

# Advanced Concepts and Modern Techniques: Introduction to Java/Jakarta EE

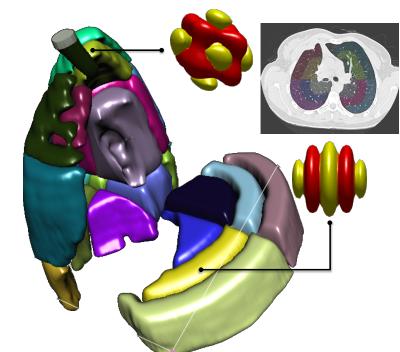
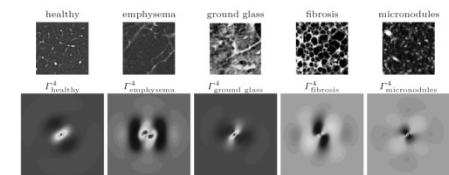
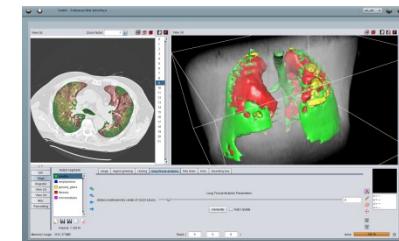
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Module 635-1 – C1  
Prof. Dr. Adrien Depeursinge



# Adrien Depeursinge (PhD)

- 2000-2005 B.Sc. and M.Sc. in Electrical Engineering  
Swiss Federal Institute of Technology (EPFL)
- 2006-2010 Ph.D. in Medical Image Analysis (MIA)  
University Hospitals of Geneva (HUG),  
National University of Singapore (3 months)
- 2010 iPhone Development “HealthPedia”  
Health On the Net Foundation, Geneva
- 2010-2012 Postdoc in Multidimensional MIA  
HES-SO Valais, HUG
- 2013-2014 Postdoc in Quantitative MIA  
Stanford University, CA, USA
- 2015-2018 Research Associate in MIA  
EPFL
- 2014- Prof. in eHealth  
HES-SO Valais
- 2018- Senior Researcher in Personalized Medicine  
Lausanne University Hospital (CHUV)



# Moodle Key, Development environment and MS Teams

1. Cyberlearn link, join with key:

**JAKARTA2023**

2. Follow the instructions under

“Prog setup” in Moodle in

SECTION 1 to setup the development environment that will be used for all labs and the mini project

3. Join the team “635-1” on MS Teams

# Goals of the course

1. Understand the concepts to **architect and implement a multi-tier enterprise application with **Java (Jakarta) Enterprise Edition (EE)** :**
  - Understand all different layers in a multi-tier application
  - Know the related technologies (APIs) in Java EE
  - Implement examples that use those technologies
    - Several labs and a mini project

# Bibliography Java/Jakarta EE

- Java EE 5, Les cahiers du programmeur, Antonio Goncalves, Eyrolles, 2nd edition.

le plus didactique, mais un peu vieux  
Conceptes fondamentaux



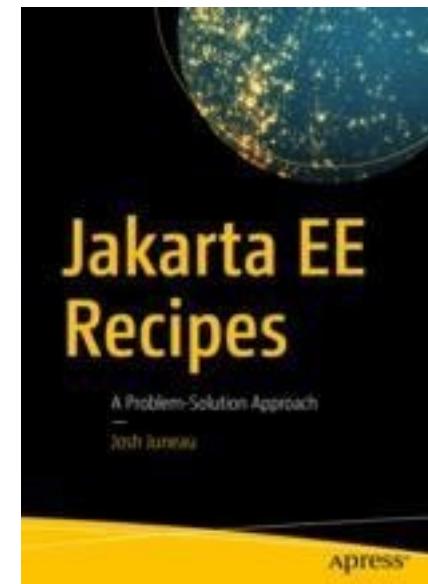
- Java EE 5, 6, 7 & 8 Tutorials (Oracle)

<http://www.oracle.com/technetwork/java/javaee/overview/index.html>

- Jakarta EE 9 Tutorials (Eclipse)

<https://eclipse-ee4j.github.io/jakartaeetutorial/>

- Jakarta EE Recipes, A Problem-Solution Approach, Josh Juneau, Apress. Available online: [go.oreilly.com/hes-so](http://go.oreilly.com/hes-so)



# Labs

- For each main topic, you will realize a lab.  
It should be done **individually**.
- Each lab (code or report) must be **uploaded** on the Moodle Web site under “Devoir – TPXX” before 11:59pm on the day preceding the next course.
- Each of you (sometimes in duo, sometimes twice) will **present** the solution at the beginning of the next course (10min presentation + 5min discussion)
- The **solution** will be uploaded after the presentations

# Labs presentation schedule (can be modified)

Pas de note

| Student groups                              | topic      | date       |
|---|------------|------------|
| De Blasi Simon, Marguet Romain              | Exercice 1 | 03.03.2023 |
| Bétrisey Julienne, Rey Guillaume            | TP01       | 04.03.2023 |
| Salamin Bastien                             | TP02       | 10.03.2023 |
| Renna Zacharie                              | TP03       | 10.03.2023 |
| Vialard Céline                              | TP04       | 10.03.2023 |
| Martroye de Joly Alexandre, Tapparel Océane | TP05       | 11.03.2023 |
| Brouchoud François                          | TP06       | 17.03.2023 |
| Gomez Cabeiro Sergio, Michelet Arnaud       | TP07       | 17.03.2023 |
| Clerc Théo                                  | TP08       | 17.03.2023 |
| Dellea Jérémie, Borrajo Elias               | TP09       | 24.03.2023 |
| Keller Benjamin                             | TP10       | 21.04.2023 |
| Bourquin Jonathan                           | TP11       | 28.04.2023 |
| Avez Arthur, Lonfat Milena                  | TP12       | 12.05.2023 |
| Del Buono Luca                              | TP13       | 13.05.2023 |
| Depeursinge Adrien                          | TP14       | 13.05.2023 |

- Please come 5min earlier for setting up the beamer
- Questions:** do not hesitate to visit me in Technopole for questions. Please send me an email before: [adrien.depeursinge@hevs.ch](mailto:adrien.depeursinge@hevs.ch)

note CC

# Java EE Mini Project

(12.05.2023 - 16.06.2023)

- Use most of the learned techniques in the course
- Groups of **two students**
- Mark for the **midterm exam**
- Project **presentations** on June 16 2023
- Every student duo receives a subject with some data tables on which they must **create a mini information system in Java/Jakarta EE**

| Nr | Topic           | Entity 1      | Entity 2 | Entity 3  |
|----|-----------------|---------------|----------|---|
| 1  | Marathon        | Athlete       | Time     | Event   |
| 2  | Travel          | Passenger     | Flight   | Destination   |
| 3  | Car selling     | Owner         | Car      | Car Brand   |
| 4  | House selling   | Owner         | House    | Location  |
| 5  | Football        | Player        | Club     | League  |
| 6  | University      | Professor     | Courses  | Research Projects                                   |
| 7  | Office          | Employee      | Office   | Department  |
| 8  | Music           | Singer / Band | Song     | Album   |
| 9  | Book            | Writer        | Book     | Category  |
| 10 | Shopping        | Customer      | Product  | Order   |
| 11 | Weather         | Date          | Weather  | Location  |
| 12 | Series          | Viewer        | Episode  | Season  |
| 13 | Movie           | Viewer        | Movie    | Category  |
| 14 | Network         | User          | Device   | Operating System                                    |
| 15 | Video game      | Developer     | Game     | Category  |
| 16 | School          | Student       | Mark     | Subject   |
| 17 | Politics        | Politician    | Party    | Position (e.g. municipal Council / Federal Council) |
| 18 | Olympics        | Athlete       | Sport    | Position  |
| 19 | Restaurants     | Owner         | Ratings  | Menu  |
| 20 | Holidays        | Country       | Hotel    | Activity  |
| 21 | War             | Country       | Weapons  | Leader  |
| 22 | Panini stickers | Collector     | Image    | Country   |

# Schedule (can be modified)

| course date | content                                  | room                                     |
|-------------|--|--|
| 24.02.2023  | Java EE: C1 + C2 + Exercise1             | Friday 10:20-11:50, Bellevue 203         |
| 03.03.2023  | Java EE: C3 + TP1                        | Friday 10:20-11:50, Bellevue 203         |
| 04.03.2023  | Java EE: C4 + TP2 + C5 + TP3 + C6 + TP4  | Saturday 8:15-13:15, Bellevue 203        |
| 10.03.2023  | Java EE: C7 + TP5                        | Friday 10:20-11:50, Bellevue 203         |
| 11.03.2023  | Java EE: C8 + TP6 + C9 + TP7 + C10 + TP8 | Saturday 8:15-13:15, Bellevue 203        |
| 17.03.2023  | Java EE: C11 + TP9                       | Friday 10:20-11:50, Bellevue 203         |
| 24.03.2023  | Java EE: C12 + TP10                      | Friday 10:20-11:50, Bellevue 203         |
| 21.04.2023  | Java EE: C13 + TP11                      | Friday 10:20-11:50, Bellevue 203         |
| 28.04.2023  | Java EE: C14 + TP12                      | Friday 10:20-11:50, Bellevue 203         |
| 12.05.2023  | Java EE: C15 + TP13 + MiniProject        | Friday 10:20-14:15, Bellevue 203         |
| 13.05.2023  | Java EE: C16 + TP14                      | Saturday 8:15-9:45, Bellevue 203         |
| 26.05.2023  | Java EE: MiniProject                     | Friday 10:20-11:50, Bellevue 203         |
| 02.06.2023  | Java EE: MiniProject                     | Friday 8:30-11:50, Bellevue 203          |
| 16.06.2023  | Java EE: Presentations MiniProject       | <b>Friday 10:20-12:35</b> , Bellevue 203 |

# Questions ?