Bus Tracking Application

Group 19: SQL++

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Description of Application

This application uses the data of all bus arrivals, services, and bus stop numbers in Singapore. The application will be able to determine the information of each bus when the user enters the bus stop code number and it will display information such as the bus arrival timing, the type of bus and the bus capacity. Using the user's location, a list of suggested bus code numbers will be prompted for the user to decide. Each individual user will be able to create an editable list of "favorites" to save the buses or bus stops that they use often.

The bus is a popular mode of transportation in Singapore, however, only a limited number of bus stops have an electronic panel to display the bus arrival timing. The key idea behind the development of this application is to use public transport data online for everyone to easily access this bus information. The development of the application bridges learning data management and information system to applying these concepts in real world applications.
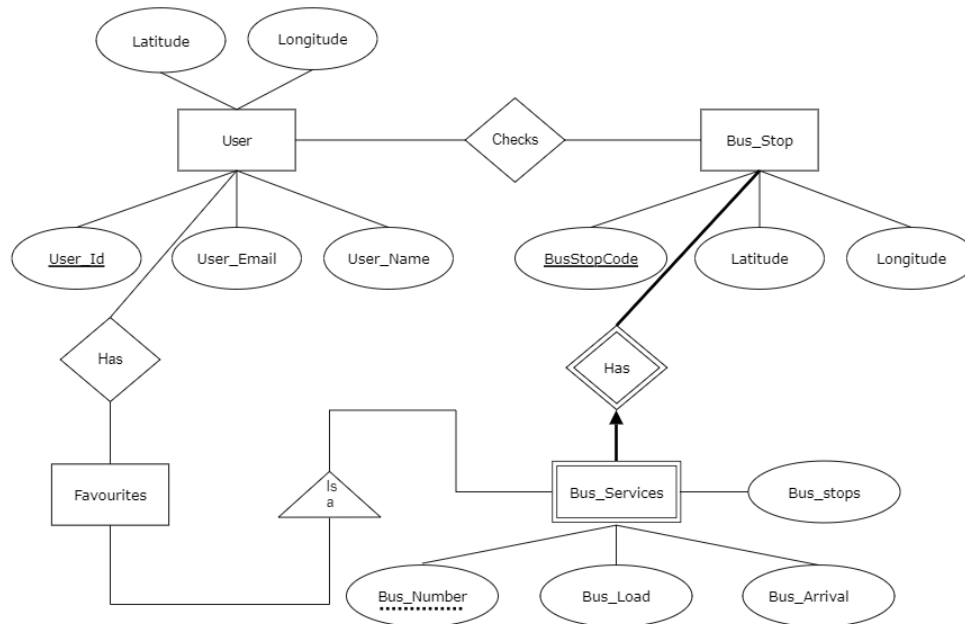
Dataset used

Bus Arrival https://datamall.lta.gov.sg/content/datamall/en/search_datasets.htmlsearchText=Bus%20arrival. This dataset contains information on the next 3 buses timing based and the current bus occupancy searched using the bus stop code number. There are 700 rows.

Bus Services https://datamall.lta.gov.sg/content/datamall/en/dynamic-data.html. This dataset contains information on all buses currently in operation, their first stop, last stop timing peak / off-peak frequency of dispatch. There are 700 rows.

Bus Stops https://datamall.lta.gov.sg/content/datamall/en/dynamic-data.html. This dataset contains information of the Bus Stop's code and their location coordinates. There are 5,000 rows.

Bus Routes https://datamall.lta.gov.sg/content/datamall/en/dynamic-data.html. This dataset contains information of the Bus Stop that the bus travels along and their codes. There are 25,500 rows.

Proposed relations/tables

Proposed table for the Entities: *Bus arrival, bus services, bus stops, user*
Proposed table: *Bus stops; Column (attributes): Latitude, Longitude, Road name, Description, Bus stop code*

Latitude	Longitude	Road name	Description	Bus stop code
1°18'40.3"N	103°46'42.2"E	Commonwealth Ave West	Dover Bus Stop	19031

Proposed table: *Bus services; Column (attributes): Service Number, Operator, Direction, Origin code, Destination code*

Service Number	Operator	Direction	Origin code	Destination code
851	SBS Transit	2	64125	64125

Proposed table: *Bus arrival; Column (attributes): Estimated arrival, Next Bus, Next Bus 2, Load, Type*

Estimated arrival	Next Bus	Next Bus 2	Load	Type
14:00	13:30	13:40	Seats available	Double Decker

Proposed table: *User; Column (attributes): Email, Mobile Number, User ID*

Email	Mobile Number	User ID
towkay_zxc@gmail.com	9123 7654	towkay88

Queries

Q1: Find the arrival timing of the bus
Q2: Finding the specific location and availability of the bus services
Q3: Checking the passenger volume of the bus service
Q4: All the bus routes from the start to the end
Q5: Finding the bus stops around you