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Kid GO: DESIGN SUMMARY

1.1 Introduction

Exploring new places has been the primary focus of all the tourists. A tourist map always comes in handy when exploring a new place or tracking their movements around a particular region. Most of the tourist maps are all biased based on specific age groups. They tend to be too complex for kids from the age group of 5 to 12 years to comprehend and decide on a destination. We have proposed a solution designed for the young explorers from the age group of 5 to 12 years, making them comfortable selecting a destination to explore from various points of interest nearby. *We have also assumed that these kids will be supervised by an adult while exploring these destinations*. This application is more suitable for a mobile platform due to the navigation feature required to explore, and mobility is needed to use this application.

1.2 Application's Working

The application consists of two modes, the parent's mode, and the kid's mode, which was decided based on the assumption we made. We have filtered out the point of interest specifically for kids in the Melbourne CBD region. The bounds of the map are selected carefully, which includes only the CBD region of Melbourne city. The flow of the application is as follows:

1. Kid's mode: The points of interest are displayed using a set of general icons [Figure 1]. The option of geo-locate helps the kid to track their current location in the Melbourne CBD region. The kid can then select the nearby point of interest by clicking on the icons. These icons show a pop-up with different images of the location. These images help the kid to decide on a destination based on their interests. The kid can explore the map by panning on it for different places nearby.
2. Parent's Mode: When the kid has selected the destination, the kid's guardian can turn on the parent mode of the application using a toggle button. In this mode, the navigation shows up from the current location to the kid's selected destination. Based on the mode of transport, the guardian can change the navigation mode according to the options [Traffic, Driving, Cycling, Walking]. The choice of viewing general services around the region during traveling is necessary. The services like Restaurants/Café, general Amenities like hospitals, police stations, toilets, drinking water facilities, and local shops around the locations can be viewed accordingly by clicking on these various services buttons available on the map. The guardian can also change the destination by clicking on a different location.

1.3 Design of Kid's Mode

The design process is a crucial part of the application, as it has a focus on a younger audience group. We want to make sure that the kids easily understand the map and decide on exploring specific destinations.

The map is restricted with a set of bounds, which is set around the Melbourne CBD region. The point of interest for the kid map layer in this specific region is filtered consisting of only **Library, Park, Theatre, Museum, Books, Cinema, Garden, Playground, Aquarium, Zoo, Gallery, and Bridge**. These points of interest are selected based on the common interests within the age group of kids. Visualizing these data is done by selecting a set of icons [Figure 1] and classifying the data accordingly. As shown in Table 1, the selected points of interest are classified and referenced to these icons. These icons are intended to be the map's main visualisation and designed as follows: When the kid interacts with the

map by clicking on an icon, the map is centred on that destination and pop-up images are displayed in a specific manner that highlights the destination selected. The icon's large size, high contrast and bright colours make the visualization pre-attentive for the application by directing the kid's attention towards the destinations. The base map is designed accordingly with low contrast and no additional components except the point of interest data. The geo-locate feature of the map makes an additional mark on the map. When it is turned on, the kid's current location is displayed with a blue circular effect, highlighting the current location.

Figure 1: ICONS

Point of Interests Data	Icons used to Represent
Library/ Books	bookshelf
Park	forest
Theatre	theatre
Museum	British-museum
Cinema	popcorn
Garden	tulip
Playground	swing
Aquarium	aquarium
Zoo	zoo
Gallery	photo
Bridge	bridge

Table1: Icons used for each Point of Interest

1.4 Design of Parent's Mode

The parent mode consists of the same base map, with an additional layer of road labels added to help in navigation. There are three significant services filtered from the point-of-interest: **Restaurants/Café, Shops [Convenience, Pharmacy, Supermarket], and other Amenities [Hospital, Police, Toilets, Post Office, Drinking Water, Parking, Parking Garage, Fuel].** The additional feature of this mode is the interactions made using buttons to select the various mode of transport and filter the services accordingly. This mode can also display the navigation from the current position to the selected destination in the kid's mode. Hiding other destinations from the kid's map except the chosen one makes it easier to identify the target and surrounding areas.

1.5 Data-graphic principles

The application is focused on the data-graphic principle. These principles are implemented based on specific reason, which are:

- Data Density: All the map components are excluded except for the selected point of interest. This makes the application simple and easier for the kids to understand.
- Data Correspondence: The application shows only the Melbourne CBD region. The point of interest data points is made sure to not cluster around a region, making it easier to visualise the data.
- Data integrity: The pop-up images of major destinations have been carefully chosen to maintain the integrity of the application.
- Data Aesthetics: The application is made aesthetically pleasing by adding pop-up images and icons on the map, which also grab the attention of the kids.

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Kid GO: Use-case summary

Use cases

Use Case 1: Plan trip for family with children

While a family decides their children to choose a travel destination, it is hard to explain all locations in Melbourne city. In the child model of our map, location represented as cartoon icons, and the selection of icon images are based on the location type, such as cartoon books represented as libraries, trees represented as gardens. Children are able to have some preliminary understanding of locations by observing icons. After Children choose the type of location and touch on icons, four images related to the location popups help children understand more details related to the location and children are free to decide the destination where they would like visit.

Use Case 2: How to arrive to the destination

Families with children during the travel, most of the itinerary decisions come from parents, or parents list several locations for their children to choose, which limits the children's right to choose independently. In the child model of our map, locations suitable for kids in Melbourne city have been filtered in the base map and converted as cartoon icons which gives children more opportunities to choose destinations they prefer to visit. After children select a destination to visit, it is impossible for children to find routes to arrive at the destination, this decision should be made by their parents. In the parent's model of our map, guardians can get their current location and a path will be shown from current location to the destination that has been chosen by kids. There are 4 modes of transportation methods applied in the parent model which are walking to a nearby destination, circling for good fitness, driving to a far destination or taking public transportation. Also, the route will be changed most suitable by switching travel mode.

Use Case 3: Parents looking for particular services

In the process of traveling, there are many situations where children cannot handle, such as being sick or going to the supermarket to buy necessities. In our map, the parent model provides three options for their guardians to show locations related to Restaurant, Amenity-service and local shops. While some accident occurs, parents can click on the Amenity-service to show all hospital locations in Melbourne city. Then, they can click on a particular location, and the map will show how they can get there.

Rationales

In use case 1: To help planning for trips easy for the family, we try to make two modes that are suitable for kids and their parents. Cartoon-style icons are used for kid mode to make it easier for them to understand, and road labels are removed to reduce cluttering and highlight the travel destinations. To further simplify the experience in kid mode and deal with unintentional input from children, we limited the map to the City of Melbourne and implemented two fixed zoom levels that kids can switch between. Services are shown in parent mode to help the parents plan for the logistics of the trip such as knowing in advance where they can get certain services around their accommodation. To help with trip researching and planning, we also show the location name together with the image popups so users can further research about those destinations using their names.

In use case 2: The main use of our map is when a family are already here in Melbourne. To facilitate shared decision-making, we try to make the switch between kid-mode and parent-mode smooth and seamless. After the kid chooses a destination, it is saved in parent mode to help them navigate there easily. We also allow the parent to switch travel mode according to their preference. Navigation is not only limited to the tourist destinations – parents can also find the route to the essential services during their travel by clicking on the service that they need at any moment. Geo-location helps both in terms of planning – family can find destinations in their area – and also in terms of navigating as their location on the map is updated in real time. Finally, to help people who are driving, we also include car parks in our amenity layer.

In use case 3: A map should have a base function for helping people in emergency, because ensuring an enjoyable and safe trip should be the number one consideration for our customers. Therefore, we have selected the most relevant amenities and services in our parent map, including emergency locations such as hospital, police, and public toilets. Again, geolocation and navigation also help to find the closest point of contact in case of emergency and how to get there quickly.