Android App Programming

Lecture 4: Services
November 14, 2017

Thomas Nowak
Université Paris-Sud
Last lecture recap
Web services

- web service = set of responses from a web server that aren’t HTML

- return formats: typically JSON or XML

- query formats: often HTTP GET request w/ query strings
  - ex: https://www.google.com/search?q=hi

- find web APIs: www.programmableweb.com
Services
Services

- for background tasks
- ex: downloads (that should continue after the app quit)
- ex: music player
- ex: polling an SMTP for new emails
Services

- Multiple types of services:
  - Started Service (runs in the UI thread)
  - Intent Service (runs in its own thread)
  - Bound Services (runs as long as there’s one activity active that bound it)
Service Lifecycle

- **Call to `startService()`**
  - `onCreate()`
  - `onStartCommand()`
  - **Service running**
    - The service is stopped by itself or a client
    - `onDestroy()`
    - **Service shut down**

- **Call to `bindService()`**
  - `onCreate()`
  - `onBind()`
  - **Clients are bound to service**
    - All clients unbind by calling `unbindService()`
    - `onUnbind()`
    - **Service shut down**

Unbounded service

Bounded service
Started Services

- extend Service class
- override `onStartCommand` method, normally returning `START_STICKY`
- override `onBind` method returning `null`
- start service by creating an `Intent` and calling `startService`
Broadcasting Intents

- to communicate from service to activity: broadcast Intents

- create an Intent in the Service, put data into the extra bundle, set its action via `setAction`, then call `sendBroadcast`

- in the activity: register a BroadcastReceiver for the same action via an IntentFilter and the method `registerReceiver`
Intent Services

- extend IntentService class
- override onHandleIntent method
- override onBind method returning null
- start service by creating an Intent and calling startService
Coding demo
1. Create a periodic background service
Advance reading

- Next week’s topic:
- Databases
- Read Ch. 55
Questions