

# BusToGo Platform

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## 1 Inspiration

Taking public transport in Vancouver is already very slow compared to larger cities such as Toronto. The process of purchasing bus tickets in Vancouver is rather inefficient and takes an extended period of time for two main reasons. One of the main issues with the current system is that each user must pay the fee once they are already on the bus. This leads to lines developing which can result in delays in the bus schedule, especially during rush hour periods. Another issue is that users aren't able to know in advance whether there will be enough room on the bus to accommodate everyone at the stop. With the limited capacity of the buses, combined with the surge of large groups of people, busses quickly fill up leaving many users waiting for the next bus (which can take up to an hour).

## 2 Solution Explanation

To solve the issues highlighted above with our current bus-ticket purchasing system, we created BusToGo. BusToGo is a program which increases the efficiency of the current system through the following ways. Within the BusToGo program you can complete three of the following tasks:

1. Creating a new bus route
2. Insert time data to a certain route
3. Get the List of Routes

BusToGo starts by gathering the following pieces of information from the user:

1. What Would You Like to Do?

### I Creating a new bus route

- i. Enter the name of the route
- ii. Enter the id of the route
- iii. Enter the start time of the route
- iv. Enter the id Of the stop you would like to depart on
- v. Enter the id Of the stop you would like to get off
- vi. Enter the number of the tickets you would like to book
- vii. Enter the stop name
- viii. Add another stop? Y/N
- ix. Enter the id of the route and time you would like to choose
- x. Would You Like to Finalize? Y/N

### II Insert time data to a certain route

### III Get the List of Routes

- i. You can either book a bus ticket by seeing all the available routes and times manually, or you can simply enter your desired location and time and BustoGo will find you the best option right away
- ii. Please Choose an option:
  - A. Seeing and Choosing a route and a time manually
  - B. Find me the earliest bus
- iii. Enter the id of the route you would like to choose
- iv. What stop would you like to depart on?(Enter the ID)
  - v. Enter the time of your departure
- vi. What stop would you like to get off at?(Enter the ID)
- vii. How many tickets do you need?

The BusToGo program connects to the SQL database which stores all the data for bus schedules, capacity, timing, etc. Thus, the program immediately updates the datatables in the database as the user adds information about their bus trip. When the user has answered all the necessary questions about their trip, BusToGo will display the next possible bus time that has sufficient capacity to facilitate all the users throughout their trip.

Looking at the client part of the program, we believe that BusToGo is able to solve the main issues with the current bus ticketing system in Vancouver. It allows the users to book bus tickets prior to boarding the bus which reduces the chance for line ups and delays while stopping at each bus station. Secondly, by using our platform users can also clearly see the current availability on each bus. This allows them to better plan their bus schedule without having to worry about the bus being too full to accommodate everyone.

### 3 Possible Improvements

For future versions, BusToGo could be expanded/improved in the following ways. First, we plan on developing the platform's user interface. Creating a more aesthetic design of the platform would help make BusToGo more user friendly and thus more readily used by everyday bus users. In addition, we plan on implementing a function to the platform which gets the current time and location of the user, and based on this information, provides various options for bus routes that the user can reserve. This would reduce the number of questions the user would need to manually input before getting the list of possible routes.

### 4 Program Architecture

Figure 1 depicts the overall architecture of the BusToGo platform.

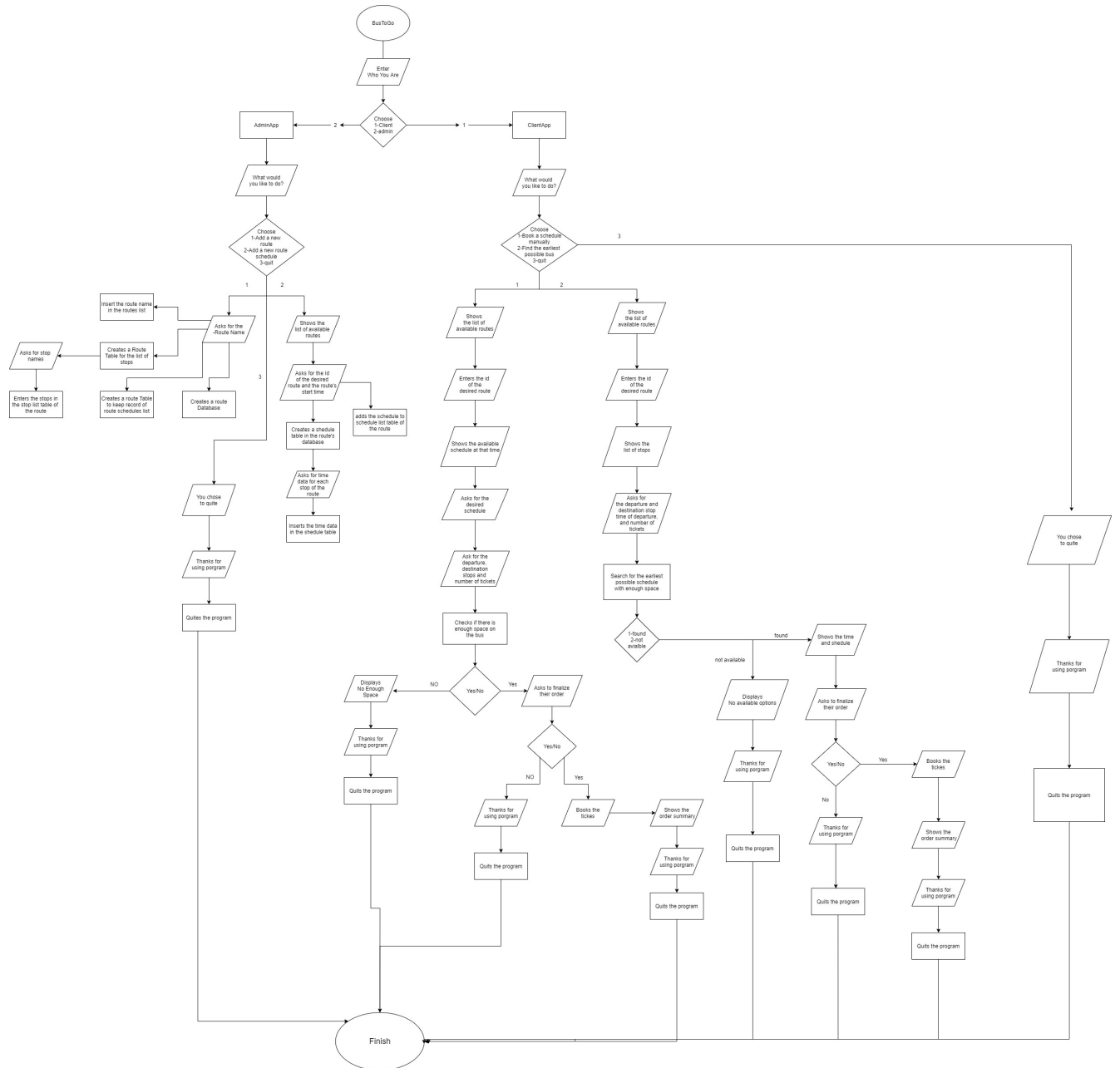


Figure 1: BusToGo Flow Chart