INSA | INSTITUT NATIONAL DES SCIENCES APPLIQUÉES TOULOUSE

Computer science

ECTS
5 crédits

Hourly volume

Introducing

Objectives

At the end of this module, the student will have understood and be able to explain (main concepts):
- Object-Oriented Programming part:
. The principles of object-oriented programming: method call, classes.
.The application of those notions for programming connected objects

- Networks part:
. The basic concepts and techniques allowing interconnecting local area networks in the Internet: repeater, bridge, router
.the basic concepts and techniques allowing interconnecting LAN in the Internet : subnetting, CIDR, VLAN, VPN, applicative proxy, NAT
. the main protocols of the TCP/IP Internet architecture : UDP, TCP, IP, ARP/proxy ARP, ICMP, DHCP, RIP, OSPF, BGP

- Real-Time part:
.Designing real time applications.
. Understand and manipulate a real time kernel.

The student will be able to:
- Oject-Oriented Programming part:
. Develop java applications, using a modular object-oriented style.

- Networks part:
.Do architecture choices allowing to take into account requirements and constraints associated to a LAN interconnection.
. Do basic or complex addressing and routing schemas.
. Set up (administrate) Ethernet and IP networks in the basic and advanced interconnection contexts considered in the course.

- Real-Time part
.Set up a design methodology to respond to a specification.
. Design software architectures for real time applications.
. Ajust the tasks parameters to reach the expected performances.
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- Simulate and analyze real-time applications performance

Necessary prerequisites

Software Engineering, introduction to networking, C programming

Practical info

Location(s)

📍 Toulouse

Non-contractual information