Distributed Programming II

Course Introduction

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Teacher Assistant: Ing. Serena Spinoso

Course Introduction

- Objectives and Program
- Organization
- Textbooks and Teaching Material
- Exam Rules

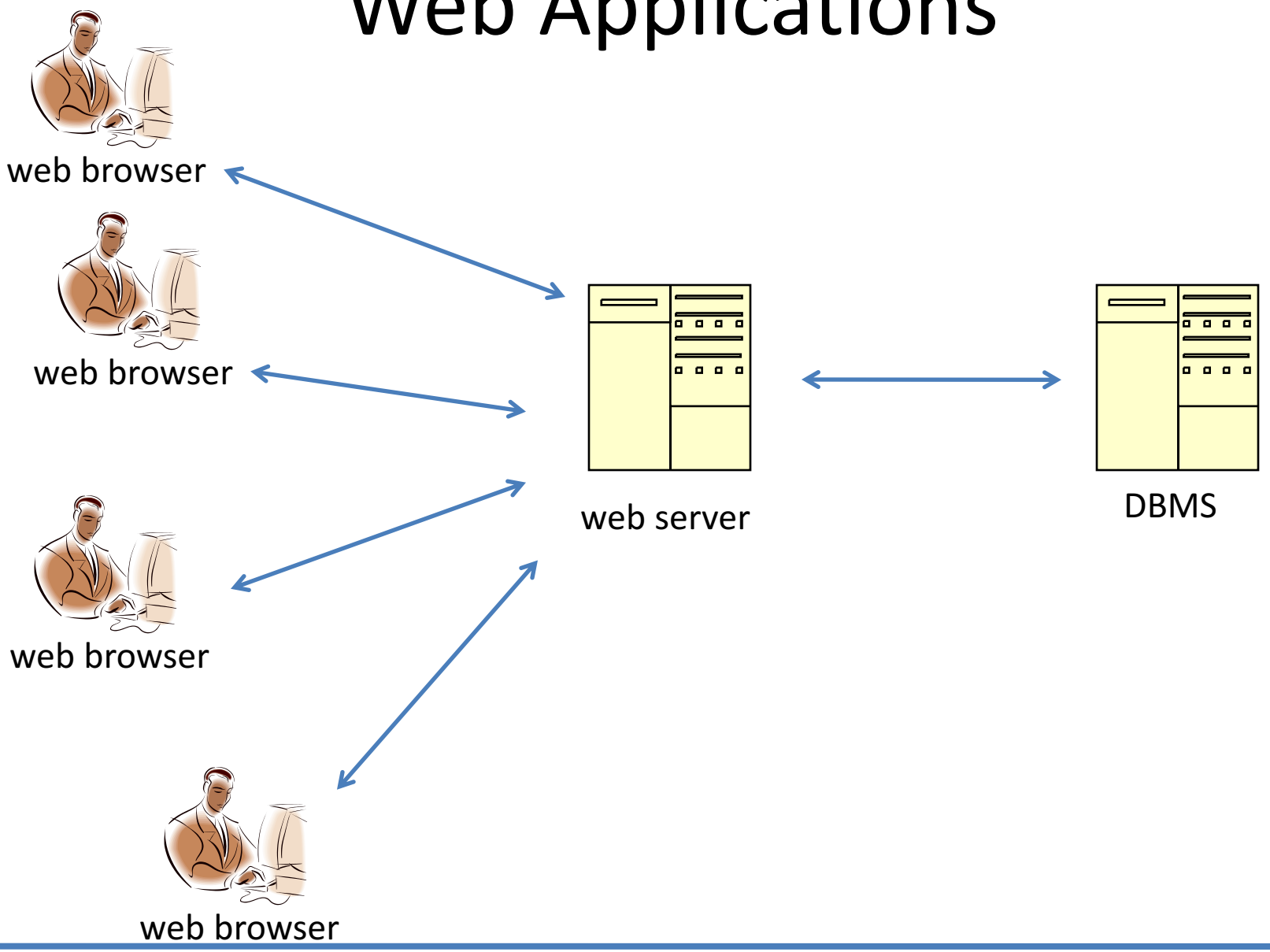
Main Objectives

- Complete the knowledge already acquired in DP1 and OOP:
  - enlarge the knowledge of the main techniques for developing distributed software **applications** (B2B)
  - get skills about:
    - XML programming
    - Web Services programming
  - improve Java programming skills
- Main aspects targeted by the course:
  - robustness, security, portability, interoperability

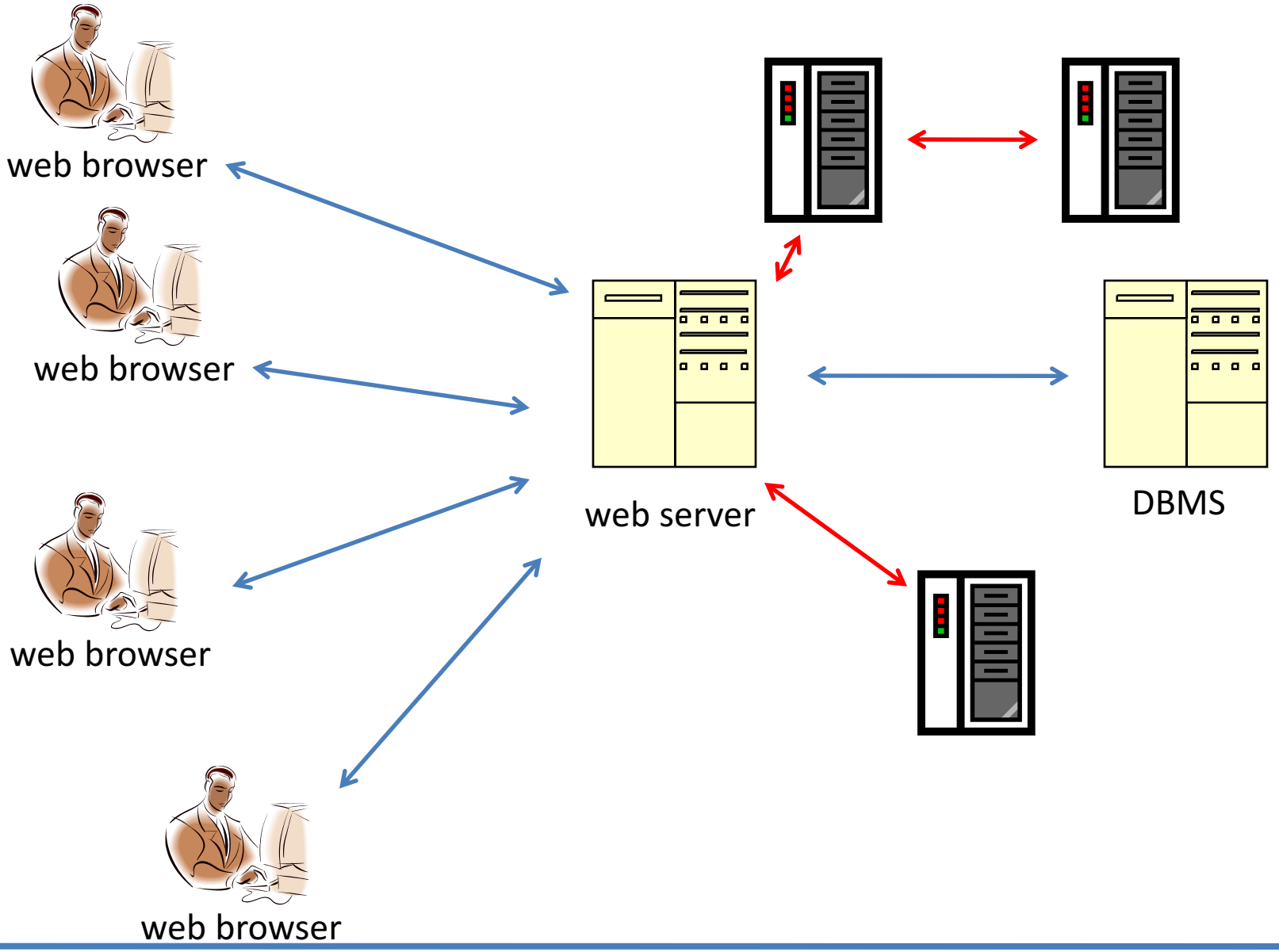
How is the landscape studied in DP1 enlarged in DP2?

- Web services used in **Web applications** for B2B interactions
- Micro services in the **Internet of Things**
- Programmatic access **to Cloud Computing** infrastructures based on web services

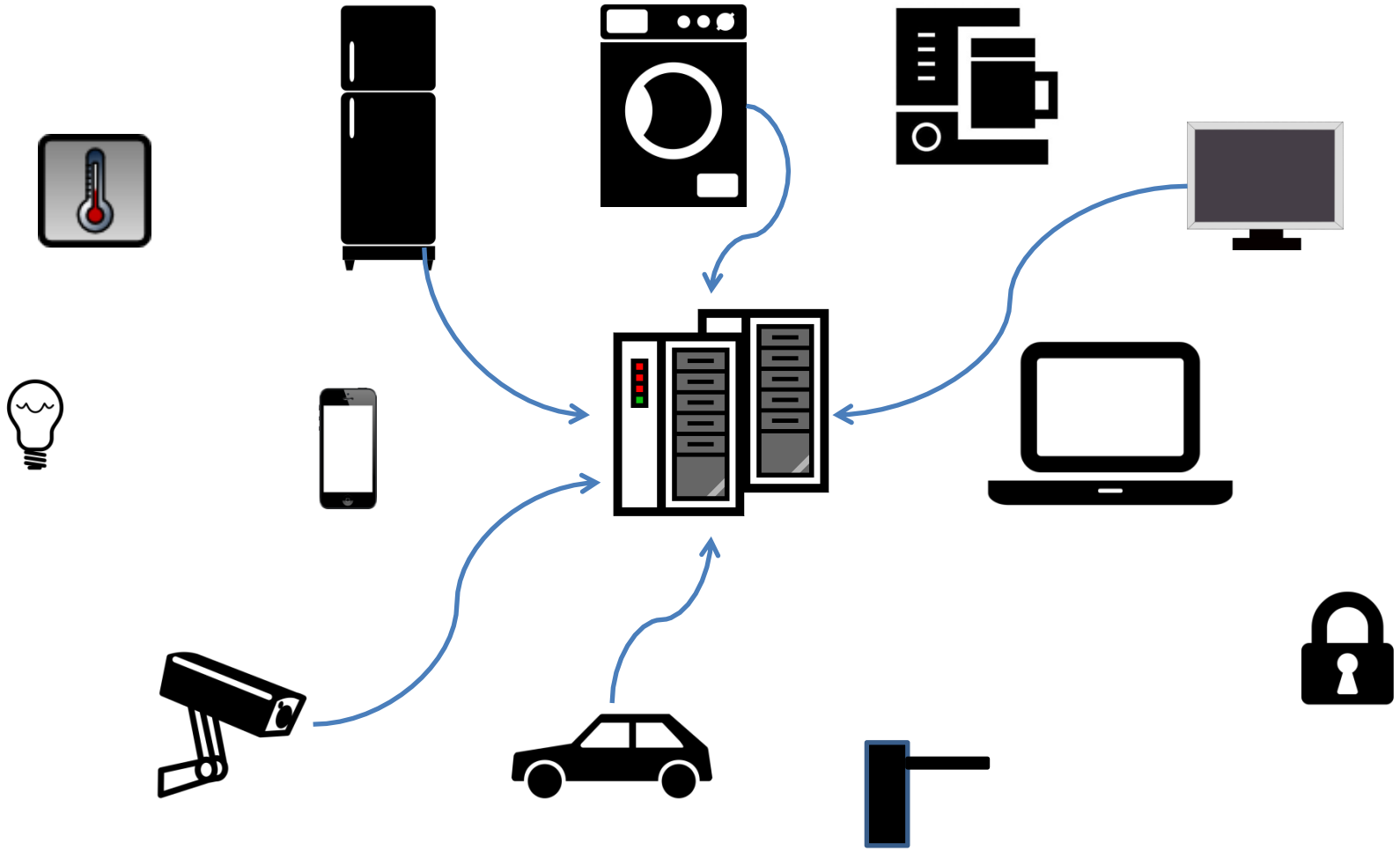
Web Applications



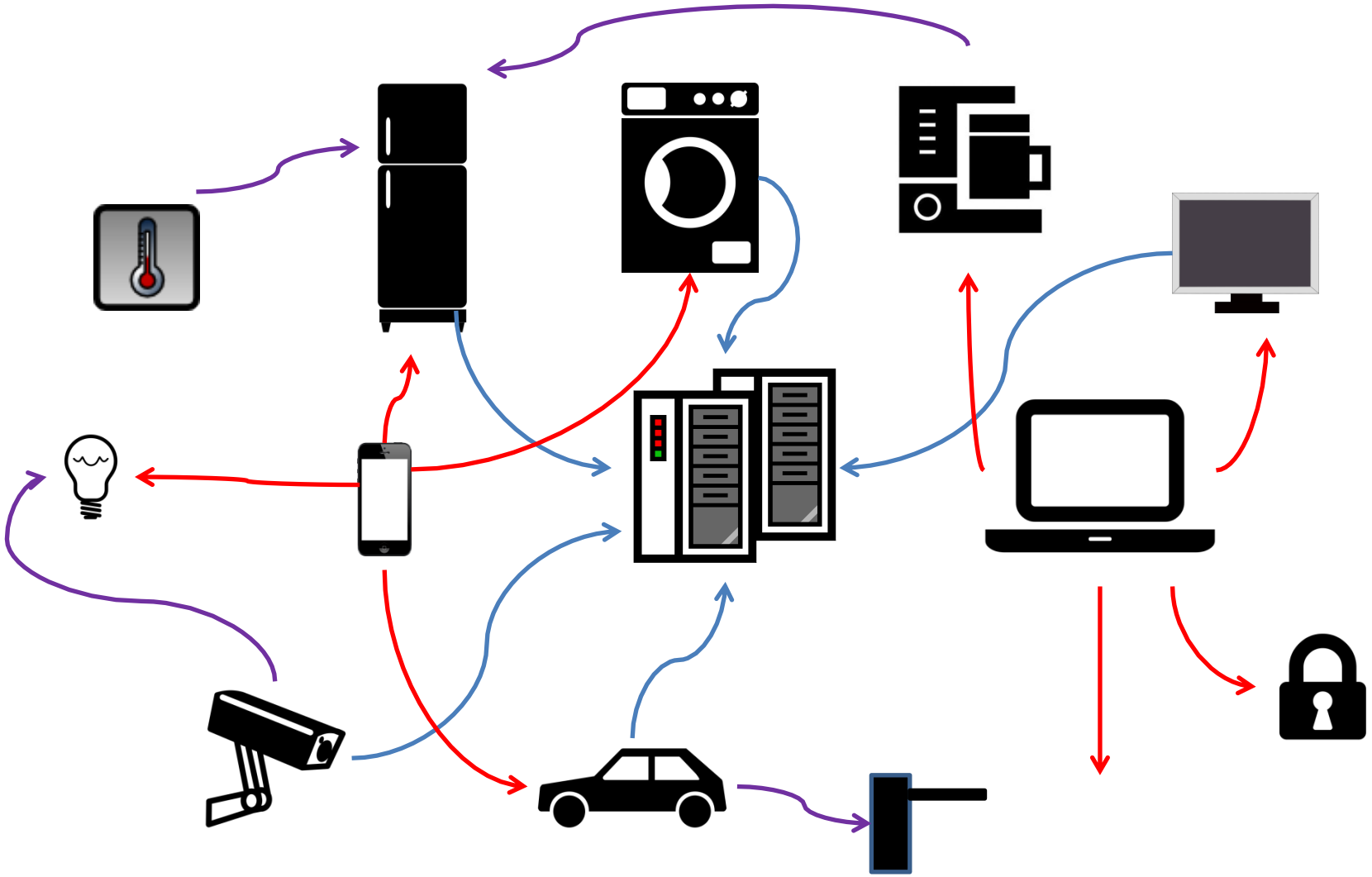
Web services used in **Web applications** for B2B interactions



Internet of Things

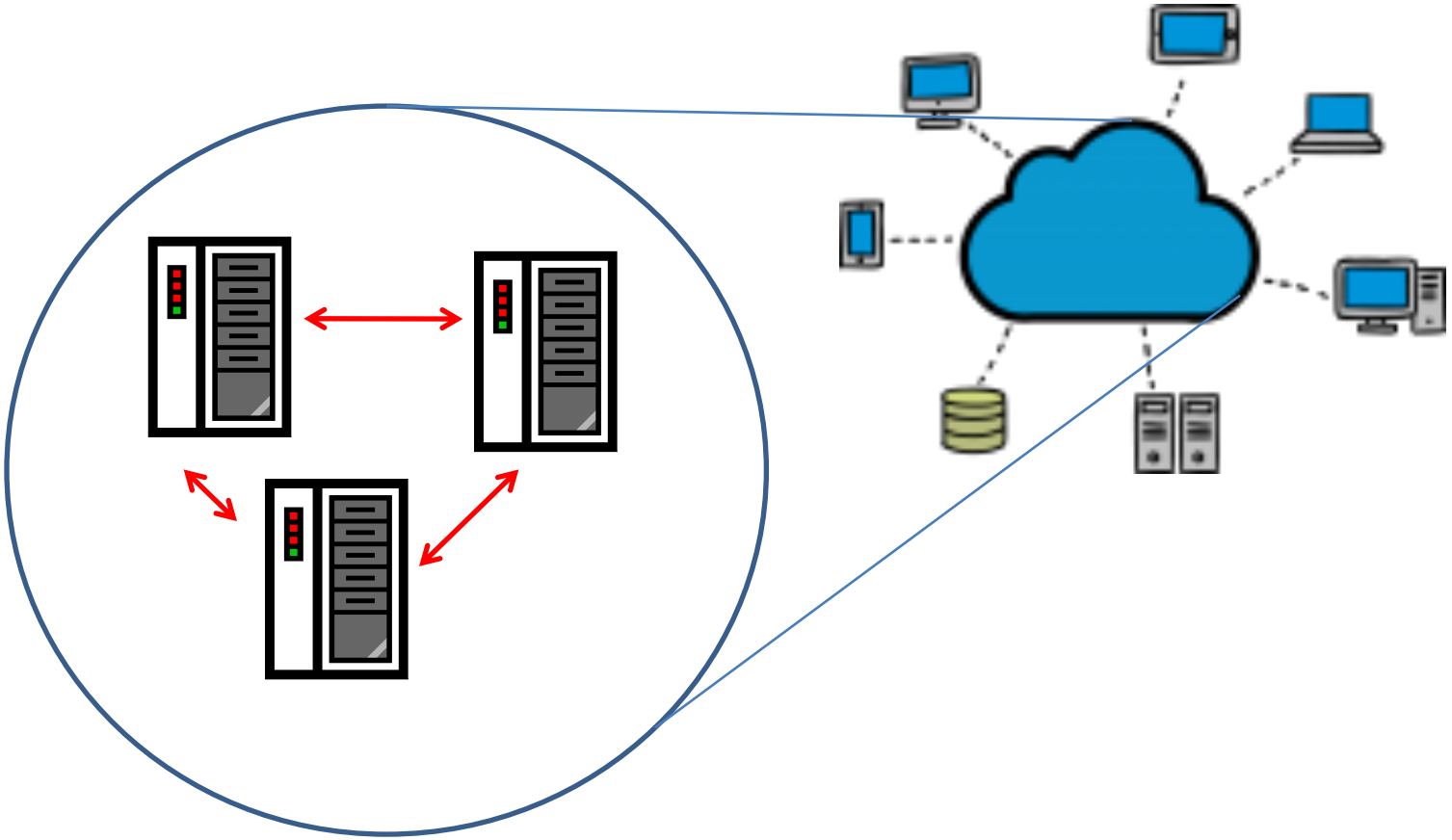


Micro services in the **Internet of Things**



Programmatic access **to Cloud Computing** infrastructures based on web services

Programmatic access **to Cloud Computing** infrastructures based on web services



Course Pre-requisites

- Operating Systems
- Computer Networks
  - in particular, TCP/IP, and HTTP
- Distributed Programming I
  - in particular, web programming
- Object Oriented Programming in Java

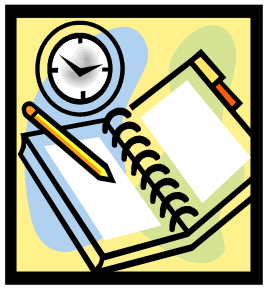
Course Topics

- XML and relative Java programming tools
  - JAXP, JAXB
- Object-oriented, component-oriented, and **service-oriented** distributed architectures
- Web Services and relative Java programming tools
  - JAX-RS
- Further Java programming concepts and tools
  - Build automation (ant), annotations, …

Exercises and Laboratories

- Exercises in classroom:
  - examples and simple exercises on the explained techniques
- Laboratories:
  - assignments to be submitted (mandatory for passing the exam)
  - 1,5 hours/week/student at LABINF:
    - assistance about assignments

Timetable

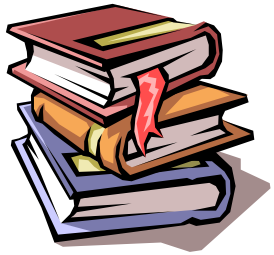


- Lectures
  - Thursdays 13.00-14.30 room 3I
  - Fridays 14.30-16.00 room 3I

- Laboratories (LABINF) :
  - GROUP 1 (A-K) Mondays 13.00-14.30
  - GROUP 2 (L-Z) Mondays 14.30-16.00

LABORATORIES START ON OCTOBER 10!

Textbooks and Teaching Material



- Material available in electronic form:
  - Copy of the slides used for lectures
  - Teaching material / tutorials / readings
  - Reference documents/ standards

  ⇒Course Web Portal:

  https://pad.polito.it https://pad.polito.it:8080

- Video-recording of lectures

Exam Rules

- The exam consists of:
  - The evaluation of the submitted assignments
  - A final test at LABINF (with possible exemption)
  - An optional final discussion

Submitting Assignments Solutions

- Solutions of assignments have to be submitted
  - by the deadline set for each exam call date
  - through the course web portal, which executes some preliminary tests and gives test results.
- IMPORTANT: the submitted solutions must have been developed **individually** and must have not been shared with other students

  => Be very careful in keeping your solutions private!

Admission to Final Test

- Students can be admitted to the final test only if
  - they have submitted the solutions of **all the due assignments** by the published deadline (2 working days before the final test date)

  and
  - the submitted solutions have passed all the mandatory preliminary tests.

Final test date is exam call date

Cross-Checking of Submissions

- Submissions of all students admitted to the exam are cross-checked to detect anomalous situations and to evaluate their originality
- Students whom have been detected cheating incur in immediate exam failure and report to the Authorities of the School

Taking this risk is really not worth!

- Students with similar solutions cannot be exempted from the final test and have mandatory oral exam

Final Test

- The final test is a practical test at LABINF:
  - A final **programming assignment**
  - A **question**
  - Total time: 2-2,5 hours
- The final test can be passed only if the submitted solution passes the mandatory tests (given with the programming assignment)
- The final test is normally based on the submitted assignments. A test simulation will be available

Evaluation and Final Discussion

- The results of the combined evaluation of assignments and final test will be published
  - Assignments: 16-20 points
  - Programming exercise: 0-6 points
  - Question: 0-4 points
- Normally these results are registered directly if the student doesn't show at the final discussion
- Final discussion may include extra questions, which can influence final mark
- Laude requires final discussion with questions

Possible Exemptions

- Students who submit particularly good and original work by the deadline of the **first** exam call are exempted from the Final Test
  - A list of these students and their proposed final marks will be published before the first exam call
  - They may accept mark or go straight to the final discussion
- Same for students who complete a special project or related thesis
  - A (limited) number of these projects/theses will be soon available

Asking for Questions

- Prof. Riccardo Sisto
  - Phone: 011 090 7073,
  - e-mail: riccardo.sisto@polito.it
  - Receives by appointment
- Ing. Serena Spinoso
  - Phone: 011 090 7098
  - e-mail: serena.spinoso@polito.it
  - Receives by appointment