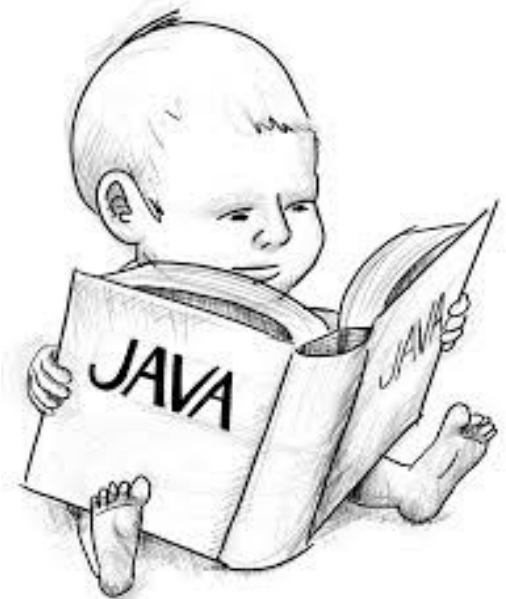# Advanced Java

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Course Responsible

DIKU

Course Structure

- Divided into lecture and lab sessions.

  - Lectures in the morning. (9:15 - 12)   In Lille UP1

  - Lab sessions in the afternoon. (13:15 – 17:00)

- 5 day intensive workshop course.

- An assignment a day keeps the course from going astray.

  - Midnight deadlines. Use the lab sessions.

- Work in groups of 3 (advisable).

- No ECTS, a certificate for successful completion.

  - Attend 4/5 lectures.

  - Pass 4/5 assignments. First 3 assignments are mandatory.

Tentative Course Roadmap

- Day 1: Concurrency and Unit Testing

  - Unit Testing using Junit.

  - The need for concurrency.

  - Basic Threads.

- Day 2: Concurrency and communication

  - Atomicity.

  - Memory Consistency.

  - Liveness.

  - Basic Synchronization.

  - High level concurrency.

Tentative Course Roadmap

- **Day 3: Using Jetty for communication**
  - Request Response model.
  - Using HTTP for communication.
  - Embedding Jetty.
  - Starting a server.
  - Sending and receiving HTTP messages.
  - Other Jetty features.

- **Day 4: Reflection and Generics**
  - The role of Reflection.
  - The utility of Generics.

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Tentative Course Roadmap

- Day 5: JVM Tuning, JDBC and others

  - Introduction to JDBC.

  - A cool database engine (surprise).

  - Database connectivity using JDBC.

  - Performance tuning of JVM.

  - Profiling, inlining, garbage collection.

  - Questions about any of the five days.

  - Feedback.

  - And then you are on your own !! Good luck !