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INTRODUCTION TO PYTHON

Introduction to Python

An intensive hands-on course

Audience: This is a course for people from various backgrounds with an interest in powerfully automating day-to-day tasks.

Overview: This intensive, hands-on, practical training course will give you an introduction to writing Python code for a variety of scripting and data analysis tasks.

Skills: You will learn the fundamentals of Python's powerful data types and how to manipulate tabular data with ease in a variety of formats, including CSV, Excel, SQL databases, and time-series. You will learn about tools for rapid prototyping and interactive data visualization.

You will also learn about the elegance and power of the Python language and the breadth of its amazing ecosystem of powerful packages for solving many kinds of problems. You will be well-placed to continue learning more in the future.

Expert instructors: See bios below.

Format: Live instructor-led training (online). Each topic is a mixture of expert instruction, worked examples, and hands-on exercises with help from the instructor(s).

Dates (February – June 2024):
- 12 - 13 February 2024
- 18 - 19 March 2024
- 29 - 30 April 2024
- 3 - 4 June 2024
- 24 - 25 June 2024

Duration: 2 days

Price: AUD $1,800 (excl GST)

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Topic outline

Day 1: Python basics

Day 1 covers how to use Python for basic scripting and automation tasks, including tips and tricks for making this easy:

- Why Python? What's possible?

- The *Jupyter* notebook for rapid prototyping

- Modules and packages

- Python concepts: an introduction through examples

- Essential data types: strings, tuples, lists, dicts

- Worked example: retrieving real-time data from a REST web API

- Raising and handling exceptions
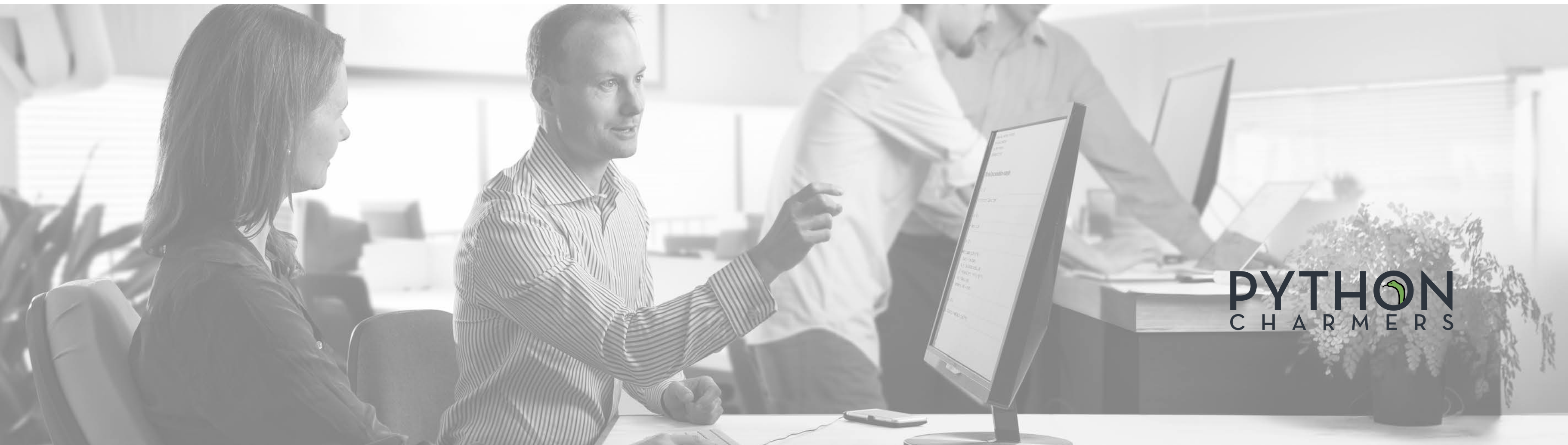
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Topic outline

Day 2: Handling, analyzing, and presenting data in Python

Python offers amazingly productive tools like Pandas for working with different kinds of data. Day 2 gives a thorough introduction to analyzing and visualizing data easily:

- Reading and writing essential data formats:
    CSV, Excel, SQL, time-series (others on request)

- Indexing and selecting data in *Pandas*

- Data fusion: joining & merging datasets

- Summarization with "group by" operations; pivot tables

- Visualization and statistical graphics with *Plotly Express*

- Worked example: creating automated reports

- Creating interactive dashboards with *Streamlit*

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Personal help

We are happy to offer on-the-spot problem-solving after each day of the training for you to ask one-on-one questions — whether about the course content and exercises or about specific problems you face in your work and how to solve them. If you would like us to prepare for this in advance, you are welcome to send us background info before the course.

Other information

Format: Courses are conducted online via video meeting using Python Charmers' cloud notebook server for sharing code with the trainer(s).

Computer:
- **Hardware**: we recommend ≥ 8 GB of RAM and a webcam. Preferably also multiple screens and a quiet room (or headset mic).
- **Software**: a modern browser: Chrome, Firefox, or Safari (not IE or Edge); and Zoom.
- **Coding**: we have a cloud-based coding server that supports running code and sharing code with the trainer(s).

Timing: Most courses will run from 9:00 to roughly 17:00 (AEST) each day, with breaks of 50 minutes for lunch and 20 minutes each for morning and afternoon tea.

Certificate of completion: We will provide you a certificate if you complete the course and successfully answer the majority of the exercise questions.

Materials: You will have access to all the course materials via the cloud server.

We will also send you a bound copy of the course notes, cheat sheets, and a USB stick containing the materials, exercise solutions, and further resources.

Instructor bio

Dr Edward Schofield

Ed has consulted to or trained over 3000 people from dozens of organisations in Python and data science, including Atlassian, Barclays, Cisco, CSIRO, Dolby, Harvard University, IMC, Singtel Optus, Oracle, Shell, Telstra, Toyota, Verizon, and Westpac. He is well-known in the Python community as a former release manager of *SciPy* and the author of the widely used *future* package. In normal times he regularly presents at conferences in data analytics and Python in Australia and internationally.

Ed holds a PhD in machine learning from Imperial College London. He also holds BA and MA (Hons) degrees in mathematics and computer science from Trinity College, University of Cambridge. He has 20+ years of experience in programming, teaching, and public speaking.

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Instructor bio

Dr Robert Layton

Robert is the author of the book "Data Mining in Python", published by Packt in 2016. He provides analysis, consultancy, research and development work to businesses, primarily using Python. Robert has worked with government, financial and security sectors, in both a consultancy and academic role. He is also a Research Fellow at the Internet Commerce Security Laboratory, investigating cybercrime analytics and data-mining algorithms for attribution and profiling.

Robert is a contributor to the Python-based *scikit-learn* open source project for machine learning and writes regularly on data mining for a number of outlets. He also authored the website "LearningTensorFlow.com" and sold it to DataBricks in 2017. He has presented regularly at a number of international conferences in Python, data analysis, and its applications.

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Instructor bio

Henry Walshaw

Henry has over 15 years of experience in Python application development and has trained hundreds of people in how to use Python from organisations including AGL, the Bureau of Meteorology, ESRI, the NSW Department of Finance, National Australia Bank, and Telstra.

Henry's core technical expertise relates to the development and analysis of large scale spatial datasets (primarily using Python), and communicating this understanding to both subject matter experts and the general public.

Before joining Python Charmers, Henry worked in both government and industry — at Geoscience Australia, the Victorian Department of Sustainability and Environment, and the Environmental Protection Agency (EPA); as a consultant with Sinclair Knight Merz (SKM), a manager at we-do-IT, and as CTO of a startup. He holds a Bachelors in Computational Science.

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Instructor bio

Errol Lloyd

Errol's background is in computational neuroscience. He has been using Python for modelling neurological systems, digital signal processing, data analysis, and empirical research for 7 years.

Prior to joining Python Charmers in 2020, Errol trained fellow researchers from both the sciences and the humanities in a variety of software solutions to research problems, including data and natural language analysis in python, data visualisation, interactive dashboards with front-end javascript, and version control and collaboration with git and GitHub.

Errol is an advocate for open source software and reproducible research in science, and is passionate about empowering others to use code in enhancing their productivity. He is currently completing doctoral studies on visual processing in the brain at the University of Melbourne.

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About Python Charmers®

Python Charmers is a leading global provider of training in data science and software development, based in Australia and Singapore. Since 2010, Python Charmers has given over 600 training courses and bootcamps to over 6000 delighted people from organizations such as Atlassian, BAE, Barclays, Cisco, CSIRO, Deloitte, Dolby, GDF Engie, IMC, pwc, Qinetiq, Singtel Optus, Shell, Sportsbet, Toyota, Verizon, and Westpac. Python Charmers specializes in teaching data science and programming to scientists, engineers, data analysts, quants, and computer scientists in the Python language.

Python Charmers' trainers have years of experience with machine learning, data analytics, statistical modelling, programming, and teaching, and deep roots in the open source community, as both speakers at events and contributors to well-known open source projects for data science, including *NumPy*, *SciPy*, *Scikit-Learn*, *Pandas*, *Matplotlib*, *NetworkX*, *Dash*, and *Future*.

Testimonials: Testimonials from past participants of similar bootcamps and training courses are available at

https://pythoncharmers.com/testimonials/

Questions: We would be happy to hear from you. Please let us know if you have any questions.

Contact:
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