

Pervasive Computing

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KOBE UNIVERSITY – AUGUST 2017

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Questions are welcome during lectures
Private discussions at the end of lectures

Topic of this lecture

Pervasive Computing – using sensors/actuators in the environment in order to provide services to people



Organization

3 days – from Tuesday to Wednesday included

lectures in the morning 8h50 to 12h10 in LR201

Exercises in the afternoon 13h20 to 16h40 in ISTC-A

QCM at the end of the last lecture

Group creation this morning

2 to 4 people in a group

at least one student with JAVA knowledge per group

Lectures

1. Pervasive computing

The purpose of this first lecture is to define the notion of pervasive computing and to place it in a broad context. Precisely, we will talk about the evolution of services in computing science and examine the factors giving rise to pervasive computing. We will also talk about challenges related to pervasive computing and domains of application.

2. Architecture

The second lecture is more technical. The purpose is to see what are the main technical elements of a pervasive systems. It will show you how to build a pervasive service, in terms of software and hardware components.

Lectures

Software challenges

The purpose of this first lecture is to show that software plays an essential role and provides most of the added-value. It also raises formidable challenges which are not really tackled today. We will go through the main challenges in this lecture.

Architecture examples

In this lecture, we will see different types of architectures implementing pervasive services. These architectures are all in conformance with the generic architecture presented in lecture 2. But they present some specificities.

Lectures

Context awareness

We will see that a major aspect of pervasive services is to consider their context of execution. In this lecture, we will define more precisely the notion of context and see how to implement it. This is a very complex subject motivating lots of research today.

Smart homes

This last lecture will focus on the smart home domain which is very popular today. It will be a good way to exemplify what we have seen before. We will go through the needs of smart homes, see the current offers from European, American and Japanese companies. We will also try to identify the current limitations of these offers.

Conclusion

Now, let us have some fun!

listen to the lectures

ask questions

build services with iCasa

Demonstrate