Using Alarms to Schedule Time-sensitive Tasks

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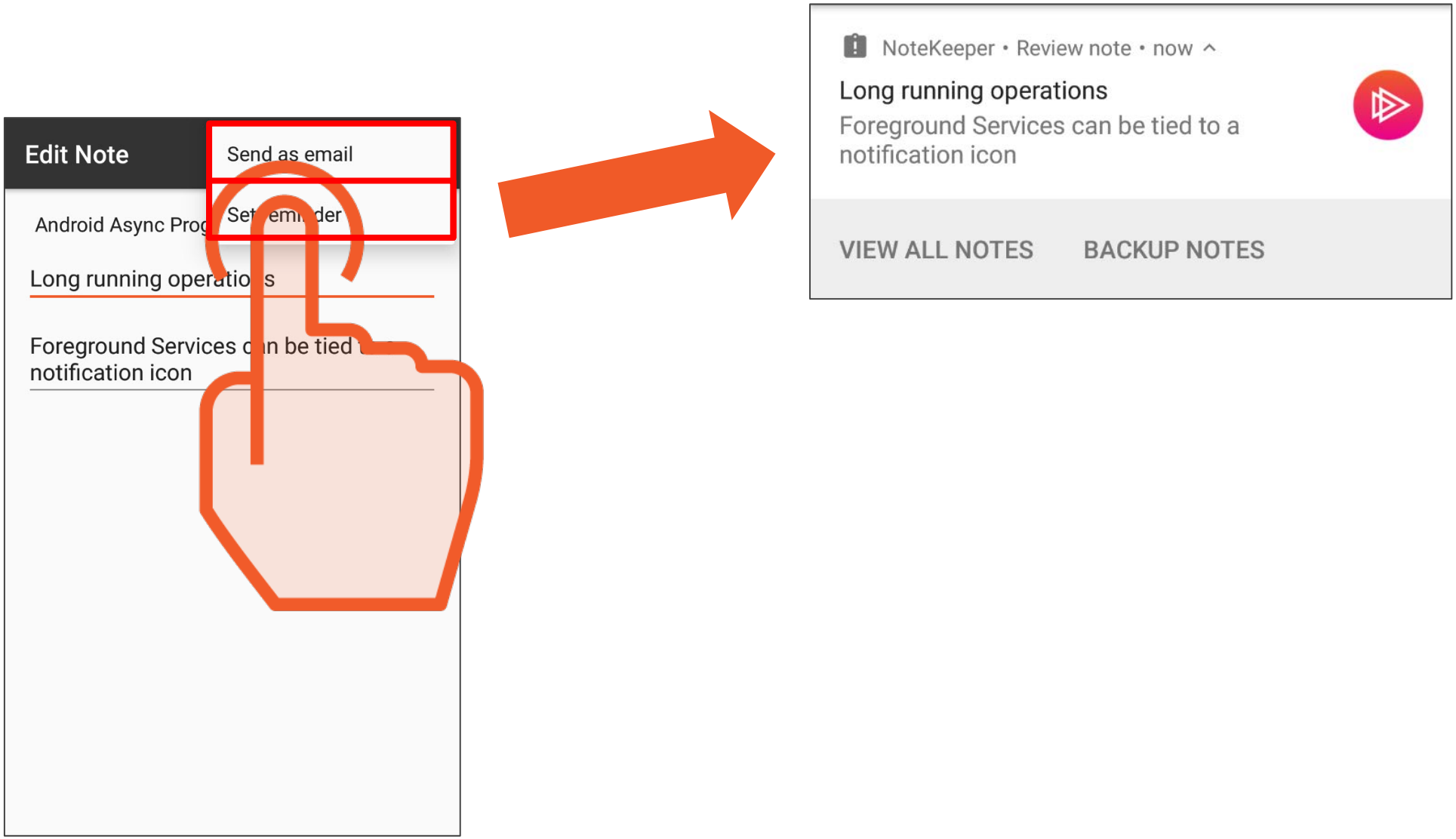
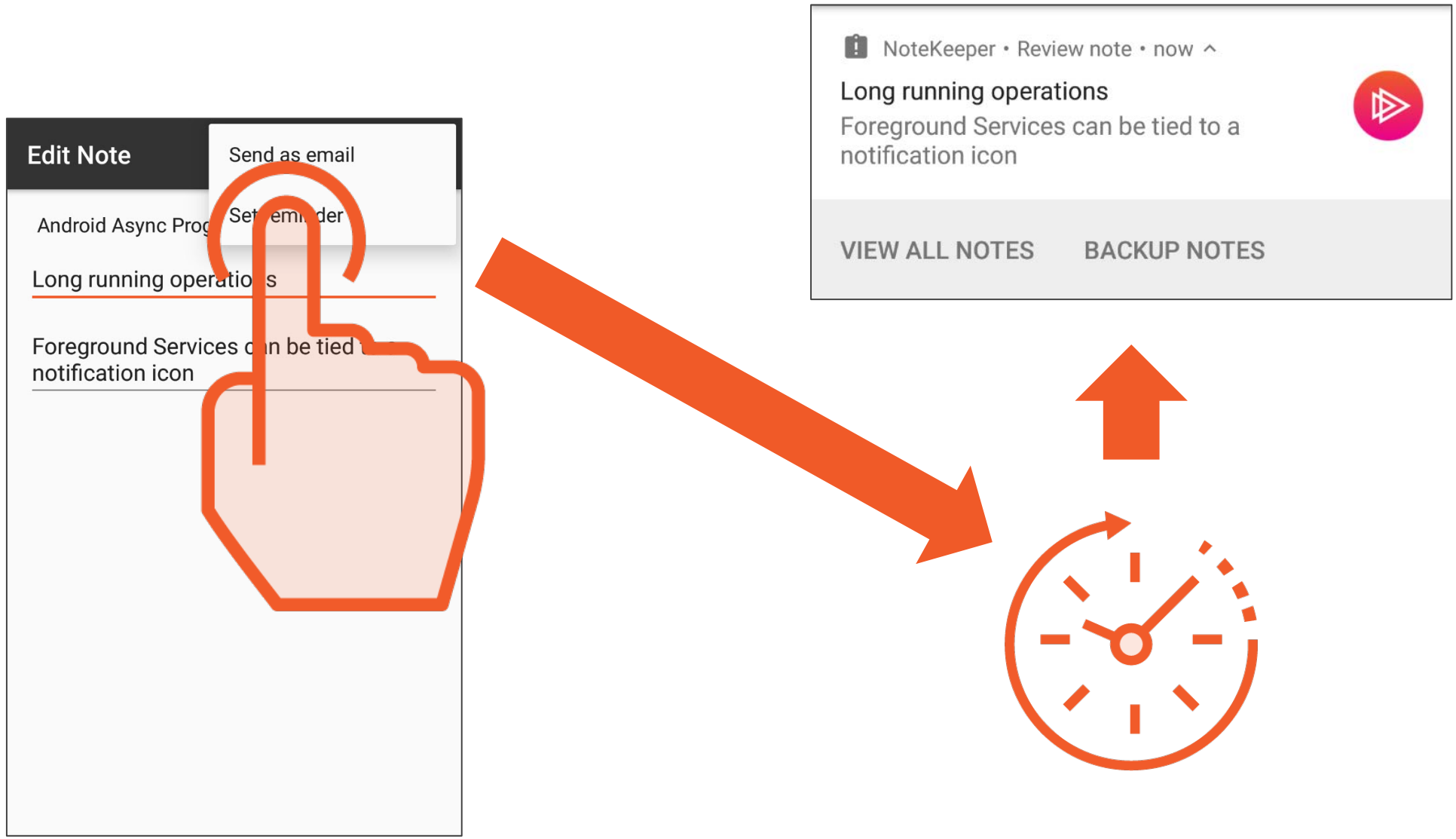
What to Expect from This Module

- Improving Our App's Note Reminder Feature
- Alarm Manager
- Associating a Broadcast Receiver
- Setting an Alarm
- Displaying a Note Reminder with an Alarm

Our App's Note Reminders



Our App's Note Reminders



Possible Options for Notification Timing

Handler

- Post to handler with a delay
- Problem: app must be running

Job Scheduler

- Set minimum latency for the job
- Problem: actual latency may be longer

Alarm Manager

Alarm manager

- Provides reliable timing behavior
- Not tied to the lifetime of your app

Getting a reference to the alarm manager

- Alarm manager is system service
- Use Context.getSystemService
- Pass ALARM_SERVICE

Alarm Manager

Launches application-defined work

- Work specified using a pending intent

Commonly handled by broadcast receiver

- Often uses manifest declared receiver
- Allows work to be performed even if app not currently running

Setting the Alarm

Setting a single alarm

- Use set method
- Operation performed at specified time

Setting repeating alarm

- Use setRepeating method
- Operation performed at specified time
- And at specified repeat interval
- Continue until AlarmManager cancel method called

Setting the Alarm

Can set with two different time types

- Each intended for specific scenario

Elapsed real time

- Useful when setting a relative time
- Commonly used in conjunction with SystemClock.elapsedRealTime method

Real time clock

- Useful when setting an absolute time
- Commonly used in conjunction with Calendar class

Setting the Alarm

Device may be asleep when alarm goes off

- Should alarm wait until device awakes?
- Should alarm awake device?

Elapsed real time constants

- ELAPSED_REALTIME
- ELAPSED_REALTIME_WAKEUP

Real time clock constants

- RTC
- RTC_WAKEUP

Summary

Alarm manager

- Provides reliable timing behavior
- Not tied to lifetime of your app

Launches application-defined work

- Work specified using a pending intent
- Commonly handled by broadcast receiver

Summary

Can set different types of time

- Elapsed real time for relative alarms
- Real time clock for absolute alarms

Device may be asleep when alarm goes off

- Can force device to awake if necessary
- Generally want work to wait until device awakes