COMP2200/COMP6200 Lecture 1d – Python Programming

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Other expectations — Python programming

COMP2200 We start Python from Week 1 in this unit, gently. The focus is on practical, guided steps (for example reading files and simple analysis) rather than full language theory.

COMP6200 Are you concurrently enrolled in COMP6010? That's the place for dedicated COMP programming support. It's not too late to enrol.

Why notebooks?

- They let us mix **code**, **explanations**, and **results** in one place.
- Great for **small experiments**: change a line, re-run, see what happens.
- Easy to share with tutors/classmates, and useful for your future self.
- Very common in data science in industry and research.

Python notebooks (Jupyter / Colab)

- **Option 1 (recommended for COMP6200): Google Colab** at `https://colab.research.google.com/`
- **Option 2 (recommended for COMP2200): Jupyter (local)** via `uv run --with jupyter jupyter lab` (or `... jupyter notebook`)

Notebook structure

- A notebook is a sequence of **cells** executed by a shared kernel.
- Common cell types:
    - **Code** cells: run Python and display output.
    - **Markdown** cells: narrative text, lists, equations.
    - **Raw** cells: left untouched on export (rarely used).

Markdown essentials

- Headings with `#`, **bold**, *italic*, and `inline code`.
- Lists start with `-` or `1.`; math via `$ ... $`.

What is a DataFrame?

- A two-dimensional table with **rows** and **columns**.
- Columns have names and data types; think spreadsheet in Python.
- Provided by the `pandas` library and built on NumPy.

Uploading a CSV in Google Colab

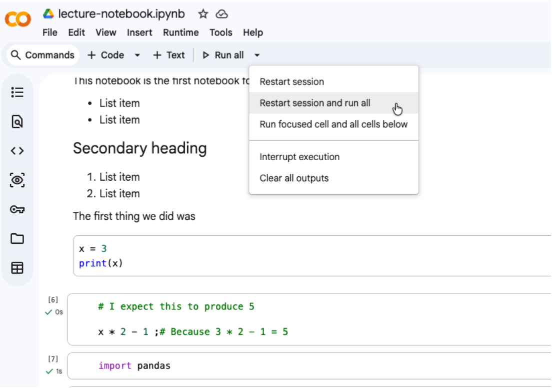
- Open the **Files** pane (folder icon on the left).
- Click **Upload** and select your `.csv` file.
- You can then load it by filename (e.g., `pd.read_csv("myfile.csv")`).
- If you restart the runtime, you might need to upload it again.

Loading a CSV in Python (pandas.read_csv)

```python
import pandas as pd
df = pd.read_csv(
    "indian-supermarkets-in-sydney.csv"
)
df
```

The number 1 problem solving technique for notebooks

- If things get weird: **Restart runtime / kernel** and then **Run All**.
- This removes hidden state from running cells in a strange order.



This notebook is the first notebook t

- List item
- List item

Secondary heading

1. List item
2. List item

The first thing we did was

```
x = 3
print(x)
```

```
# I expect this to produce 5

x * 2 - 1 ;# Because 3 * 2 - 1 = 5
```

```
import pandas
```