



Application development for mobile devices

Service

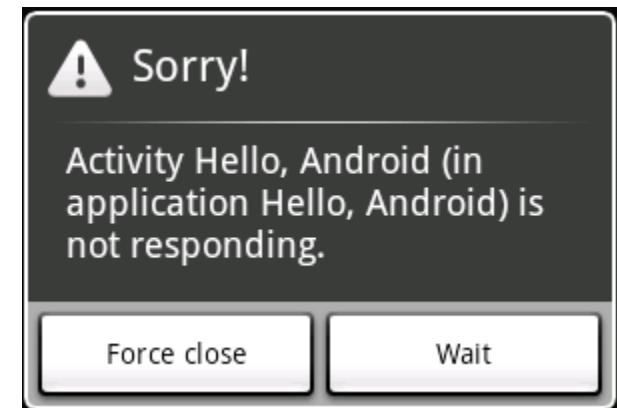
Themes

- ANR
- Couroutines
- Handler & Looper
- Service

ANR

- Application Not Responding
 - With the graphical interface > 5 s
 - At broadcast receivers > 10 s
 - Indication of too long operation on the main thread

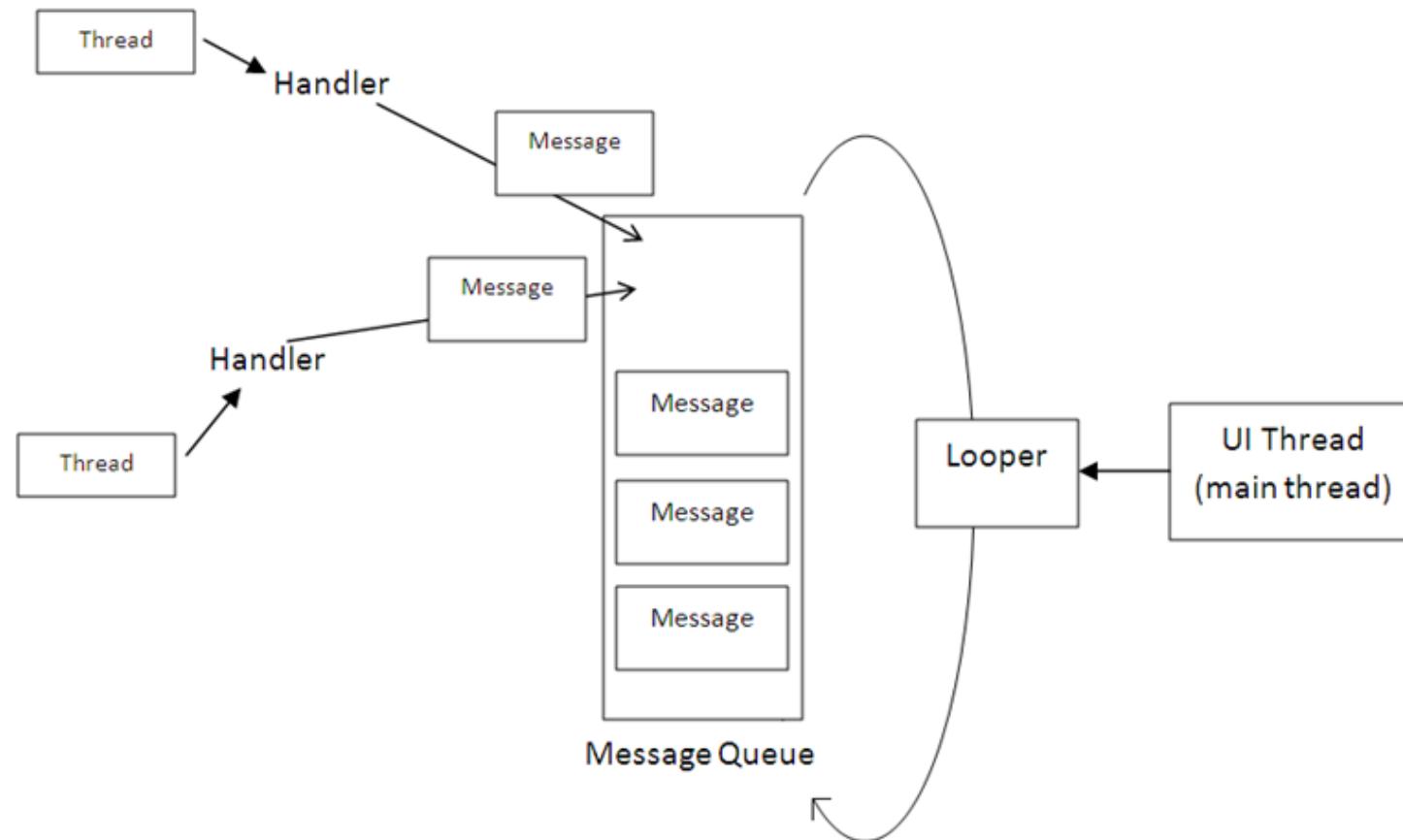
- On another thread
 - Internet access
 - Access to the base
 - Access to the content provider



Coroutines

- *Design pattern* for concurrency
- Similar to `async / await`
- Asynchronous execution
- Features
 - Integrated into Android
 - Lightweight
 - Fewer memory leaks

Looper & Handler



Source: <https://www.dev2qa.com/android-thread-message-looper-handler-example/>

Looper & Handler

- Interprocess communication
- Message Queue – queue of messages for processing
- Handler – enables the message to be queued
- Looper – a flywheel that reads messages from the queue and executes them
- Thread – background job in the form of a message

Services

Service

- Intended to perform longer background operations
 - Data synchronization with the server
 - Downloading images
 - ...
- It has no graphical interface
- High priority



Service

- Application component
 - declared in the manifest
- It is launched from other components
 - activities, broadcasting receivers and other services
- There is always one instance of a service



Service.onStartCommand

- Called every time `startService()` is called
- It processes the request, that is, the intent

```
fun onStartCommand(intent: Intent, flags: Int, startId: Int)
```



It is executed on the main thread of the application

- it is necessary to start a new thread and process the intent

onStartCommand – return value

- It governs what happens to a service if Android removes it from the stack

`START_STICKY`

It will always restart, but the intent will be null

`START_NOT_STICKY`

It will only restart if there are unhandled
`startService` methods

`START_REDELIVER_INTENT`

`START_STICKY` +
the intent will be forwarded

JobIntentService

- asynchronous operations
- *onHandleWork (Intent)* - executed in the background
- It destroys itself
- It is not designed to be stopped

Demo

- Services app



[Source: http://www.jnhsolutions.com/contact-us/request-a-demo/](http://www.jnhsolutions.com/contact-us/request-a-demo/)



Thank you for
attention!