Antonio J. de Vicente

# SESSION 4

## RISC SETS, VLIW TECHNIQUE, BINARY CODE COMPATIBILITY AND COMPILERS

## OBJETIVES

To know basic characteristic of RISC repertories.

To know how VLIW technique improve performance.

To know how to get binary code compatibility.

To know how compilers work.

To apply session knowledge to solve exercises.

## PREVIOUS KNOWLEDGE

Basic knowledge of any assembly language

## BIBLIOGRAPHY

- Fundamentos de los Computadores. P. De Miguel Anasagasti
  Ed. Thomson-Paraninfo. 9º Edición. 2004

- ESTRUCTURA Y TECNOLOGÍA DE COMPUTADORES. S. Díaz, M. C. Romero, Alberto J. Molina
  Ed McGraw-Hill Computers. 2009

- ARQUITECTURA DE COMPUTADORES. J. A. de Frutos, R. Rico.
  Ed. Universidad de Alcalá. 1995

## TASKS

READINGS

FUNDAMENTOS DE LOS COMPUTADORES. (P. De Miguel Anasagasti. Ed. Thomson-Paraninfo. 2004)
1. Chapter 6. Instructions and addressing modes
   a. Instruction uses frequency (6.6)
   b. RISC computers (6.10)

ORGANIZACIÓN Y ARQUITECTURA DE COMPUTADORES (W. STALLINGS. PERSON-PRENTICE HALL, 2006)
1. Chapter 13. RISC computers
   a. Instruction execution characteristics (13.1)
   b. Wide register file use (13.2)
   c. Register optimization based on compiler (13.3)
   d. RISC architectures (13.4)
   e. RISC vs. CISC (13.8)

ARQUITECTURA DE COMPUTADORES. UN ENFOQUE CUANTITATIVO. (D. A. Patterson, J. L. Hennessy. Ed Mac Graw Hill, 1993)
1. Chapter 3. Instruction sets design: alternatives and principles
   a. Memory addressing (3.4)
   b. Instruction set operations (3.5)
   c. High level language roles and compilers (3.7)
   d. All together: how programs use instruction sets (3.8)

EXERCISES

Download HTTP://ATC2.AUT.UAH.ES/~AVICENTE/ASIGNATURAS/EOC/PDF/ENUNCIADOS_T2.PDF some of them will be solved during the classes. Remaining non-solved exercises must be homework considered.