Introduction to Python

An introductory course in Melbourne

Audience: This is a course for staff from various backgrounds with little prior experience in programming. The focus is on automating day-to-day data analysis tasks.

Outcome: By the end of the course, you will have all the knowledge you need to start using Python competently for a variety of tasks. You will have had experience with using Python for various scripting, data-manipulation and visualisation tasks with data in a variety of formats, including CSV, Excel spreadsheets, and SQL databases. You will understand the elegance and power of the Python language and the breadth of its amazing ecosystem of powerful packages, and you will be well-placed to continue learning more as you use it day-to-day.

Duration:	2 days
Dates:	4–5 June 2018
Venue:	Training Choice, Ground Floor, 50 Queen Street, Melbourne CBD
Format:	Each topic is a mixture of hands-on exercises and expert instruction.
Instructor:	Dr Edward Schofield, Dr Robert Layton, and/or Henry Walshaw

Prerequisites: Some familiarity with programming concepts (in any language) will be beneficial, but prior programming experience is not required.

Course 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. The syllabus is as follows:

- Why use Python? What's possible?
- Setting up your Python development environment (IDE, *Jupyter*)
- The *Jupyter* notebook and shell for rapid prototyping
- Modules and packages
- Python concepts: an introduction through examples
- Essential data types, tips and tricks
- Raising and handling exceptions
- Worked example: fetching and ranking real-time temperature data for global cities from a web API

Day 2: Handling, Analysing, and Presenting Data in Python

The Pandas package is an amazingly productive tool for working with different kinds of data in Python. Day 2 gives a comprehensive introduction to reading and writing the most important data formats and how to analyse and visualise data easily.

- Reading and writing essential data formats: CSV, Excel, SQL databases, JSON, time-series
- Indexing and selecting data in Pandas
- Data fusion: joining & merging datasets
- Summarisation with "group by" operations; pivot tables
- Time-series analysis: parsing dates, resampling
- Visualisation and statistical graphics with *Seaborn*
- Worked example: creating automated reports with *Jupyter*, *Pandas* and *nbconvert*

We encourage you to bring your own data sets to the course where relevant.

Supplemental materials

We will supply you with printed course notes, cheat sheets, and a USB stick containing kitchen-sink Python installers for multiple platforms, solutions to the programming exercises, several written tutorials, and reference documentation on Python and the third-party packages covered in the course.

Instructor bio

Your trainers for the course will be selected from:

Edward Schofield   Ed has consulted to or trained over 1500 people in Python for data analytics from dozens of organisations, including AGL, the Australian Federal Police, A*STAR, Barclays, the Bureau of Meteorology, Cisco, CSIRO, Dolby, DSTG, IMC, Macquarie Bank, Shell, Telstra, Toyota, and Verizon. Ed is the co-chair of the Python for Data Science miniconf for PyCon AU, co-organises the Python user group in Melbourne, and regularly presents at conferences related to Python and data analytics in Australia and internationally. He is a former release manager of *SciPy* and the author of the *future* package.

Ed holds a PhD in machine learning from Imperial College London, with application to speech and image recognition technologies. He also holds BA and MA (Hons) degrees in maths and computer science from Cambridge University. He has 20+ years of experience in programming, teaching, and public speaking.

Robert Layton   Robert is a data scientist who works across several industries including finance, information security, and transport. He is (2015), which has received significant praise. He is a developer for the *scikit-learn* package for machine learning and the author of the website *Learning Tensorflow*. He has presented at the last four PyCon AU conferences, at multiple international research conferences, and has given training in Python to groups of staff from companies including Cisco, Lumascape, IMC, Optus, Sportsbet, and Woolworths.

Robert has a PhD in cybercrime analytics from the Internet Commerce Security Laboratory at Federation University Australia, where he was the inaugural Young Alumni of the Year in 2014 and is now an Honorary Research Fellow. Robert is also an Official Member of the Ballarat Hackerspace, where he helps grow the future-tech sector in regional Victoria.

Other information

Computer: A computer will be provided for you during the course.

Exercises: There will be practical programming exercises throughout the course. These will be challenging and fun, and the solutions will be discussed after each exercise and provided as source code on the USB sticks. During the exercises, the trainer will offer individual help and suggestions.

Timing: The course will run from 9:00 to roughly 17:00 each day, with breaks of 1 hour for lunch and 15 minutes each for morning and afternoon tea.

Personal help: Your trainer(s) will be available after the course each day for you to ask any one-on-one questions you like — whether about the course material and exercises or about specific problems

you face in your work and how to use Python to solve them. We encourage you to have your own data sets ready to use if this is relevant.

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

Food and drink: We will provide lunch, morning and afternoon tea, and drinks.

Price

$825 per day per person, including GST.

Booking

To book places on the course, please contact us, or visit:

https://pythoncharmers.com/training/introduction-to-python/

Testimonials

Testimonials from past participants of similar courses are available at pythoncharmers.com/testimonials.

Questions?

You are welcome to contact us if you have any questions before the course. You can reach us at info@pythoncharmers.com.

About Python Charmers

Python Charmers is the leading provider of Python training in the Asia-Pacific region, based in Australia and Singapore. Python Charmers specialises in teaching programming to data scientists, engineers, scientists, quants, and computer scientists in the Python language. Python Charmers' delighted training clients include the ABC, Barclays, CSIRO, Dolby, Geoscience Australia, Optiver, Primary Health Care, and Toyota Technical Centre.

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