



# Programming for DA

Joseba Carricas  
[jcarricasga@external.unav.es](mailto:jcarricasga@external.unav.es)



**Joseba Carricas**

Tecnología y Gestión

Pamplona y alrededores · 367 contactos



**Roitruck**

<https://www.linkedin.com/in/josebacarricas/>

## Objectives

“Learn programming”

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Data analysis

# Objectives

At the end of course the students will be able to:

- Understand what is programming.
- Learn about data analysis.
- Solve a data analysis problem using programming.

Organization

Self study

Practical sessions

Project

### Self study

- Go through the proposed material.
- Practice with the proposed exercises.
- Understand the concepts and techniques, and write down any doubt.

# Organization

Self study

## Practical sessions

- Carry out proposed exercises.
- Discuss solution designs.
- Resolve doubts and problems.
- Consolidate knowledges and capabilities.

## Organization

Self study

Practical sessions

Project

- Use data analysis to get relevant information.




# Planning

- 11/1 - Introduction
- 18/1 - Working with data files
- 25/1 - Working with data files
- 1/2 - Environment setup
- 8/2 - Basics: conditions
- 15/2 - First data analysis & presentation
- 22/2 - First data analysis & presentation
  
- 1/3 - Partial exam
  
- 8/3 - Basics: loops and functions
- 15/3 - Manipulating strings
- 22/3 - Manipulating strings
- 29/3 - Data structures
- 5/4 - Data structures
- 26/4 - Data structures

# What is programming for?

Create applications

Automate tasks

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- Repetitive tasks.
  - Too many data.

## What is programming?

- “Do this; then do that.”
- “If this condition is true, perform this action; otherwise, do that action.”
- “Do this action exactly 27 times.”
- “Keep doing that until this condition is true.”

“Programming is a creative task”

Errors are your friends

Why Python?

**Problem:**

Generate a basic analysis of Seattle Library checkout records:

*How many checkouts corresponding to each group and subgroup type?*

<https://www.kaggle.com/seattle-public-library/seattle-library-checkout-records>

- Get the data file.
- Prepare the data file.
- Try to achieve the analysis with Excel.
- Achieve the analysis with Python.

## Install a good text editor

Windows:

<https://notepad-plus-plus.org/downloads/>

Mac:

<https://brackets.io/>

or

<https://macromates.com/>

A hand is shown in the upper right corner, reaching down to assemble a structure using various colored LEGO bricks. The bricks are scattered on a white surface, with some already partially assembled into a structure. The colors include yellow, green, red, and black. The background is slightly blurred, showing more bricks and a hand.

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