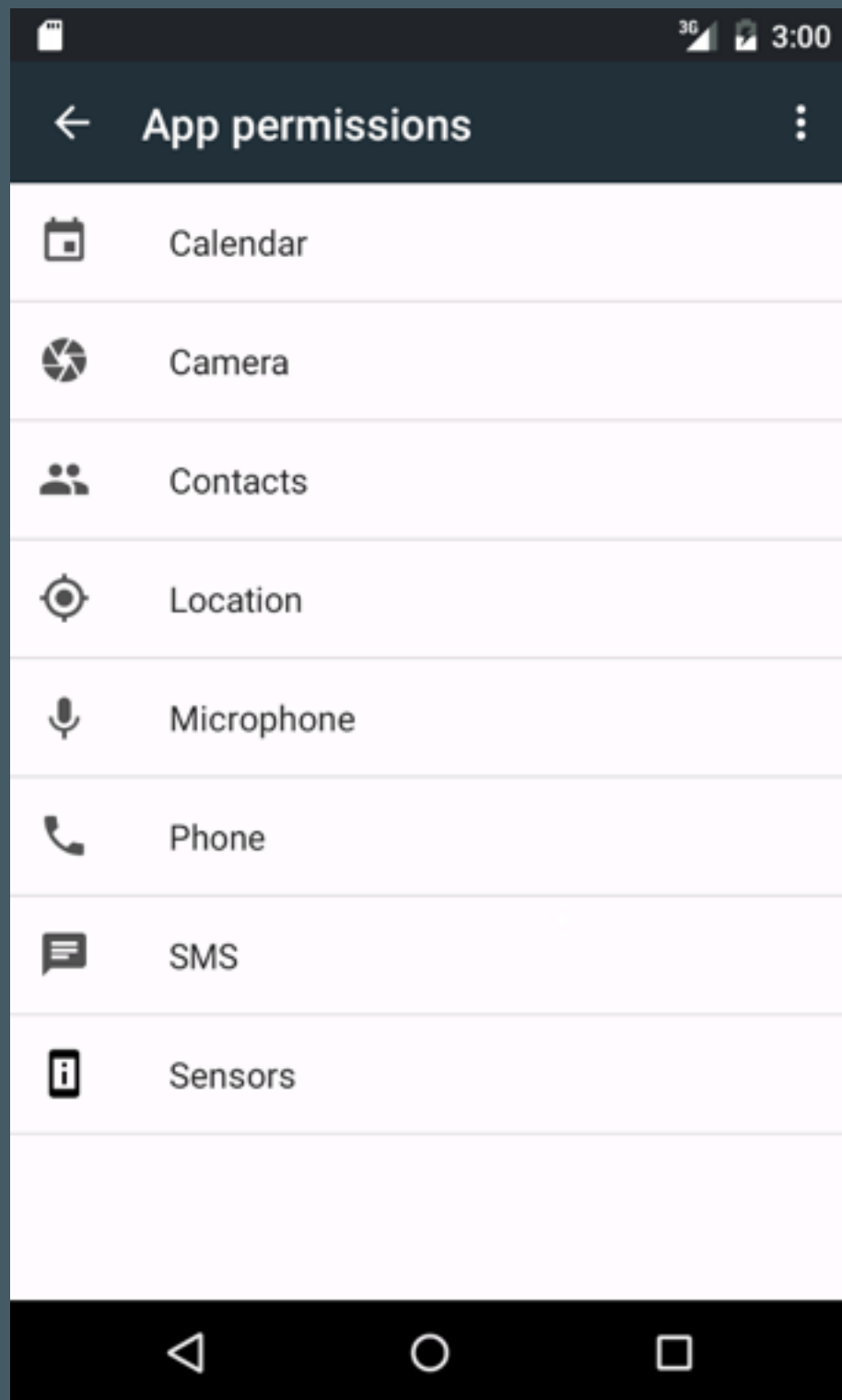
And on the code side?

Check in the Activity if we have the permission or not, then request if needed

```
int hasLocationPermission =
checkSelfPermission( Manifest.permission.ACCESS_FINE_LOCATION );
int hasSMSPermission = checkSelfPermission( Manifest.permission.SEND_SMS );
List<String> permissions = new ArrayList<String>();
if( hasLocationPermission != PackageManager.PERMISSION_GRANTED ) {
        permissions.add( Manifest.permission.ACCESS_FINE_LOCATION );
}

if( hasSMSPermission != PackageManager.PERMISSION_GRANTED ) {
        permissions.add( Manifest.permission.SEND_SMS );
}

if( !permissions.isEmpty() ) {
        requestPermissions( permissions.toArray( new String[permissions.size()] ),
REQUEST_CODE_SOME_FEATURES_PERMISSIONS );
}
```
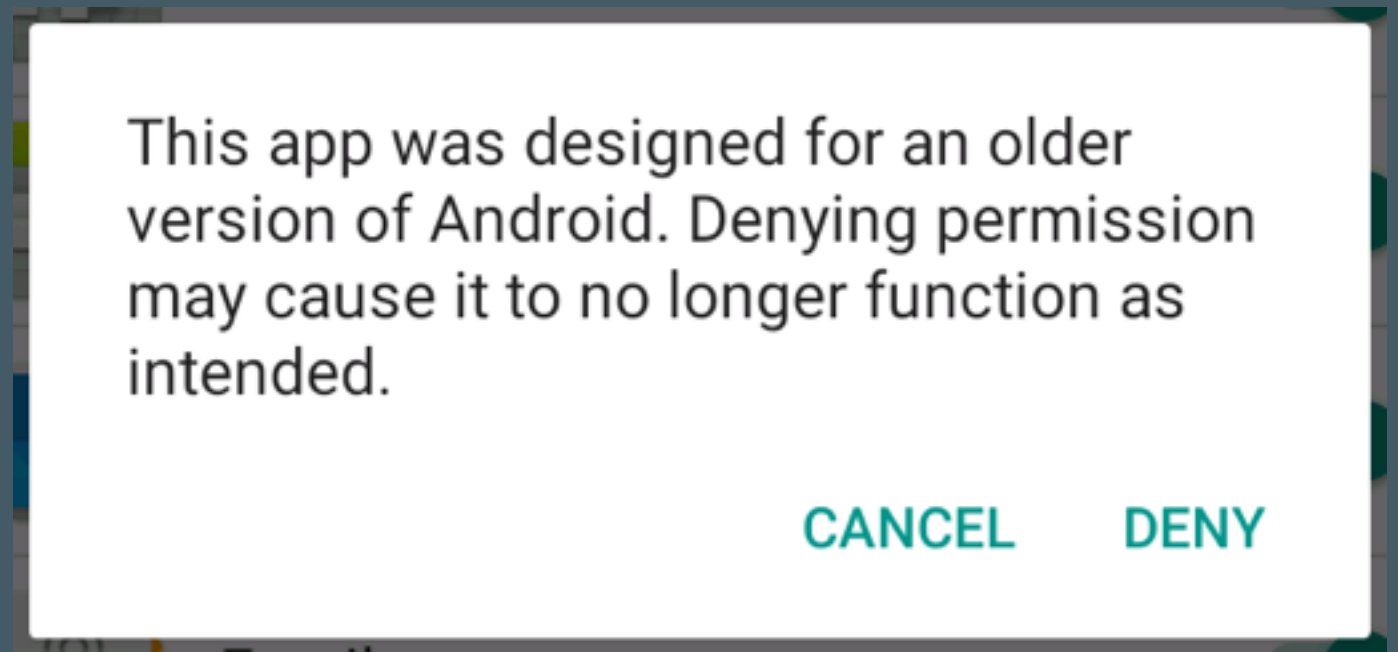
And on the code side?

And handle via callback:

```java
@Override
public void onRequestPermissionsResult(int requestCode, String[] permissions, int[]
grantResults) {
    switch ( requestCode ) {
        case REQUEST_CODE_SOME_FEATURES_PERMISSIONS: {
            for( int i = 0; i < permissions.length; i++ ) {
                if( grantResults[i] == PackageManager.PERMISSION_GRANTED ) {
                    Log.d("Permissions", "Permission Granted: " + permissions[i]);
                } else if( grantResults[i] == PackageManager.PERMISSION_DENIED ) {
                    Log.d( "Permissions", "Permission Denied: " + permissions[i] );
                }
            }
        }
        break;
        default: {
            super.onRequestPermissionsResult(requestCode, permissions, grantResults);
        }
    }
}
```
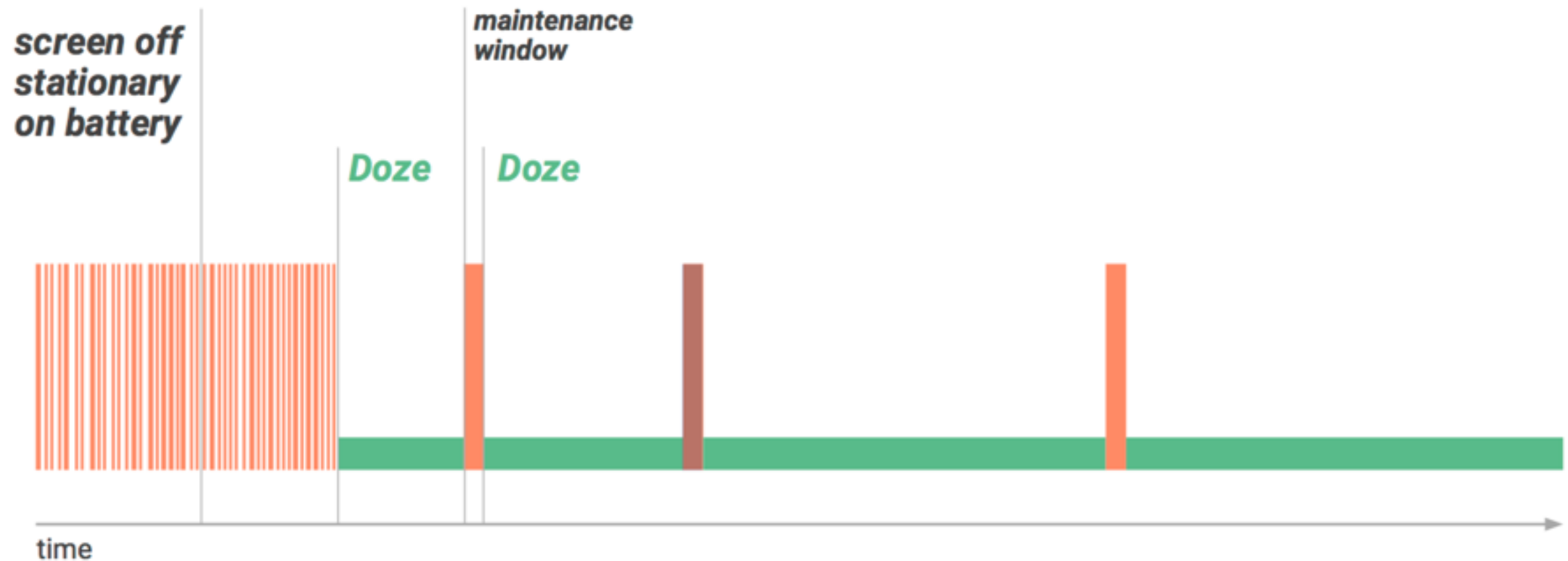
What about legacy apps?

- **User can still go to Settings to disable permissions**

- **User warned App may break**

- **App cannot request permissions**

This app was designed for an older version of Android. Denying permission may cause it to no longer function as intended.

CANCEL   DENY

Doze and **App Standby**

Doze

**Doze puts apps into deep sleep
when the device isn't in use to save power**

But my app must refresh something!

Doze ends shortly before any **setAlarmClock()** alarms

For apps that need alarms, use **AlarmManager.setAllowWhileIdle()** allowed once every 15 minutes

How can I test it?

$ adb shell dumpsys battery unplug

$ adb shell dumpsys deviceidle step

$ adb shell dumpsys deviceidle -h

App standby

App is considered idle after a period of time unless the app

has foreground process (activity or service)

has notification on lock screen or notification tray is explicitly launched by the user

But I need to see notifications right away!

If your users must see a notification right away you must use the **high priority GCM message**

How can I test it?

$ adb shell dumpsys battery unplug

$ adb shell am set-idle packageName true

$ adb shell am set-idle packageName false

$ adb shell am get-idle packageName

Don't forget to test your app against the new SDK!

Thanks for the attention!

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