



APPLICATIONS CONCURRENTES, MOBILES ET RÉPARTIES EN JAVA

SOFTWARE ENGINEERING: MODEL AND PROCESS BASED SOFTWARE DEVELOPMENT

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| Lecturers : 16 | TC : 0.0 | PW : 0.0 | Autonomy : 10 | Study : 22 | Project : 0.0 | Language : FR

Objectives

This teaching aims to continue the learning of object programming in Java language thanks to Human-Machine Interfaces (HMI) human-machine interfaces, or how to design ergonomic interfaces; concurrency, or how to use several cores of a microprocessor to perform a calculation in parallel; distributed programming, or how to make remote computers work together on a network (one of the operating principles of cloud computing); mobile programming, or how to program on Android.

Keywords : Computer science, Java, Android, concurrency, parallelism, distributed programming, HCI, user interface.

Programme

- The Java language
- Event-based programming (human-machine interfaces, HMI)
- Concurrent programming (processes, parallel computing)
- Distributed programming (Java RMI)
- Programming for mobile computing devices (Android / Android Studio)

Learning outcomes

- Know how to program in Java an application distributed on several computers linked by a network.
- Know how to develop a concurrent application using several processors.
- Know how to program a user interface (GUI) that is ergonomic and fluid.
- Be able to develop an Android application.

Independent study

Objectifs : Carry out several group tasks aimed at producing a functional application based on the concepts studied in class.

Méthodes : Projects in groups of 2 students, to be carried out in sessions and independently.

Core texts

Luigi Zaffalon, *PROGRAMMATION CONCURRENTE ET TEMPS RÉEL AVEC JAVA*, Presses Polytechniques Romandes, 2007
Reto Meier *DÉVELOPPEMENT D'APPLICATIONS AVANCÉES*, Pearson France, 2012
Serge Ungar, Nazim Benbourahla *DES FONDAMENTAUX DU DÉVELOPPEMENT JAVA À LA MISE EN PRATIQUE D'UNE APPLICATION SOUS ANDROID*, ENI, 2012

Assessment

Final mark = 50% knowledge + 50% Know-How
Knowledge mark = 100% final exam
Know-how mark = 100% continuous assessment