COMP2200/COMP6200 – Week 9D Tableau dashboard literacy

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Why a Tableau cameo?

Framing the cameo

- Learning outcome hook: communicate analyses clearly, even when the tool is point-and-click.
- Tableau is common in MQ business units and internships – we should be able to read what others publish.
- This is a literacy tour, not assessed software training; Python remains our production stack.

When to reach for Tableau

- Stakeholder review tomorrow? Tableau gets you to a polished exploratory dashboard in minutes.
- Cross-platform, free Public Edition, and no install required for a short lecture demo.
- Use it for:
  - quick "what stands out?" conversations,
  - rapid prototyping before recreating visuals in Python,
  - critiquing dashboards you encounter in industry.

Live build outline

Data for the demo

- **Set-up story:** bicycle counter readings outside the Art Gallery of NSW (same data as our Matplotlib practice).
- CSV already in `resources/` – no database or API logins required.
- Tableau connects by drag-and-drop; no schema wrangling needed for tidy CSVs.

Step 1: load and inspect

1. Drag the CSV into Tableau and open the data source tab.
2. Highlight string vs numeric icons; call out Tableau's automatic data types.
3. Rename fields for readability (e.g. *Count* instead of *Total cyclists*).

Teaching cue

Tie the icons back to tidy data: each column is a variable, each row an observation.

Step 2: first viz in 90 seconds

1. Drag *Day of week* to Columns and *Count* to Rows.
2. Emphasise automatic aggregation (SUM) and the discrete pill (blue) Tableau created.
3. Use the Show Me panel to contrast bar vs line recommendations.

Discussion prompt

Ask: "Does this bar chart answer a stakeholder question? What else would they ask next?"

Step 3: colour for context

1. Drag *Weather* onto Colour (or *Is weekend?*).
2. Explain legend editing and why we avoid rainbow defaults; keep Greg's muted palette.
3. Label the largest bar with quick table labels for clarity.

- Reinforce the encoding choices: colour for categorical grouping, length for magnitude.

Step 4: quick table calculation

1. Right-click *Count* pill → Quick Table Calculation → Percent of Total.
2. Flip to a stacked bar or keep separate bars; show how percentages change the question.
3. Call out that calculations live with the view, not in the source CSV.

Contrast with Python

In pandas we would add a computed column; Tableau keeps the data pristine and layers calculations in the viz.

Dashboards and literacy

Step 5: build a tiny dashboard

1. Create a second sheet: line chart of *Time of day* vs *Count*.
2. Assemble a dashboard with both sheets and an action filter.
3. Demonstrate: clicking a weekday filters the line view.

- Emphasise question-driven design: "What happens to the hourly profile on weekends?"

Critiquing what you see

- Ask the class to spot strengths (clear colour legend, interactive filter) and gaps (needs annotation, lacks uncertainty).
- Encourage a “trust but verify” mindset: what assumptions sit behind the aggregation? Any missing data warnings?
- Connect to assessment: your assignments require written interpretation, not a Tableau submission.

Responsible use and wrap

Responsible sharing

- Tableau Public saves workbooks to the cloud; assume anything published is downloadable.
- Use open datasets for practice; avoid confidential or student-identifiable data.
- Local Public Edition can save to disk (`.twbx`) for class demos without uploading.

Linking back to Python

- Tableau: rapid exploration, polished stakeholder conversations, easy “what if” poking.
- Python: reproducibility, version control, automated tests, audit trail.
- Mature workflow: sketch in Tableau if it helps, then rebuild critical visuals in code for the report.

Next steps for students

- Optional: download Tableau Public Edition if you want to practice; it's free but limited on connectors.
- Focus for Week 9 lab: replicate the dashboard logic in Matplotlib and Altair.
- Post on iLearn if you spot confusing dashboards elsewhere – we will critique them together.

Wrap-up

- Tableau cameo gives you the vocabulary to read and discuss dashboards you'll meet in industry.
- Keep the cameo tiny, purposeful, and anchored to communication learning outcomes.
- Questions before we switch back to Python?