Programming Handheld Systems

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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

```java
// 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
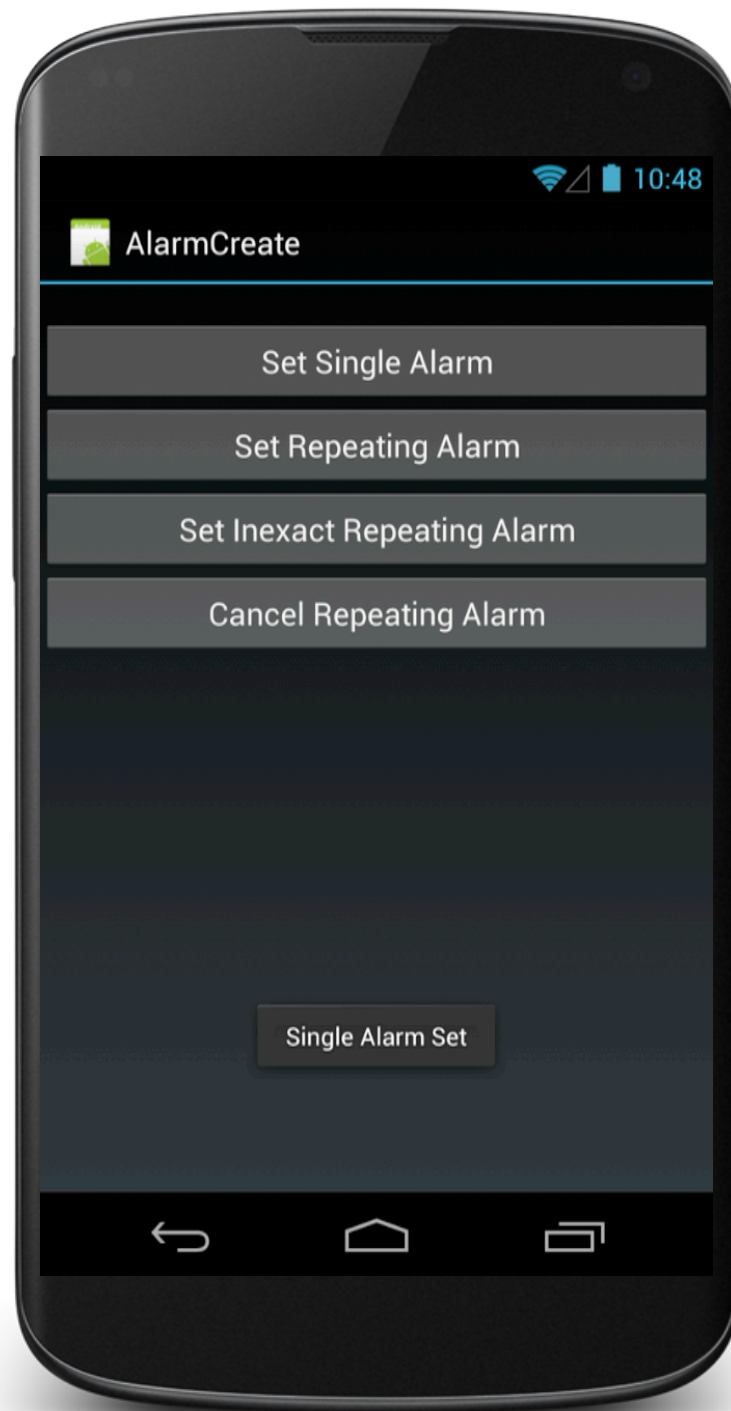
Alarm Type Constants

RTC_WAKEUP

RTC

ELAPSED_REALTIME

ELAPSED_REALTIME_WAKEUP

PENDINGINTENT

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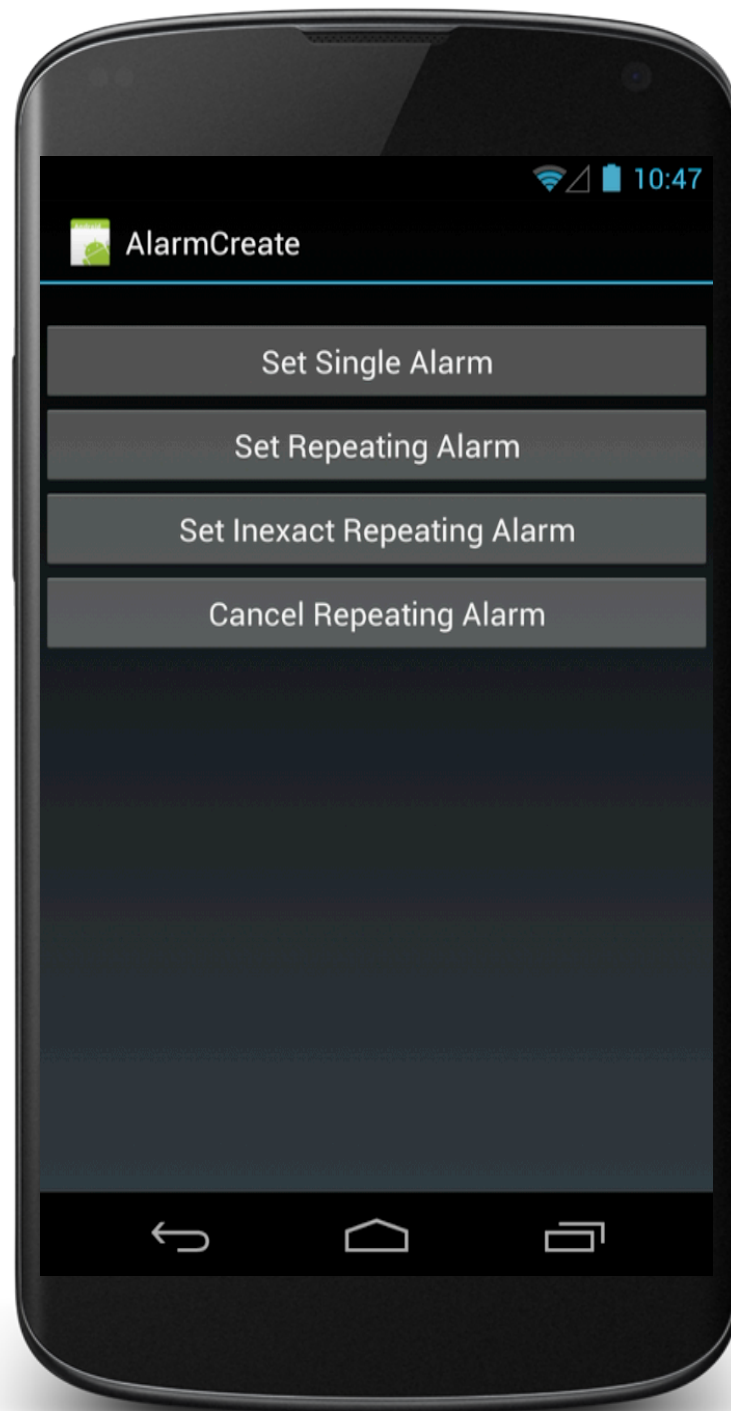   int flags, Bundle options)

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

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

AlarmCreate

Set Single Alarm

Set Repeating Alarm

Set Inexact Repeating Alarm

Cancel Repeating Alarm

Single Alarm Set

Demonstration of the
AlarmCreate project in the IDE

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AlarmCreate

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NEXT TIME

NETWORKING