Sistemas Informáticos (Computer Systems)  
Unit 02. Study guide

short line

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Unit 02. Information representation

# Dates

From 25/09/2023 to 08/10/2023. The length of the unit is 2 weeks (16 hours).

# Previous knowledge

* How to perform basic mathematical operations.
* How to convert between two general units.

# Objectives

* To learn how the computer systems manage information.
* To learn how to convert from decimal to binary, octal and hex.
* To learn how to convert from binary, decimal, octal and hex.
* To learn how to convert between octal and hex.
* To learn how to perform basic mathematical operations in binary code: addition, subtraction, multiplication.
  + The division is not in the scope of the objectives.
* To learn how to perform logical operations.
* To learn how to represent negative numbers in binary code.
* To learn how to represent real numbers in binary code.
* To know how to represent alphabetic characters in binary code.
* To know the information units.
* To learn how to change information units.
* To learn how to install Python 3 and set an environment to work with him.
* To learn how to use basic commands to print and read information in Python.

# Contents

* Numeral systems
* Binary code
* Operations with binary numbers
* Negative numbers
* Real numbers
* Boolean algebra
* Octal
* Hexadecimal
* Alphanumeric Representation
* Numeric and alphanumeric data
* Internal representation
* Unit system
* Python 3 installation.
* Python environment.
* Print and read information in Python.

# Activities

It is very important to read the notes and perform the exercises. These exercises (both unit 2 exercises and Python exercises) are not part of the assessment, but note that it is very common to have several questions from this unit in the exam.

# Recommendations

It is very important to go to the TC with the main concepts studied.