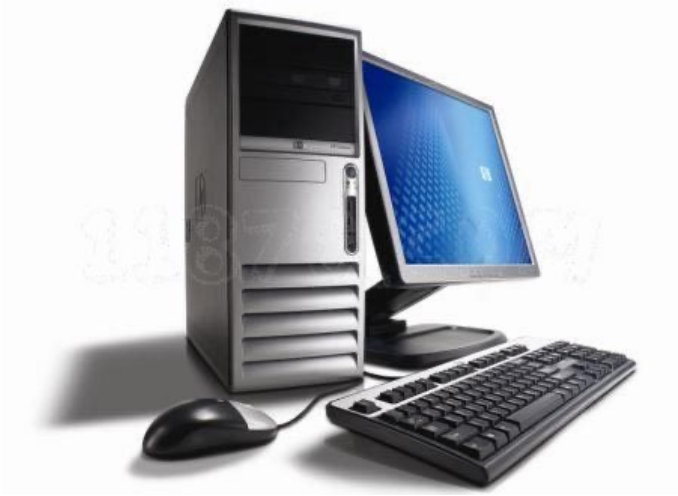
Computer Architecture and Organization



Universidad Francisco de Vitoria
UFV Madrid

Exercises 1
Introduction

Tables

- **Prepare a document with:**
  - **ASCII Table**
    - **Try and figure the relation between lowercase and uppercase letter encoding. Is there a quick way to transform lowercase to uppercase and the other way around?**
  - **Rules for Two's complement operations**
  - **Explanation for Word width (or Word Size)**
  - **Graphic description for Word, Byte, Nibble and bit**

Exercises

- **Base conversion**
  - b00001111 to hexadecimal
  - b10101010 to hexadecimal
  - 0xCAFE to binary
  - 0xBEEF to decimal
  - 0xCACA0 to binary

  Explaning all steps

Exercises II

- **Sort from highest to lowest** **(16 bits Word size)**
  - **b1001001111001110**
  - 0x79AD
  - 0x8000
  - 0x9010
  - 0x5053
  - 0xF0FE
  - 0x10000

Heads up!, Numbers are represented in 2's complement

Explain all the steps

Exercises III

- **Choose two computers you own and look for performance data:**
  - https://www.cpubenchmark.net/
  - Comment on main characteristics and obtain the performance per MHz of both computers.