

SESSION 9

THE MEMORY SYSTEM

OBJETIVES

- To know how a memory system is designed
- To know memory hierarchy concept.
- To know how to improve memory performance.
- To know different types of interleaved memories.
- To know what cache memory is.
- To know different caches organization.
- To know mapping, replacement and writing policies.

PREVIOUS KNOWLEDGE

Deep knowledge of digital electronic. Addresses map.

BIBLIOGRAPHY

- Fundamentos de los Computadores. Pedro de Miguel Anasagasti. Thomson-Paraninfo, 9º ed. 2004.
- Estructura y Diseño de Computadores. David. A. Patterson and John L. Hennessy Ed. Reverte 2000.
- Organización y Arquitectura de Computadores. William Stallings. Pearson-Prentice Hall, 2006

TASKS

READINGS

FUNDAMENTOS DE LOS COMPUTADORES (Pedro de Miguel Anasagasti. Thomson-Paraninfo. 2004)

1. Chapter 11. Increasing performance
 - a. Memory hierarchy (11.2)
 - b. Improving main memory performance (11.4)
 - c. Cache memory (11.3)

- ESTRUCTURA Y DISEÑO DE COMPUTADORES (D. A. Patterson and J. L. Hennessy. Ed. Reverte 2000)

1. Chapter 7. Big and fast: memory hierarchy
 - a. Basic cache principles (7.2)
 - b. How to asses cache memory performance

- ORGANIZACIÓN Y ARQUITECTURA DE COMPUTADORES. (W. Stallings. Pearson-Prentice Hall, 2006)

1. Chapter 4. Cache memory
 - a. Basic cache principles (4.2)
 - b. Cache design elements (4.3)

EXERCISES

Download http://atc2.aut.uah.es/~avicente/asignaturas/eoc/pdf/enunciados_t4.pdf some of them will be solved during the classes. Remaining non-solved exercises must be homework considered.