

Permissions

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Permissions


 **Before installing an App, all the required permissions are displayed to the user**

 The user may accept and download

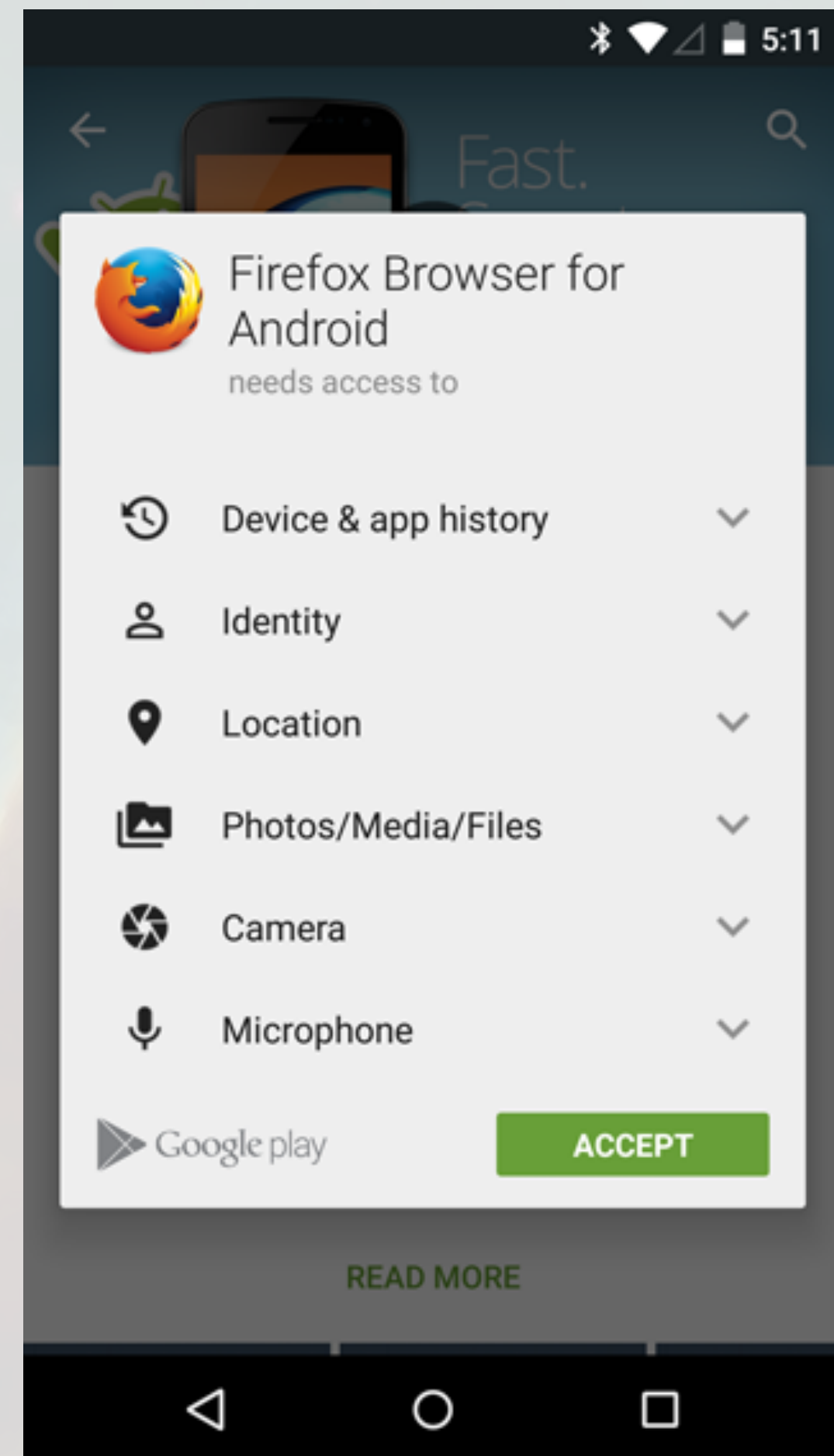
 ...or not!

 Theses permissions are describe in the Android Manifest.xml

 **At runtime**

 The user may choose to authorize or not some permissions

▶ **but the app is already installed and may have already explored all your personal data.**



AndroidManifest.xml



All permissions must be declared in AndroidManifest

ACCESS_COARSE_LOCATION

Approximative localisation

ACCESS_FINE_LOCATION

Precise localisation

BATTERY_STATS

Collect information on battery

BLUETOOTH

Connect to already paired bluetooth

BLUETOOTH_ADMIN

Discover bluetooth devices

cont'd

CALL_PHONE

Call without displaying keyboard

CALL_PRIVILEGE

Call anybody including Emergency

CAMERA

Camera access

CAPTURE_AUDIO_OUTPUT

Audio capture

BROADCAST_SMS

Receive

cont'd

CAPTURE_VIDEO_OUTPUT

Capture video

INTERNET

Require access to the Internet

READ_CONTACT

Read all your contact

READ_CALENDAR

Read your calendar

....

...

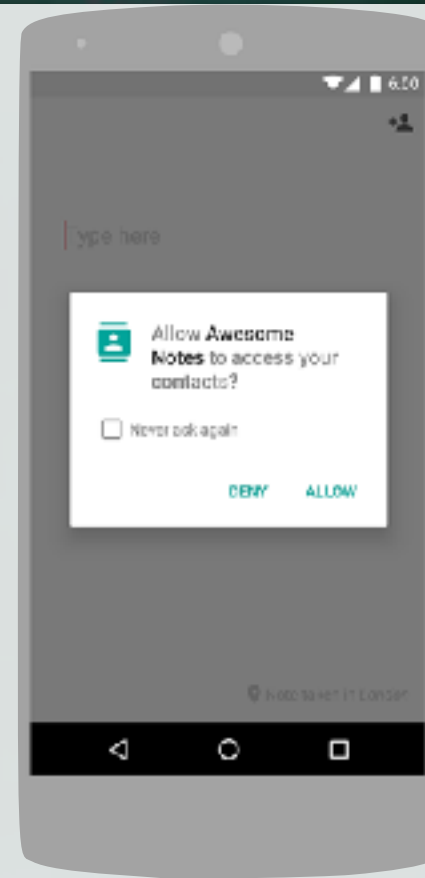
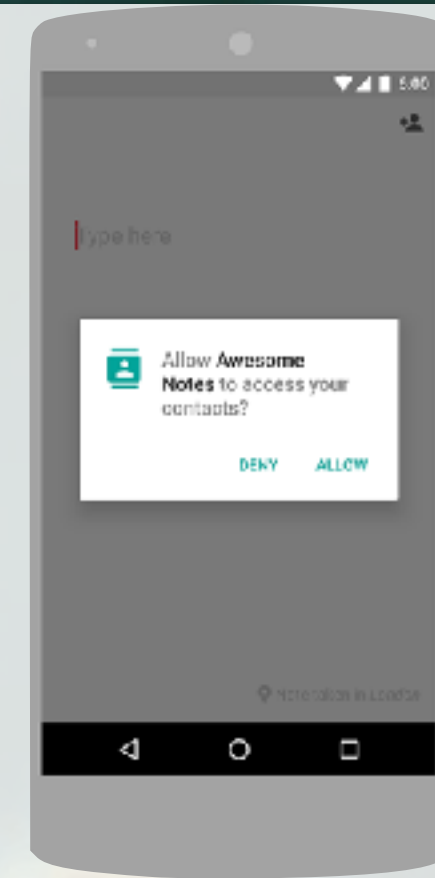
A Lot more!

System Permissions



Only available since Android API 23

- Goal: have more secure applications
- Ask before first usage for some permission



Two steps process

- (1) declare permissions into your AndroidManifest.xml
- (2) check before using something that you have permissions
 - ▶ If yes: use the feature
 - ▶ otherwise you have to request permission



Permissions must be checked frequently since the user may changed them at anytime

How to request for permissions?

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Define the permissions you are interested in

an define an ID for this set of permission (here permsCode)

```
String[] perms = {  
    Manifest.permission.ACCESS_FINE_LOCATION,  
    Manifest.permission.ACCESS_COARSE_LOCATION,  
    Manifest.permission.INTERNET  
};  
final int permsCode = 200;
```



Request then for this permission

Don't forget to check the API level

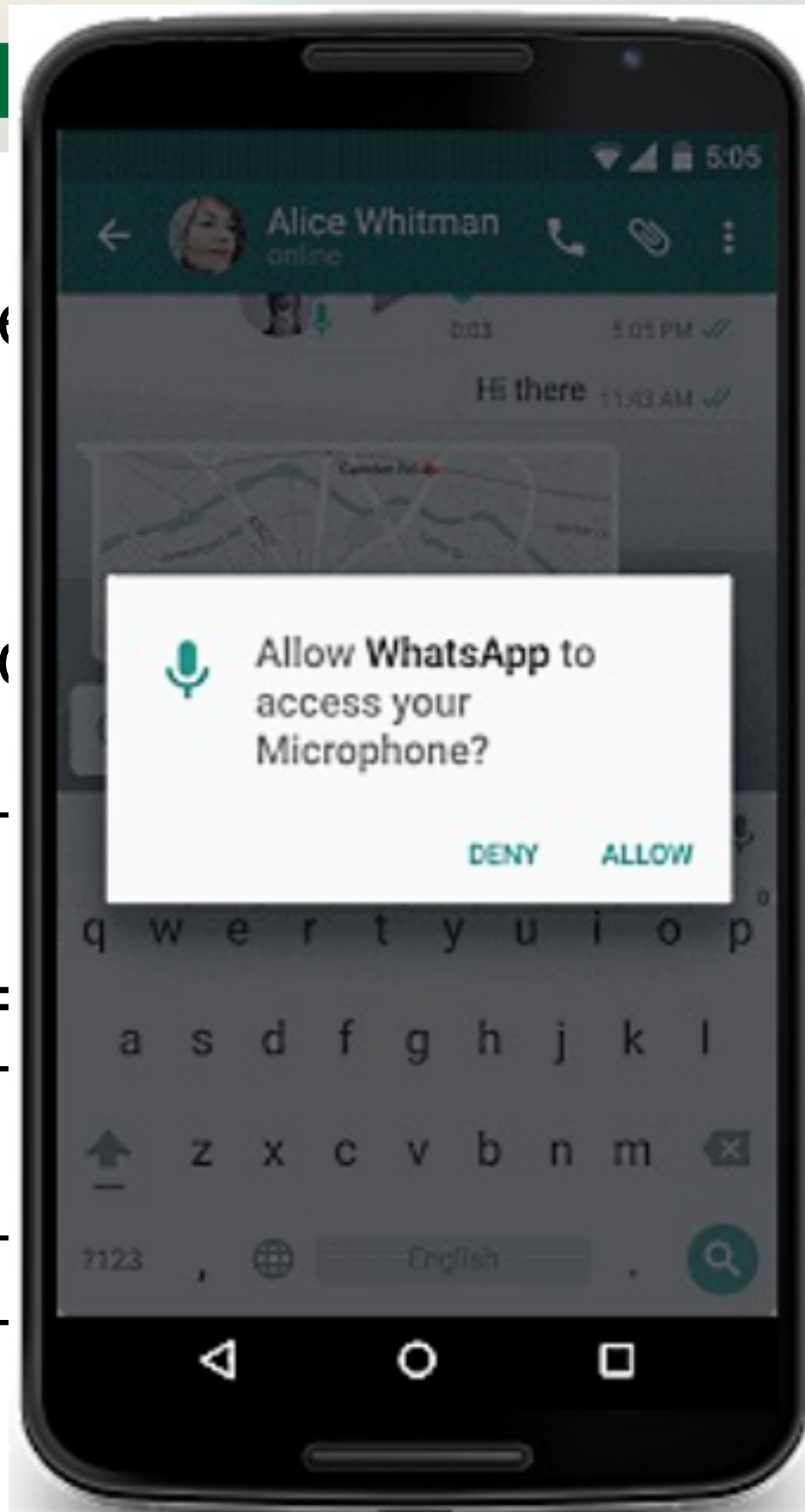
```
// Check For permissions  
if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {  
    requestPermissions(perms, permsCode);  
}
```

Permissions authorized callback



The onRequestPermissionsResult callback will be run as a response to req

```
public void  
onRequestPermissionsResult(  
  
    if (permsRequestCode ==  
        boolean fine =  
            grantResults[0] ==  
  
        boolean coarse =  
            grantResults[1] ==  
  
        boolean internet =  
            grantResults[2] ==  
            // Do something  
    }  
}
```



```
requestCode,  
permissions,  
results){
```

```
per.PERMISSION_GRANTED;
```

```
per.PERMISSION_GRANTED;
```

```
per.PERMISSION_GRANTED;
```


Summary

Check permission at runtime

```
if (ActivityCompat.checkSelfPermission(getActivity(),  
    Manifest.permission.ACCESS_FINE_LOCATION) !=  
    PackageManager.PERMISSION_GRANTED) {  
    ...  
}
```

AndroidManifest covers all permissions

More security is available since Android M

Think to check the permission frequently



