# PYTHON
## CHARMERS®

# CREATING DASHBOARDS IN PYTHON

COURSE GUIDE

# Creating dashboards in Python

## A specialist hands-on course

**Overview:** This course will teach you how to step from research-level code in notebooks to creating rapid prototypes of interactive web-based dashboards. It will also teach you best practises for scaling your dashboard apps in complexity while keeping them maintainable and performant.

**Audience:** Technical staff including engineers, scientists, analysts, traders, or others who want to know how to expose the functionality of Python code as interactive dashboards.

**Prerequisites:** Prior completion of Python Charmers' *Introduction to Python* course or equivalent programming experience (3+ months of daily use if self-taught).

**Duration:** 1 day

**Expert instructors:** See bios below.

**Delivery:** Live instructor-led training (online) with worked examples and interactive exercises.

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

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# Topic outline

## Creating dashboards in Python

The course will start by giving you an overview of the broad ecosystem of techniques and Python packages for creating dashboards and GUIs. It will then dive deep into creating web-based dashboards using *Streamlit*:

- Basic input and output widgets

- Best practices for maintainability and efficiency with *Streamlit*

- Charts / plots in various formats; layout containers

- Caching: memory and disk caching

- Forms; session state

- Worked examples

- Optional: Deploying *Streamlit* apps

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## Personal help

We are happy to offer on-the-spot problem-solving after each day of the training for participants to ask one-on-one questions — whether about the course content and exercises or about specific problems they face in their work and how to solve them.

If you would like us to prepare for this in advance, you are welcome to send us sample datasets and background info before the course.

# Other information

**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. During the exercises, the trainer(s) will offer individual help and suggestions.

**Coding:** We provide a cloud coding environment (using *JupyterHub*) that allows you to code online using your web browser. Our trainer(s) can see in real-time how you are faring with the exercises and offer live help.

**Materials:** We will provide you downloadable course notes (PDF and Jupyter notebooks), solutions to the programming exercises, several written tutorials, and reference documentation on Python and the third-party packages covered in the course.

**Timing:** Most courses will run from 9:00 to roughly 17:00 (AEST/AEDT) 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.

# 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 *future* package. He presents at conferences in data science and Python in Australia and internationally.

Ed holds a PhD in machine learning (language models) 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 25 years of experience in programming, teaching, and public speaking.

# 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. Before joining Python Charmers, he was 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. 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 20 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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**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 700 training courses and boot-camps to over 7,000 delighted people from organizations such as AGL, Atlassian, Australian Super, Barclays, CSIRO, Cisco, Deloitte, Dolby, IMC, Macquarie Bank, Optiver, pwc, Singtel Optus, Shell, Sportsbet, Telstra, Toyota, Verizon, Westpac, and Woolworths. Python Charmers special-izes in teaching programming and data science to scientists, engineers, data analysts, quants, and computer scientists.

Python Charmers' trainers boast years of experience with data science, data analytics, statistical modelling, and programming, 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*, *Scikit-Image*, and *Python-Future*.

**Testimonials:** Testimonials from past participants of similar 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.

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