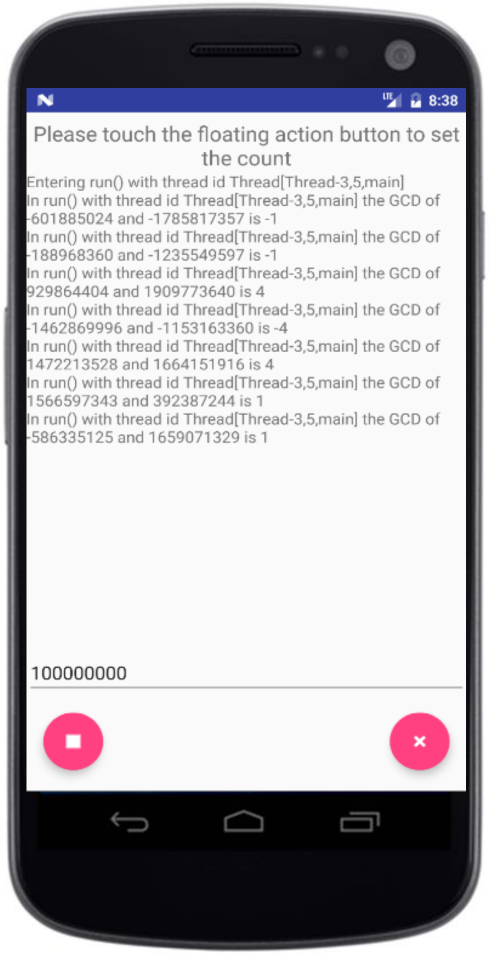
Managing the Java Thread Lifecycle: Example Application

Douglas C. Schmidt
d.schmidt@vanderbilt.edu
www.dre.vanderbilt.edu/~schmidt

Institute for Software
Integrated Systems
Vanderbilt University
Nashville, Tennessee, USA

Learning Objectives in this Part of the Module

- Learn how the GCD Interrupted program works



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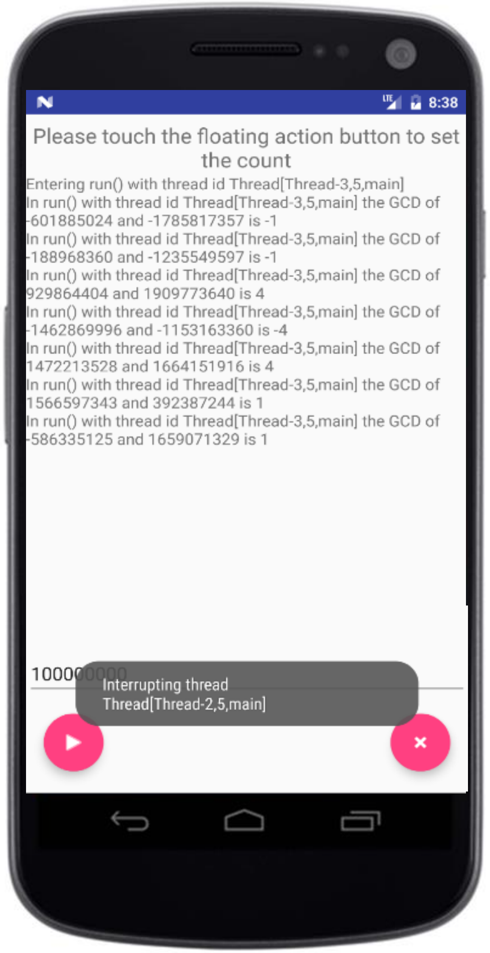
```
Entering run() with thread id Thread[Thread-3,5,main]
In run() with thread id Thread[Thread-3,5,main] the GCD of
-601885024 and -1785817357 is -1
In run() with thread id Thread[Thread-3,5,main] the GCD of
-188968360 and -1235549597 is -1
In run() with thread id Thread[Thread-3,5,main] the GCD of
929864404 and 1909773640 is 4
In run() with thread id Thread[Thread-3,5,main] the GCD of
-1462869996 and -1153163360 is -4
In run() with thread id Thread[Thread-3,5,main] the GCD of
1472213528 and 1664151916 is 4
In run() with thread id Thread[Thread-3,5,main] the GCD of
1566597343 and 392387244 is 1
In run() with thread id Thread[Thread-3,5,main] the GCD of
-586335125 and 1659071329 is 1
```

100000000



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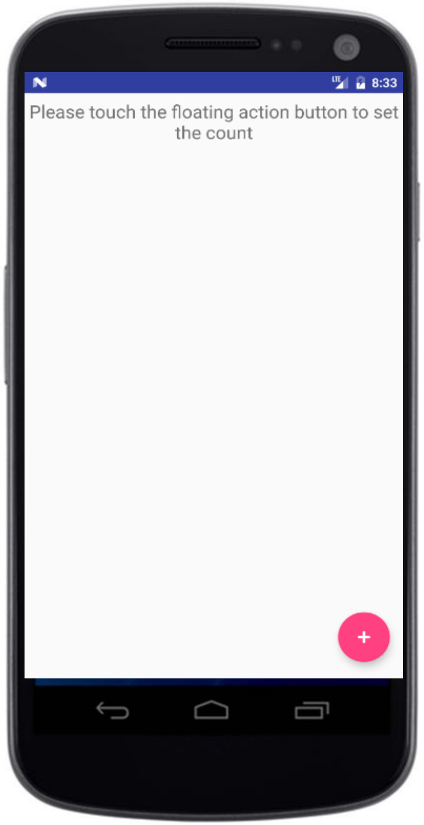
Interrupting thread Thread[Thread-2,5,main]

See github.com/douglascraigschmidt/POSA/tree/master/ex/M3/GCD/Interrupted

Runtime Behavior of the GCD Interrupted App

Runtime Behavior of the GCD Interrupted App

- Use a thread to compute the greatest common divisor (GCD) of two #'s
  - GCD is the largest positive integer that divides two integers without a remainder



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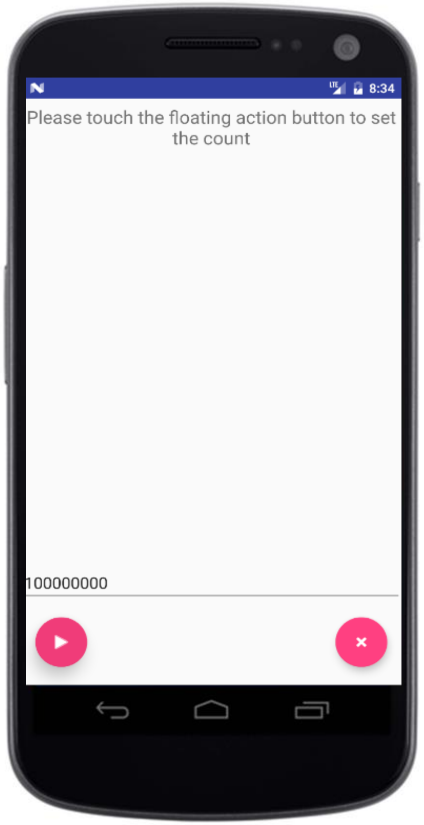

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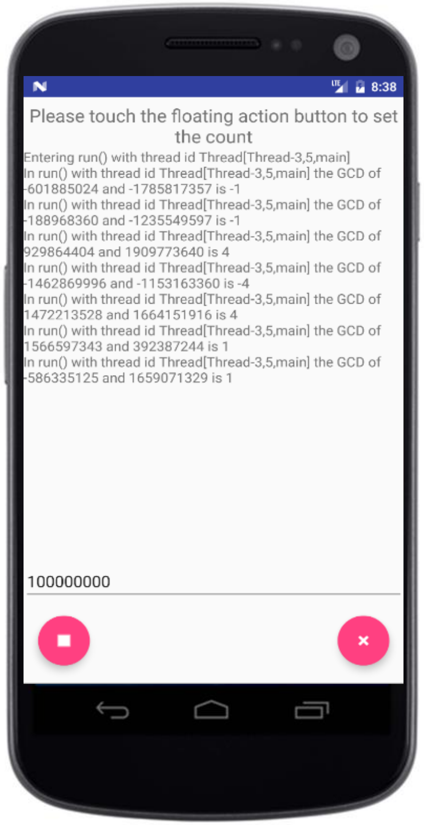

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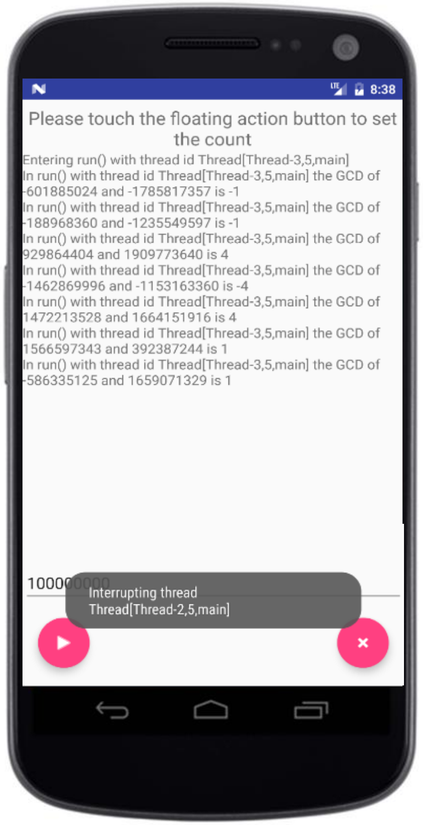

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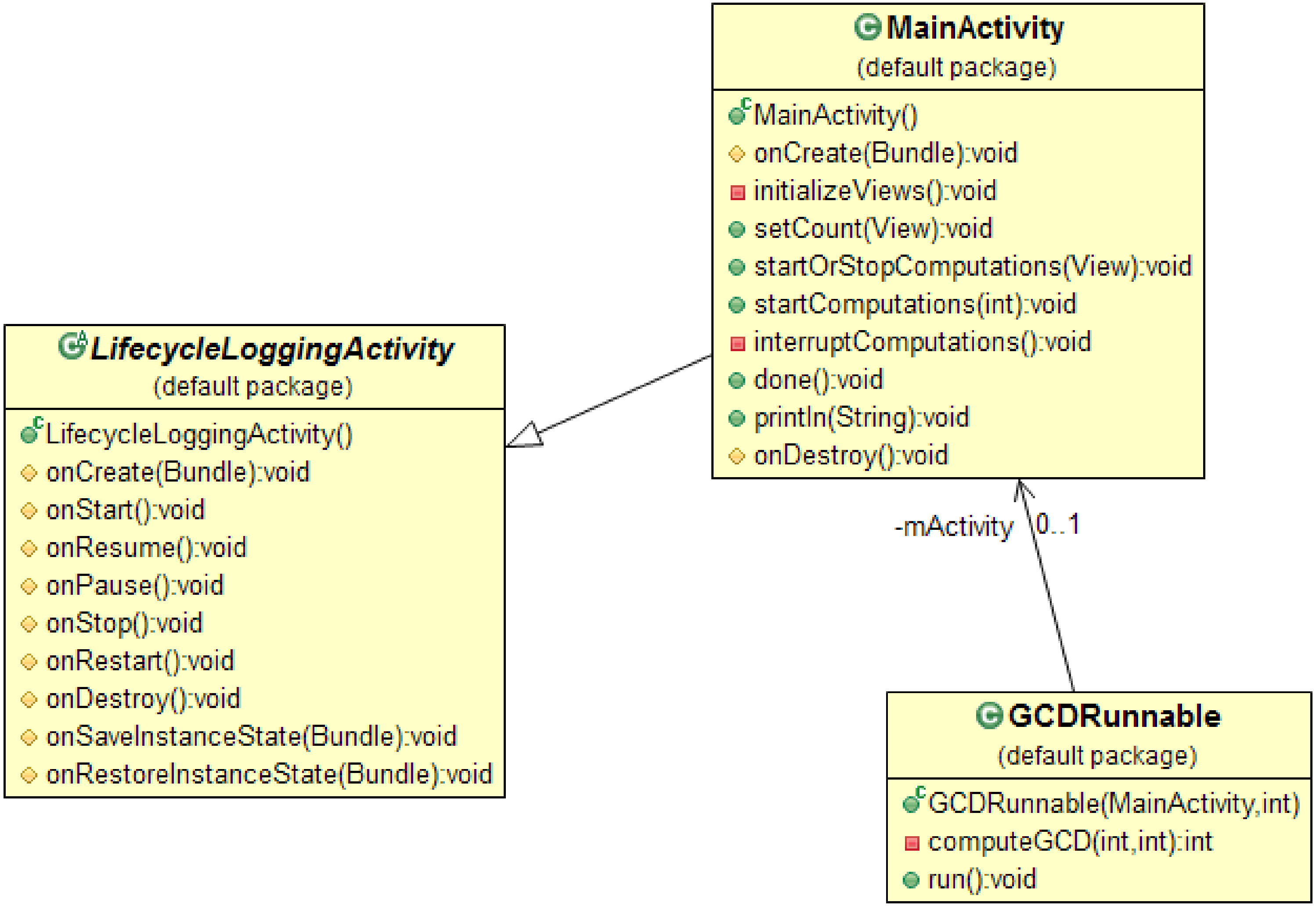
Interrupting thread
Thread[Thread-2,5,main]

The user can interrupt the GCD computation at any point

Implementation of the GCD Interrupted App

Implementation of the GCD Interrupted App

- This app showcases the Java Thread start() & interrupt() methods



See github.com/douglascraigschmidt/POSA/tree/master/ex/M3/GCD/Interrupted

Implementation of the GCD Interrupted App

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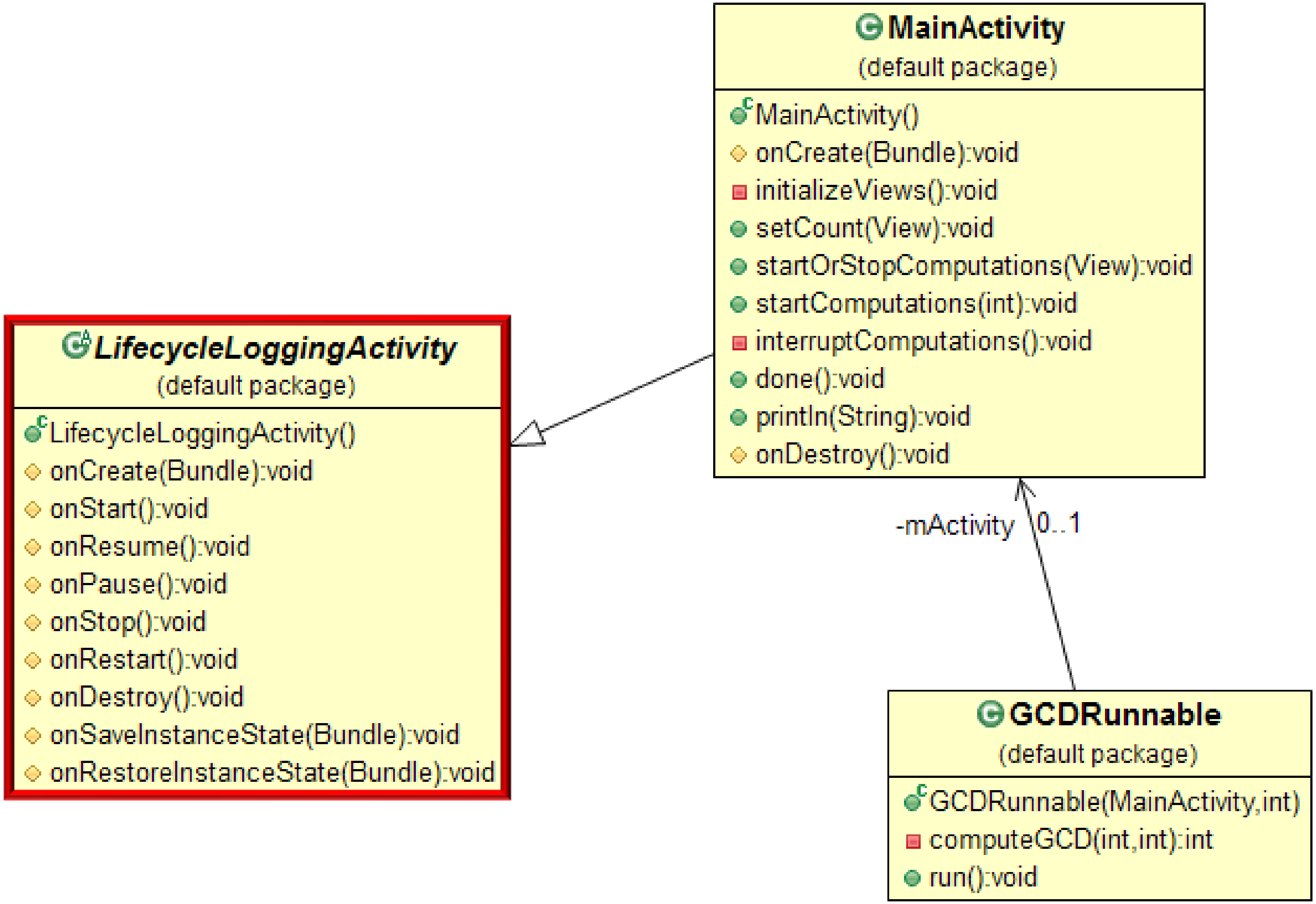
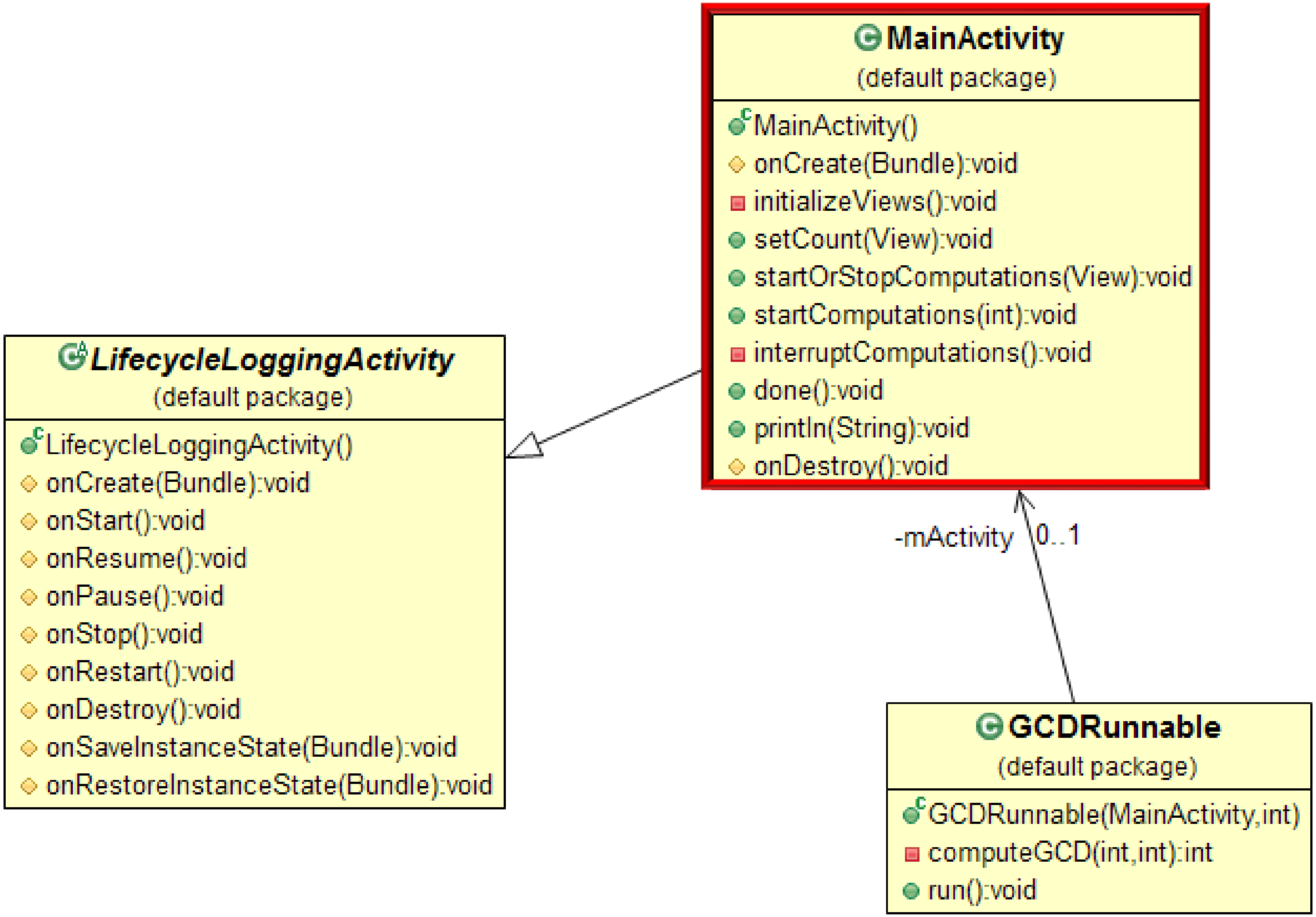


Super class that automatically logs lifecycle hook method invocations to aid debugging

Implementation of the GCD Interrupted App

- This app showcases the Java Thread start() & interrupt() methods



Start/interrupt a Java thread that repeatedly computes the GCD of two random #'s

Implementation of the GCD Interrupted App

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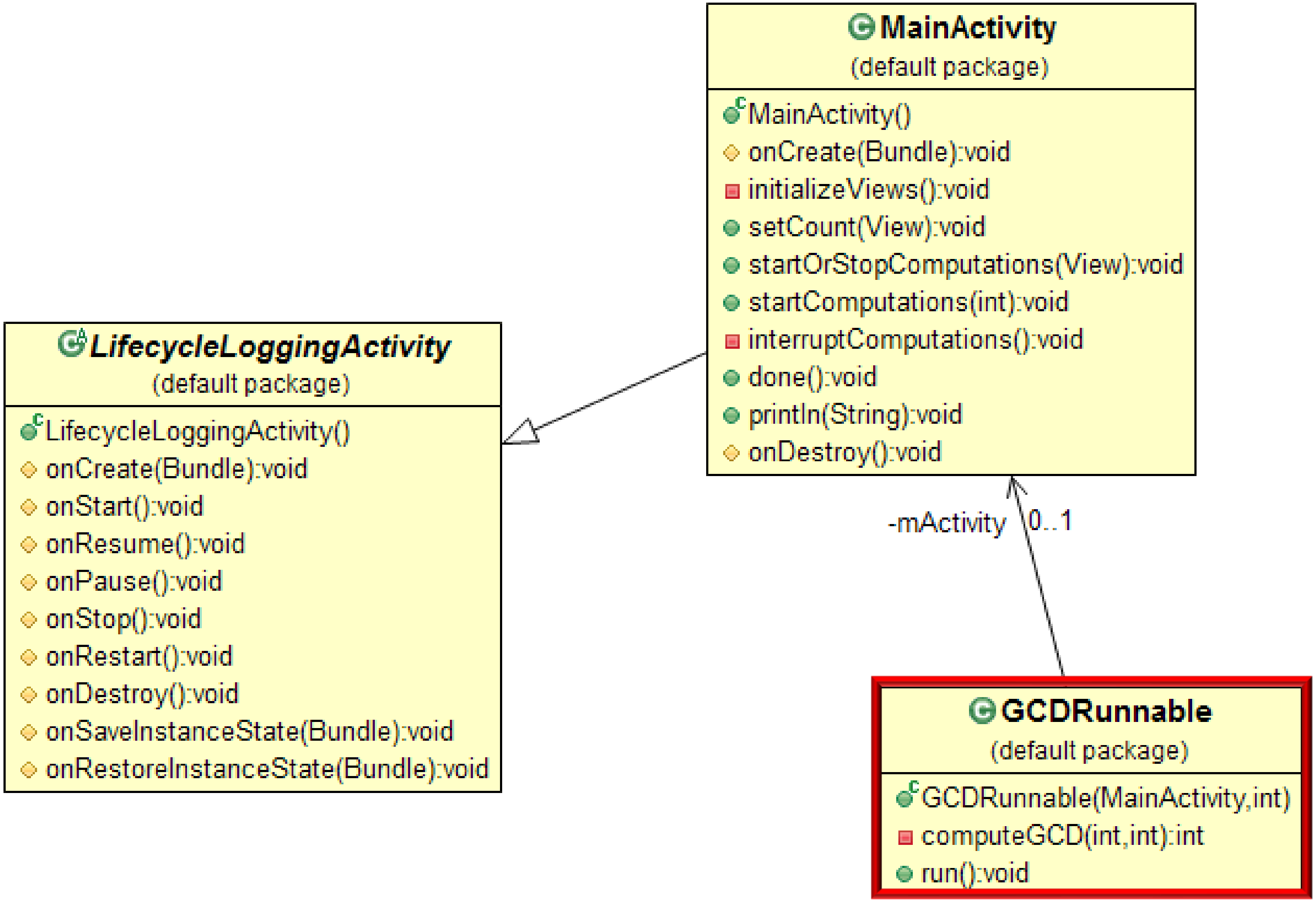

Runs in a thread repeatedly computing GCD of two #'s & can be interrupted

End of Managing the Java Thread Lifecycle: Example Application