Academic integrity declaration

By submitting work for assessment I hereby declare that I understand the University's policy on academic integrity and statement on the use of artificial intelligence software.

In accordance with these documents, I declare that the work submitted is original and solely my work, and that I have not been assisted by another person (collusion) apart from where the submitted work is for a designated collaborative task, in which case the individual contributions are indicated. I also declare that I have not used any editing tools or sources without proper acknowledgment (plagiarism). Where the submitted work is a computer program or code, I further declare that any copied code is declared in comments identifying the source at the start of the program or in a header file, that comments inline identify the start and end of the copied code, and that any modifications to code sources elsewhere are commented upon as to the nature of the modification.

Assignment 3: Group Project (Implementation and Report)

100 Points Possible

Due: Mon Nov 3, 2025 17:00

Attempt 1

In Progress

NEXT UP: Submit Assignment

Add Comment

Unlimited Attempts Allowed

Details

Objective

1. To develop a rich, engaging, innovative, interactive interface designed for a specific audience and purpose;
2. To build on the techniques and principles learned during the subject and previous assessments, and extend yourselves further;
3. To work together as a team to create a single cohesive information visualisation product.
4. To gain practice pitching your implemented product to a client by creating a professional video.

Learning outcomes

- ILO 1. Apply the cognitive and technical principles of information visualisation across various domains
- ILO 2. Critically evaluate the designs of maps and user interfaces for spatial information visualisation
- ILO 3. Develop various types of visualisation platforms in order to analyse big data sets

Your task

This is a group assignment.

Assignment 3 briefing slides (including links to Tableau, R and Shiny resources): **Assignment 3 briefing 2025.pdf (https://canvas.lms.unimelb.edu.au/courses/211272/files/24940009?wrap=1)**

In the age of big and open data, it is important to be able to sort through many different datasets, organise them for a specific purpose and decide on a visualisation based on contextual factors, such as target audier

For Assignment 3, you will work for the City of Melbourne (your **client).** Your task is to pick a target **audience** (user group) and create an **interactive visualisation/interface** that will be tailored to this user group:

1. Tourists who would like to/are visiting Melbourne (hint: useful layer is e.g. POIs (Points of Interest))
2. Local citizens who often commute to the CBD (useful layers: public transport networks)
3. A state government department that is interested in the performance of any of public transport, Metro Tunnel, vehicle volume, pedestrian counts, etc. (not limited to transport)
4. If you would like to target a different user group, please discuss it with the Senior Tutor, Alan Thomas.

Your interface should be intuitive and easy to use, carefully designed, and help the users to discover interesting and practical information about the City of Melbourne or help the government agency identify interestin make decisions for specific tasks.

Ideas

The process of working on Assignment 3 will include the following steps:

- data selection and formatting
- some descriptive statistics and data analyses (initially to develop your own understanding of the data)
- designing the final visualisation with the information hierarchy in mind
- a final testing phase.

Tip: not all datasets are useful for every audience, so be mindful of potential information overload. For example, turning layers on and off can help with this.

The key questions to ask include (but are not limited to):

- Where and when will individual users use the interactive visualisation?
- What places are most frequented/popular?
- What patterns can be found? How can you help the user to discover patterns?
- Are there any anomalies or specifics of any particular location/type of data?
- What platform should be used (computer, mobile, kiosk, etc.)?

Potential sources of data for your interface include:

- City of Melbourne – Open Data Portal **https://data.melbourne.vic.gov.au/ (https://data.melbourne.vic.gov.au/)** .
- Victorian Government open data **https://data.vic.gov.au/ (https://data.vic.gov.au/)**
- A good GIS source directory can be found at the University of Melbourne Library: Australian GIS data guide: **http://unimelb.libguides.com/GIS (http://unimelb.libguides.com/GIS)**

Some years ago a geodatabase (.gdb) of potentially relevant layers was compiled. You can still **download the geodatabase here (https://canvas.lms.unimelb.edu.au/courses/211272/files/22458184?wrap=1) (https://canvas.lms.unimelb.edu.au/courses/211272/files/22458184/download?download_frd=1)** - extract the folder from the .zip file without changing the folder name. However, you are encouraged to seek out up-to-date datasets from the websites listed above.

You are encouraged to start with exploring and analysing these datasets in Tableau or GIS software such as QGIS. You will then have a choice to export your chosen datasets into other formats if required. These type used in the finished interface.

Technical requirements

You will create **either**:

- An R Shiny interface that incorporates one or more Tableau visualisations, **or**
- A Tableau interface that incorporates one or more R Shiny visualisations.

(As with Assignment 2, you may use any R packages you wish, but the **install.packages** command must not be included in your script.)

Submission

This exercise is a group-based assignment.

The assessment is worth **35%** of your final subject mark.

This assessment will comprise (A) the implementation of, and a report on, your developed tool – **25%** of your final subject mark – and (B) a recorded video of your work, including a demonstration of the developed too subject mark.

A. Implementation and Report

One group member must submit **two** files to this assignment by the stated deadline:

1. A single **zipped file** containing your interface and any required data. The interface can be a Shiny interface containing embedded Tableau vizzes, **or** a Tableau dashboard or story containing embedded Shiny eleme other files that are needed. There **must** be a **README.txt** file (with exactly that filename) explaining to the marker how to launch your interface.

2. A PDF report, submitted simultaneously into Canvas (**not** inside your zipped file), that contains four sections as follows:

   I. a **design summary** (maximum 2 pages) explaining:

   - what your interface **does**
   - how it **works**
   - what **features** of the design you would like to receive credit for
   - a justification of the **design decisions** made (e.g. why a particular colour scheme is used, or why a particular graph is the best visualisation of the underlying data) with reference to **concepts from lectures**

   II. a **pattern and/or use case summary** (maximum 2 pages) showcasing:

   - some of the **interesting or useful information, insights or patterns** that the interface helps your target user group(s) discover, and
   - a short **rationale** as to why your tool helped in those discoveries, and how you embedded **concepts from lectures** into your design to enable these use cases to occur.
     *Tip: you may choose to invent various **personas** (https://www.interaction-design.org/literature/article/personas-why-and-how-you-should-use-them) based on the target user group and present use cases fo*

   III. any **sources or references** used;

   IV. a **group member contribution table** containing one row for each group member, as follows:

Name	Contribution to project (max 50 words)	Quality of participation (max 50 words)	Percentage contribution
Hua Li	Write no more than 50 words to list the components of the project that were contributed by Hua.	Write no more than 50 words to describe whether Hua engaged in team discussions, met deadlines, etc.	25%
Tim Fox	Write no more than 50 words to list the components of the project that were contributed by Tim.	Write no more than 50 words to describe whether Tim engaged in team discussions, met deadlines, etc.	25%
...	...	...	...
			all contributions add up to 100%

The rubric for the interface and report can be found below.

B. Video

See **Assignment 3: Group Project (Video)** (https://canvas.lms.unimelb.edu.au/courses/211272/assignments/554918) .

Deadline

- The submission deadline for parts A and B is **Sunday 26 October 2025 at 17:00**.
- **Important:** The three-day "short extension" process does not apply for group assignments. The following text has been copied from the FEIT extension guidelines **page** (https://eng.unimelb.edu.au/students/course resources/extensions-and-special-consideration#:~:text=Applications%20for%20all%20other%20adjustments%C2%A0(including%20extensions%20for%20group%2Dbased%20assessments)%20should%20be%20submitted%20via%20the%20Special%20 : "Applications for all other adjustments (including extensions for group-based assessments) should be submitted via the Special Consideration **portal** (https://students.unimelb.edu.au/your-course/manage-your-cou assessments-and-results/special-consideration) ."
- Assessments submitted after the original due date without an extension, or after the new due date if an extension has been granted by the Subject Coordinator, will be subject to **a penalty of 10% in the mark rec assessment for each day the assessment task is late**. For example, if you are late by one day and your assessment reaches a standard of 80 out of 100, you will now receive 70 in this assessment only.

Assessment criteria

The key assessment criteria for Part A are written below as part of the rubric.

As a guide to overall grade-related criteria:

- <50%: *Inadequate work* that fails to meet basic technical standards or apply basic design principles in one or more respects.
- 50-60%: *Satisfactory work* that is a correctly submitted basic interface to the data.
- 60-70%: *Good work* that involves marginal additional technical challenge or marginal design innovation, and moderate levels of design quality.
- 70-80%: *Excellent work* that involves clear additional technical challenges, additional design innovation and high levels of design quality.
- >80%: *Outstanding work* that demonstrates substantial additional technical challenge, substantial design innovation, flawless design, and involves work that clearly goes beyond that normally expected in class.

Hints

- Plan to submit on time.
- Try to be creative and innovative.
- Think carefully about any visual aid you use in your tool and video.
- When recording the video and presenting interface functionality, you can mix slides, demonstrations of the interface, or other more innovative approaches to demonstrate different aspects of the tool.
- Spelling and grammar are part of the assessment. Your video, visual aid, code commenting, and associated documentation should exhibit attention to detail, and should be free of errors.
- In your report, you should highlight the most important information that is being presented in your interface, explaining how the features of your interface assist in learning about Melbourne for your chosen audien
- Note that your report will be assessed based on *its* design. You should take care to ensure the report is carefully presented with attention to detail. For example, you may choose to incorporate an annotated diagra
- *Technical issues:*
  - If your Tableau dashboard appears in the wrong size inside your Shiny interface, you may need to remove the "phone" layout in Tableau (top-left corner of dashboard editor interface, above the size control).

Plagiarism

In short: you must clearly acknowledge any material you have used in your assessment. Plagiarism is copying, and use of another's work without proper acknowledgment (can be both known and unknown). The policy prohibiting any form of plagiarism. Further information can be found at **https://academicintegrity.unimelb.edu.au/** (https://academicintegrity.unimelb.edu.au/) .

It is acceptable to incorporate code and ideas you have found online or in books, but you **must:**

1. acknowledge the source in a relevant manner (for example: the sources/references page of your report; comments in your R code; or clearly positioned text labels in your Shiny interface or Tableau dashboard),
2. ensure that your use is permitted by any copyright or license restrictions, and
3. clearly demonstrate your own, original ideas and do your own work. You will lose marks if there is limited original work in your submission.

Using other people's code and ideas in violation of these rules is plagiarism and will result in a **mark of zero for all group members** in this assessment – or in serious cases, plagiarism may result in failure of the enti University disciplinary action.

Q&A

If you have any questions about Assignment 3, please post them on **Ed Discussion (https://canvas.lms.unimelb.edu.au/courses/211272/external_tools/3724?display=borderless)** . The tutors will attend to questions there you know the answer to any questions, you are also welcome to post your answer.

You can also ask questions in the lab sessions, which are **dedicated to discussion of Assignment 3 for the rest of semester**. We are a learning community and interaction is always welcome. Of course, if you have you can also email your tutor to seek help.

View Rubric

Assignment 3 Implementation and Report Rubric

Criteria	Ratings						Pts
Basic design view longer description	**25 to >19.9 pts** **Excellent** The submission is in the correct format with all data and files present, and the interface is correctly set up. It is neat and well-presented with valid data story and coherent and clear theme/message. Interface is consistent and aesthetically appealing. Excellent use of graphic/cartographic and interface principles for data exploration.	**19.9 to >18.7 pts** **Correct** The submission is in the correct format with all data and files present and the interface is correctly set up. It is neat and well-presented with valid data story and coherent and clear theme/message. Interface is generally consistent and aesthetically appealing with a few minor issues. However, all necessary elements are present. Mostly conforms to graphic/cartographic and interface principles for data exploration.	**18.7 to >17.4 pts** **Mostly Correct** The submission is in the correct format with all data and files present and the interface is correctly set up. It is neat and well-presented with valid data story and coherent and clear theme/message. However, there are several minor issues, in terms of consistency, aesthetics, or spelling, etc. Follows basic graphic/cartographic and interface design principles with room for improvement.	**17.4 to >16.2 pts** **Flawed** The submission is in the correct format with all data and files present and the interface is correctly set up. It is acceptably neat and well-presented. However, the theme/message is not clear. There are a few major issues and several minor issues in terms of consistency, aesthetics or spelling, etc. A few elements are missing. The purpose of the interface can be understood but the interface may be unclear in more than one aspect.	**16.2 to >12.4 pts** **Many Major Issues** The submission is in the correct format with all data and files present and the interface can run on the marker's device but with a few minor issues/bugs/errors. It attempts to adhere to design principles but has many flaws. Key elements are missing. The interface is confusing and does not have any theme. There are several major and minor issues.	**12.4 to >0 pts** **Inadequate** Submitted files are piecemeal and the interface has major errors. Fails to follow basic design conventions or has severe data integrity flaws. The interface is incomprehensible. There is no theme at all, and the visualisations created are random in nature. There are several critical issues.	/ 25 pts
Technical challenge view longer description	**25 to >19.9 pts** **Strong Challenge** Excellent work. The interface demonstrated advanced uses of new visualisation techniques. Clear evidence of independent work. There are a wide range of complex, novel interactions that are highly intuitive.	**19.9 to >17.4 pts** **Developing Challenge** The work contained very good technical challenge. The interface uses new techniques that adapt to the needs of the graphic. It shows good efforts to use more complex novel interactions, but there's room for improvement.	**17.4 to >14.9 pts** **Minor Technical Challenge** The work contained good technical challenge. The interface uses a few simple techniques that adapt to the needs of the graphic and are partially effective. There are a few efforts to implement novel interactions, but there's room for improvement.	**14.9 to >12.4 pts** **Limited Challenge** The work addressed basic technical challenges. The interface uses a few simple techniques, but in an unoriginal way. There are basic efforts to introduce novel interactions which are limited and/or have some issues.	**12.4 to >9.9 pts** **Very Limited Challenge** The work has limited use of new/different techniques and novel interactions, and they are used in an ineffective or incoherent way.	**9.9 to >0 pts** **No Technical Challenge** The work does not contain any technical challenge. It is similar to the lab work or previous assignments.	/ 25 pts
Design innovation view longer description	**25 to >19.9 pts** **Strong Innovation** Excellent work. Interface involves design elements that are highly innovative;	**19.9 to >17.4 pts** **Developing Innovation** The work contains good design innovation. Generally, well adapted to	**17.4 to >14.9 pts** **Minor Design Innovation** The work contains some design innovation and consideration of user	**14.9 to >12.4 pts** **Limited Innovation** The work contains a few effective design innovations. The interface	**12.4 to >9.9 pts** **Very Limited Innovation** The work contained a few rudimentary design innovations that are	**9.9 to >0 pts** **No Design Innovation** The work contained no design innovation. Default settings are used (or so it	/ 25 pts

Assignment 3 Implementation and Report Rubric

Criteria	Ratings						Pts
	tightly adapted to user goals; the interface is aesthetically pleasing or striking; demonstrates independent background research and/or clear evidence of original thinking. The interface reveals highly insightful and meaningful patterns.	user goals and effective use of additional design elements for greater usability. The interface presents data creatively, and interesting patterns are apparent, but the interface may need more work to be more effective (for example, removing non-data-ink). Some evidence of original thinking.	goals. The interface uses design elements that are beyond standard elements covered in class. It investigates and shows some patterns in the data, but the investigation could be more in-depth or extensive.	uses a few design elements that are beyond standard elements covered in class. The work attempt to investigate some simple and obvious patterns, but the investigation could be more in-depth or extensive.	apparent, but the attempts at innovation are not effective. There is no attempt to reveal patterns.	appears when looking at the interface).	
Report view longer description	**25 to >19.9 pts** **Excellent** Excellent design summary that clearly and articulately explains the background, the design process and all design decisions. The pattern/use case summary reveals and discusses hidden/complex phenomena and identifies excellent use cases, demonstrating a deep understanding of user needs. The report has no issues/errors in terms of fundamental academic writing principles.	**19.9 to >18.7 pts** **Very Good** Very good design summary that explains the design well and justifies most design decisions. The pattern/use case summary reveals and discusses several interesting patterns and identifies several relevant use cases. There are a few minor issues/errors in terms of fundamental academic writing principles.	**18.7 to >17.4 pts** **Good** Good design summary that gives a basic overview of the interface and explains most design decisions. The pattern/use case summary reveals some basic patterns, and identified basic use cases; however, the report could still be improved in some aspects such as use cases and patterns. There are a few minor and major issues/errors in terms of fundamental academic writing principles.	**17.4 to >16.2 pts** **Fair** The design summary provides an acceptable explanation of the interface and discusses a few design decisions, The pattern/use case summary does not match interface capability, or use cases are not appropriately addressed. There are also some minor and major issues/errors in terms of fundamental academic writing principles.	**16.2 to >12.4 pts** **Minimal** The design summary provides a basic explanation of the interface, but there is no justification for design decisions. The report does not mention or discuss patterns and use cases. There are several minor and major issues/errors in terms of fundamental academic writing principles.	**12.4 to >0 pts** **Inadequate** The work contains no relevant material. The design summary does not support the interface. There is no information about design decisions, patterns or use cases. The report does not follow academic writing principles.	/ 25 pts

Keep in mind, this submission will count for everyone in your Project Groups group.

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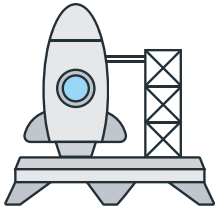

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