Programming Handheld Systems

Adam Porter
Alarms
TODAY’S TOPICS

Alarms
AlarmManager APIs
Alarm Types
Example Application
Alarms

Mechanism for sending Intents at some point in the future

Allows one application to make code execute, even when that application is no longer running
Alarms

Once registered, Alarms remain active even if the device is asleep.

Can set configure Alarms to wake a sleeping device.

Alarms are canceled on device shutdown/restart.
Alarm Examples

MMS - Retry Scheduler

Settings - Bluetooth Discoverable

timeout

Phone - User Info Cache
AlarmManager

Create & manage alarms indirectly, by interacting with the AlarmManager

Get a reference to the AlarmManager by calling the Context class’

getSystemService(Context.ALARM_SERVICE)
Creating Alarms

// one-shot alarm

void set(int type, long triggerAtTime,
        PendingIntent operation)
Creating Alarms

// repeating alarm
void setRepeating(int type,
                long triggerAtTime,
                long interval,
                PendingIntent operation)
Creating Alarms

// repeating alarm with inexact trigger criteria

void setInexactRepeating(int type,
    long triggerAtTime,
    long interval,
    PendingIntent operation)

Interval options

    INTERVAL_FIFTEEN_MINUTES
    INTERVAL_HALF_HOUR
    INTERVAL_HOUR
    INTERVAL_HALF_DAY
    INTERVAL_DAY
Alarm Types

Two degrees of configurability
How to interpret time
What to do if the device is sleeping when the Alarm fires
Interpreting Time

Realtime – relative to system clock
Elapsed – relative to time since last boot
Sleeping Devices

Wake up device now & deliver Intent
Wait to deliver Intent until device wakes up
Alarm Type Constants

RTC_WAKEUP
RTC
ELAPSED_REALTIME
ELAPSED_REALTIME_WAKEUP
PendingIntent

PendingIntent getActivity(
    Context context,
    int requestCode, Intent intent,
    int flags, Bundle options)

PendingIntent getBroadcast(
    Context context,
    int requestCode, Intent intent, int flags)

PendingIntent getService(
    Context context,
    int requestCode, Intent intent, int flags)
<table>
<thead>
<tr>
<th>Time</th>
<th>PID</th>
<th>TID</th>
<th>Application</th>
<th>Tag</th>
<th>Text</th>
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</thead>
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Next Time

Networking