Last update: 18/10/2011

11512 - ARISO 2 - Computer Architecture and Operating Systems II

Coordinating unit: 230 - ETSETB - Escola Tècnica Superior d'Enginyeria de Telecomunicació de Barcelona
Teaching unit: 701 - AC - Department of Computer Architecture
Academic year: 2011
Degree: TELECOMMUNICATION ENGINEERING (Syllabus 1992). (Teaching unit Compulsory)
Credits: 4,5 Teaching languages: Catalan, Spanish

Prior skills

Knowledge of programming, operating systems and basic computer structure.

Requirements

Teaching methodology

Learning objectives of the subject

To develop knowledge related to the perspective of users and programmers of an operating system (UNIX). Introduction to the internal description of the operating system (processor management, memory management and device management). Basic contents of the course are: Operating systems, process comunication.

Content

(ENG) 1. INTRODUCCION A LOS SISTEMAS OPERATIVOS

(ENG) 1.2 HISTORIA DE LOS SISTEMAS OPERATIVOS

(ENG) 1.2 ESTRUCTURA DE UN SISTEMA OPERATIVO

(ENG) 2. SHELL DE UNIX

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(ENG) 2.1 COMANDOS BASICOS DE UNIX

(ENG) 2.2 SCRIPTS DE SHELL

(ENG) 3. MODELO DE PROCESOS

(ENG) 3.1 EL MODELO DE MAQUINA VIRTUAL

(ENG) 3.2 CAMBIO DE CONTEXTO Y POLITICAS DE SCHEDULING

(ENG) 3.2 LLAMADAS AL SISTEMA PARA LA GESTION DE PROCESOS

(ENG) 4. SISTEMAS DE FICHEROS

(ENG) 4.1 TIPOS DE SISTEMAS DE FICHEROS

(ENG) 4.1.1 SITEMAS DE FICHEROS BASADOS EN LISTAS

(ENG) 4.1.2 SISTEMAS DE FICHEROS BASADOS EN TABLAS

(ENG) 4.1.3 SISTEMAS DE FICHEROS BASADOS EN I-NODOS

(ENG) 4.2 EL SISTEMA DE FICHEROS VIRTUAL

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(ENG) 4.3 LLAMADAS AL SISTEMA PARA LA GESTION DE FICHEROS

(ENG) 5. PIPES DE UNIX

(ENG) 5.1 IMPLEMENTACION DE PIPES

(ENG) 5.2 LLAMADAS AL SISTEMA PARA LA GESTION DE PIPES

(ENG) 6. SIGNALS DE UNIX

(ENG) 6.1 IMPLEMENTACION DE SIGNALS

(ENG) 6.2 LLAMADAS AL SISTEMA PARA LA GESTION DE SIGNALS

(ENG) 7. SOCKETS BSD

(ENG) 7.1 EL MODELO DE CAPAS: OSI Y TCP/IP

(ENG) 7.2 EL MODELO CLIENTE/SERVIDOR

(ENG) 7.3 IMPLEMENTACION DE SOCKETS BSD

(ENG) 7.4 SOCKETS Y TCP/IP

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(ENG) 7.5 LLAMADAS AL SISTEMA PARA LA GESTION DE SOCKETS

(ENG) 7.6 TIPOS DE SERVIDORES

(ENG) 7.6.1 SEVIDOR SECUENCIAL

(ENG) 7.6.2 SERVIDOR CONCURRENTE

(ENG) 7.6.3 SERVIDOR CONCURRENTE CON PRE-FORKING

Qualification system

- Continuous assessment 50%

- Final examination 50%

Regulations for carrying out activities

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Bibliography

Basic:

Tanenbaum, A.S. *Modern operating systems.* 3rd ed. Upper Saddle River, NJ: Pearson Education, 2009. ISBN 9780138134594.

Tanenbaum, A.S.; Woodhull, A.S. *Operating systems: design and implementation.* 3rd ed. Upper Saddle River, NJ: Pearson Prentice Hall, 2006. ISBN 0131429388.

Bovet, D.P.; Cesati, M. *Understanding the Linux kernel* [on line]. 3rd ed. Bejing [etc.]: O'Reilly, 2005 [Consultation: 22/11/2011]. Available on: <http://proquest.safaribooksonline.com/0596005652>. ISBN 0596005652.

Stevens, W.R.; Rago, S.A. *Advanced programming in the UNIX environment.* 2nd ed. Reading, Mass.: Addison-Wesley, 2005. ISBN 0201433079.

Stevens, W.R. *UNIX network programming.* 3rd ed. Boston: Addison-Wesley, 2004. ISBN 0131411551.

Wright, G.R.; Stevens, W.R. *TCP/IP illustrated (Vol. 2: The implementation)* [on line]. Reading, MA [etc.]: Addison-Wesley, 1995 [Consultation: 22/11/2011]. Available on: <http://proquest.safaribooksonline.com/020163354X>. ISBN 020163354X (VOL. 2).

Complementary:

Kernighan, B.W.; Ritchie, D.M. *The C programming language.* 2nd ed. New Jersey: Prentice-Hall, 1988. ISBN 0131103628.

Kernighan, B.W.; Pike, R. *The practice of programming.* Reading, MA: Addison-Wesley, 1999. ISBN 020161586X.

Others resources: