



T E N A B A L

Python applied to

Data Science

From zero to your first predictive models

Practical handbook with real examples and solved exercises

Python 3.10+ · NumPy · Pandas · Matplotlib · Scikit-learn

Introduction

Who is this handbook for?

This handbook is designed for anyone with basic programming knowledge who wants to dive into the world of data science using Python. You don't need prior experience working with data or advanced statistics — we'll build knowledge step by step, from the fundamentals to a real-world project.

If you already know how to program in any language and want to make the leap to data analysis, this is your ideal starting point. If you're completely new to Python, we recommend reviewing the language basics first (variables, loops, functions), but it's not strictly necessary for most chapters.

What will you learn?

By the end of this handbook you will be able to:

- Manipulate and clean real data using NumPy and Pandas.
- Create clear and professional visualizations with Matplotlib and Seaborn.
- Apply basic statistics directly to your data.
- Build and evaluate your first machine learning model with Scikit-learn.
- Complete a full analysis of a real dataset from start to finish.

How to use this handbook

Each chapter follows the same structure: theory explained with concrete examples, code snippets you can run directly in your environment, and solved exercises at the end to consolidate what you've learned.

We recommend following the chapters in order the first time, as each one builds on the previous. However, if you already have experience with a specific library, you can jump directly to the chapter that interests you.

Tip: Don't just read the code. Run it, modify it, break it. The best way to learn data science is to experiment with data.

Setting Up Your Work Environment

Installing Python

We need Python 3.10 or higher. The most recommended way to work with data science is to install Anaconda, a distribution that includes Python, Jupyter and the main scientific libraries already configured.

Steps to install Anaconda:

1. Go to <https://www.anaconda.com/download> and download the version for your operating system.