Advanced Software Engineering Internet Applications

Introduction

Advanced Software Engineering /Internet Applications
AS 2020 – Prof. Jacques Pasquier / Arnaud Durand / Pascal Gremaud

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Supporting Team

- **Prof.** Jacques Pasquier (D-402)
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- **Assistant:** Arnaud Durand (C-412)
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  - ^ Main advisor for Python and aiohttp

- **Assistant:** Pascal Gremaud (C-412)
  - ^ pascal.gremaud@unifr.ch
  - ^ Main advisor for Node.js and Koa

Learning Ojectives

- Understanding key Internet technologies for building modern distributed applications (concepts, benefits, drawbacks. …)
    1. Web
    2. Web Services (essentially RESTful ones and the interesting idea of the now obsolete WSDL ones)
    3. Agile Development (Scrum and testing)
    4. Cloud Computing (IasS, PasS, SasS, MarketPlace, …)
    5. SoftEng research interests : Web of Things (WoT) with blockchain and privacy preserving middleware

- Apply these in a software implementation project
    - ∧ Implement a RESTful API to consult data captured by multi-sensor devices; build upon the API to create IoT scenarios, i.e. first a simple mobile and/or a desktop client and secondly a more complex interaction using a workflow engine like Node-RED and external services with mashups (see trsp. 7 for the general architecture).
    - ∧ using agile development practices (Scrum)
    - ∧ and presenting the result at the end of the semester

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Organization – 1 : Generalities

■ Time

Thursdays, 9:15 – 12:00

■ Location

University of Fribourg, Building PER21, Room G230

■ Material

https://ilias.unibe.ch/goto_ilias3_unibe_crs_1841334.html

HS2020 : 1300/2300 Advanced Software Engineering

Tracks T1 (distributed-systems) and T2 (ase)

Organization – 2 : Planning

[Course Detailed Planning (to be completed)](#)

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Organization – 3 : Grading (5 ECTS)

- **Lecture**
  - ∧ Written Exam
    - counts 50% of overall grade
    - 11.02.2020 (exact time to be precised) : 90 min.
- **Project**
  - ∧ Part 1
    - 04.10.2020 (Sunday 24:00) Milestone 1 : Todo-Backend mini project (individual pass or fail)
  - ∧ Part 2
    - Implement the Thingy project in groups of 3-4 using a Scrum development methodology.
    - counts 50% of overall grade
      - team grade (will downgrade underperforming team member if necessary)
    - Presentations
      - 8.10.2020 : Milestone 2 : Presentation of project plan by the groups
      - 17.12.2020 : Milestone 3 : Project presentation and demo (15 minutes plus discussion)
    - prototype
      - Features, code quality, documentation, originality, GUI of the client, connection with a workfolw engine, …
      - 16.12.2019 : development deadline

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Project Soft. Arch. Overview

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