Antonio J. de Vicente

SESSION 3

INSTRUCTION SET: PRINCIPLES AND FORMATS

OBJETIVES

To know relationship between high level languages and instruction set designs.

To know the different parameters to be taken into account for designing instruction sets.

To know instruction formats and how to design them.

To apply session knowledge to solve exercises.

PREVIOUS KNOWLEDGE

Basic knowledge of any assembly language

BIBLIOGRAPHY

- Organización y arquitectura de computadores. (William Stallings)
  Ed. Pearson-Prentice Hall, 2006.

- ARQUITECTURA DE COMPUTADORES. Un enfoque cuantitativo. (John L. Hennessy and David A. Patterson)
  Ed. Mc Graw Hill. 1993

TASKS

READINGS

ORGANIZACIÓN Y ARQUITECTURA DE COMPUTADORES (W. STALLINGS. PERSON-PRENTICE HALL, 2006)

1. Chapter 10. Instruction sets: characteristics and functions
   a. Machine language characteristics (10.1 page 350)
   b. Operation types (10.4 page 361)
   c. Assembly language (10.6 page 387
2. Chapter 11. Instruction sets: addressing modes and instruction format
   a. Addressing modes (11.1 page 408)
   b. Pentium and PowerPC addressing modes (11.2 page 415)
   c. Instruction formatas (11.3 page 420)

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. Machine level architecture classification (3.2 pages 230 to 235)
   b. Operands storage in memory: general purpose register machine taxonomy (3.3)
   c. Memory addressing (3.4)

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.