

# **GEOM90007 Information Visualization Assignment 3**

Due on Oct 22, 2023 at 23:59 p.m.

Submitted by

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## Design Summary

This summary demonstrate the design principles of our developed Melbourne Traveller's Guide Application.

### (1) TablePanel 1 - Place of Interest

As an innovative traveler's guide application, presenting places of interest is not only fundamental but beneficial in enhancing the overall experience of travelers. For the modern traveler, convenience and accessibility are contributing factors to their journey. Detailed information on places of interest, including their locations, ratings, and features, ensures travelers can plan efficiently in advance, navigating through destinations, and making the most out of their journeys.

Specifically, the first panel of our application presents a number of scenic spots and historical sites in Melbourne, Australia. The picker input on the bottom right shows a series of main themes of places of interest. For example, if you would like to explore different churches in Melbourne, simply tick church at the drop-down slider, and all the churches will be shown on the map as an icon. Clicking on the icon of a specific church will then present the name and pictures of the corresponding church on a pop window. Moreover, a 'Rating' feature located at the top right corner of the map can further enhance tourists' exploration journeys. The application also provides a button "suburb" on the bottom right, which divides the city of Melbourne into several blocks.

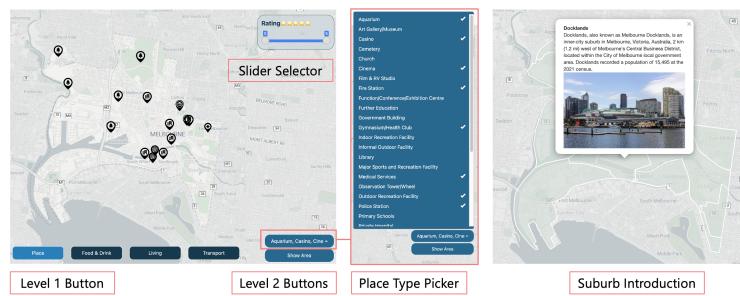


Figure 1: Place of Interest Panel

### (2) TablePanel 1 - Food & Drink

Delicious food is one of the key components of a successful trip. In this panel, we provide comprehensive information on food and drink locations in Melbourne's CBD. There are three checkboxes in the right corner, categorizing locations as Cafes and Restaurants, Takeaway Food Services, and Pubs, Taverns, and Bars. These categories cater to tourists who often seek out these options. Many tourists in Melbourne's CBD prefer dining out, especially if they enjoy drinking or opt for popular takeaway services. By selecting a checkbox, users will see color-coded circles on the map representing these categories. Clicking on these circles reveals details like the name, type, and address. This panel serves as an extensive guide for tourists, aiding in both planning and exploring.

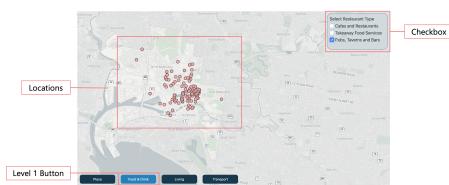


Figure 2: Food and Drink Panel



Figure 3: Living Panel

### (3) TablePanel 1 - Living

The 'Living' section of our interactive map has been carefully designed to meet the specific needs of tourists to Melbourne. Embedded with filters and a user-friendly interface, this section aims to simplify the experience of finding accommodation and public toilets, to improve the overall convenience and comfort of visitors during their stay in Melbourne.

In the 'Accommodation' part, we provided a range of lodging options including entire rooms, private rooms, and shared rooms, making sure choices to accommodate different preferences or privacy needs. To further improve the user experience of the process of finding suitable accommodation, users can filter options based on their budget, ensuring they find accommodations that are economically comfortable. Acknowledging that accommodations have different minimum stay requirements, we also offer the minimum night filter aids in eliminating options that do not align with the tourists' planned duration of stay. When switching to the Public toilet page, Tourists can instantly locate nearby restrooms, filtering options based on gender, accessibility, and baby facilities, ensuring convenience and accessibility for all.

#### (4) TablePanel 1 - Transport

In this panel, tourists can explore transportation options: trains, trams, buses, and walking paths, via buttons at the map's bottom right.

Clicking "Train" reveals Melbourne's train stations, each with an immersive icon. A detailed pop-up showcasing an authentic photo and further information will be presented when clicking the icon. The design of the pop-up, including its dimensions, font styles, and other visual elements, has been meticulously crafted for better visual appeal and readability. For the "Tram" section, stations are denoted using a single icon type in two distinct colors, representing the free tram zone and the charge zone respectively. By clicking on each icon, tourists can learn about the station name and routes pass by to better arrange their itinerary.

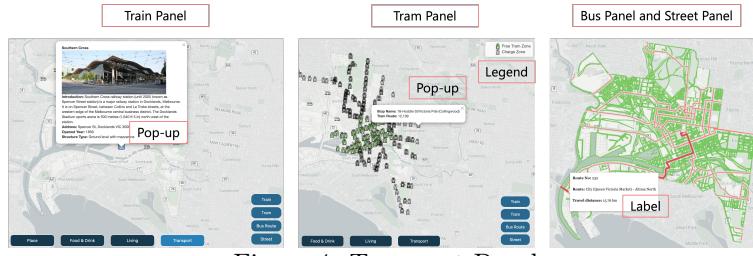


Figure 4: Transport Panel

Clicking the "Bus Route" and "Street" buttons will display the bus and walking path networks, respectively. Both are represented as continuous line strings to illustrate the full extent of each route. The bus route is rendered in light red, while the street is depicted in dark green. This color contrast ensures clarity, even when both are activated simultaneously. Notably, when the mouse hovers over a specific line string, it will be highlighted in a distinct color, and a label text will appear to provide more information.

#### (5) TablePanel 1 - WeatherBox

To enhance tourists' travel planning, a weather box is embedded. This feature allows tourists to familiarize themselves with current weather conditions and plan their visit accordingly. The design of this component has been thoughtfully crafted, boasting a symmetrical appearance and a well-considered text style and layout.

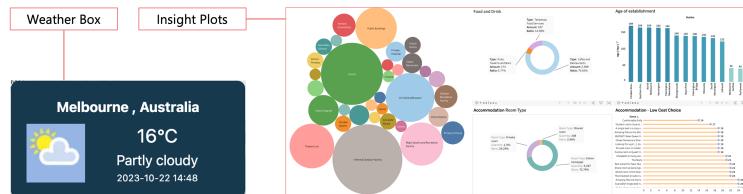


Figure 5: Weather Box and Insight Panel

#### (6) TablePanel 2 - Insight

Analysis plots from Tableau have been integrated into this panel to offer insights on various aspects. With extensive plot format, the covered topics delve into the most popular scenic categories, the distribution percentages of cafe types, the historical foundation of train stations, and pricing data related to residential areas within the Melbourne metropolitan region. By inspecting these plots, tourists can know more about his traveling destinations and boost his traveling enthusiasm.

## Discoveries Summary

- **Rating and classifying of different types of places of interest for tourists**
  - The interface features an intuitive design and a clear layout, travellers can easily explore popular tourist attractions at their destinations. The categorization and rating features provided by the interface allow users to filter and sort locations according to their interests and needs, enabling them to quickly find highly rated attractions.
- **Most popular scenes category in the Melbourne city**
  - In the second tab panel's bubble graph analysis, tourists can observe that the top attractions in the Melbourne area are categorized as Informal Outdoor Facilities, Churches, Art Galleries, and Museums. This visualization aids visitors in optimizing their travel plans and crafting a well-informed itinerary.
- **How many suburbs does Melbourne consist of ?**
  - With the application, both tourists and residents can gain in-depth insights into different suburbs of Melbourne. The one-click interactive map display feature in the app allows users to intuitively view the specific location, characteristics, and cultural background of each suburb. Every suburb is clearly marked and comes with detailed descriptions and images, offering users a rich visual and informational experience.
- **Showcasing Melbourne's diverse restaurants**
  - By integrating a restaurant type filtering feature, the application offers users a more diverse and personalized dining experience. Users can quickly search for and filter restaurants, cafes, or bars according to their interests, making this feature highly appealing to those wanting to experience different dining cultures in Melbourne.  
The restaurant type filtering function is designed with user experience and convenience in mind. We recognize that everyone's dining preferences are unique; some may prefer a quiet cafe, while others may be drawn to a bustling bar or pub. Hence, we created this feature to allow users to easily filter and find dining establishments that suit their tastes and interests.
- **Our food dashboard helps visitors to discover different types of food**
  - The integration of the doughnut chart has elevated the user experience and functionality of our app. With its intuitive graphical representation, users are no longer submerged in complex data or textual information; they can grasp the needed information at a glance.  
In terms of design, the color coding and layout of the doughnut chart are optimized to enhance readability and user-friendliness. Users can quickly understand and interpret data through a simple visual scan. This approach saves users' time and makes information retrieval pleasurable and stress-free.
- **Do you want to live comfortably or economically?**
  - In addition to the comprehensive dining options, our application also addresses accommodation needs by offering a feature that allows users to explore lodging options effortlessly. By integrating this feature, the application stands as a comprehensive tool for travelers and residents alike, promising a great experience in exploring and enjoying the diverse offerings of Melbourne - from dining to accommodation, and beyond.
- **People have three urgent needs, one of them is to use the restroom.**

- The availability and location of public restrooms play a crucial role in urban exploration and activities. This is especially helpful for tourists and pedestrians in the city, who find value in knowing the location of the nearest facilities. Our app enhances the travel and exploration experience of users by providing the precise locations and information of public restrooms in Melbourne.

This not only saves time and effort in locating restrooms but also increases confidence and comfort while exploring Melbourne. Users can focus more on enjoying their journey and discovering the city's wonders, without the worry of basic amenities. Consequently, this feature significantly boosts user satisfaction and travel experience.

- **Train Stations possess rich history and deep cultural heritage**

- Approximately 80% of the train stations have been standing for over a century, serving as architectural masterpieces and silent markers of the evolution of transportation and urban development. More than just transit hubs, these stations capture the tales of countless individuals who have traversed their corridors. For tourists, they serve as a vivid reminder of Melbourne's rich cultural heritage in the face of the modern world's swift pace.
- When tourists click on the icons of these train stations, they'll uncover details such as the station's opening date and images of its historic architectural style. This information serves to evoke the station's rich historical legacy.

- **Which is the deepest train station in the Melbourne metropolitan region ?**

- When accessing the pop-up window for these train stations, tourists will observe that some stations were constructed underground. We've included depth data in this panel, revealing, for instance, that Parliament railway station is 40 meters below the surface. Such details offer curious tourists a deeper insight into the unique features of the city's transportation history.

- **Free rides on the city circle trams**

- When accessing the tram station panel, tourists will quickly discern two distinct types, with one notably being free of charge. This information can be invaluable for budget-conscious travelers, as transportation expenses often weigh heavily on a journey's overall cost. Additionally, by taking the city circle tram at no cost, they can conveniently reach the Docklands harbour, bringing them closer to the scenic seaside.

- **What are the price ranges for accommodations?**

- In the second panel, the horizontal bar charts distinctly illustrate the accommodation price spectrum, highlighting rates as low as \$14 for a night's stay and reaching upwards of \$3,000. This data equips tourists to make informed decisions regarding their accommodation choices.

## Group Contribution

The Table 1 presents the contribution for each group member.

Table 1: Group Member Contribution

| Name               | Contribution to project   | Percentage contribution |
|--------------------|---|-------------------------|
| <b>Yizhi Liao</b>  | Designing the "Place of Interest" map panel and related analysis plots, writing the report and participating in the pitch presentation. | 25%                     |
| <b>Jiajin Yang</b> | Designing the "Food & Drink" map panel and related plots, writing the report and leading the pitch presentation.                        | 25%                     |
| <b>Yixin He</b>    | Designing the "Living" map panel and related plots, writing the report and leading the pitch presentation.                              | 25%                     |
| <b>Weijun Li</b>   | Designing the "Transport" map panel and related plots, writing the report and participating in the pitch presentation.                  | 25%                     |