1 Chosen Company - BIXI Montréal

BIXI Montréal is a public bike-sharing service that operates across Montréal, providing regular and electric bicycles via a network of stations. The service provides an economical transit option for residents and tourists. While the system is well-integrated into the city's transportation system, its mobile application has some usability issues, notably for first-time users who are not familiar with the environment. Those challenges, if addressed, could improve convenience and enhance the overall customer experience.

2 Main Challenges

Because our team includes both frequent BIXI users and newcomers to Montréal, we examined challenges from both perspectives. Two recurring shortcomings were identified: difficulty in quickly locating the nearest stations available, and the lack of features to streamline repeated routes. The following points outline these challenges in greater detail:

2.1 Limited Options for Finding Nearby Stations

One of the primary challenges, especially for new users, is locating the nearest station with available bikes or docks. While the BIXI displays an interactive map of station locations, users must manually scroll and zoom to identify stations near them. Unlike other location-based service apps that offer a clickable, ranked list of the closest locations, BIXI provides no simple list view.

This forces users—particularly those unfamiliar with the city or pressed for time—to visually scan the map, a process that can be both time-consuming and inconvenient. This becomes especially frustrating during peak hours. For example, a user might travel to a station only to find that bikes or docks are no longer available upon arrival, requiring them to re-enter their location and search again. This repetitive process can be highly frustrating when planning a trip in a time-sensitive situation.

2.2 Tedious Process for Frequent Routes

For returning users who regularly commute or take recurring trips with BIXI, the lack of a "saved location" feature creates another inconvenience. Frequent riders often travel to the same locations, such as home or work, yet they must manually search for starting and ending stations each time.

Without the ability to save commonly used locations, these users cannot instantly retrieve station availability for their preferred locations. This adds unnecessary steps to their routine and over time, can reduce user satisfaction and loyalty.

3 Proposed Solution

Our proposed solution is to develop a chatbot that functions as a virtual assistant for BIXI users, designed specifically to address the two key challenges identified:

1. Providing multiple nearby station options to choose from
2. Offering a "favorite locations" feature for frequently selected locations.

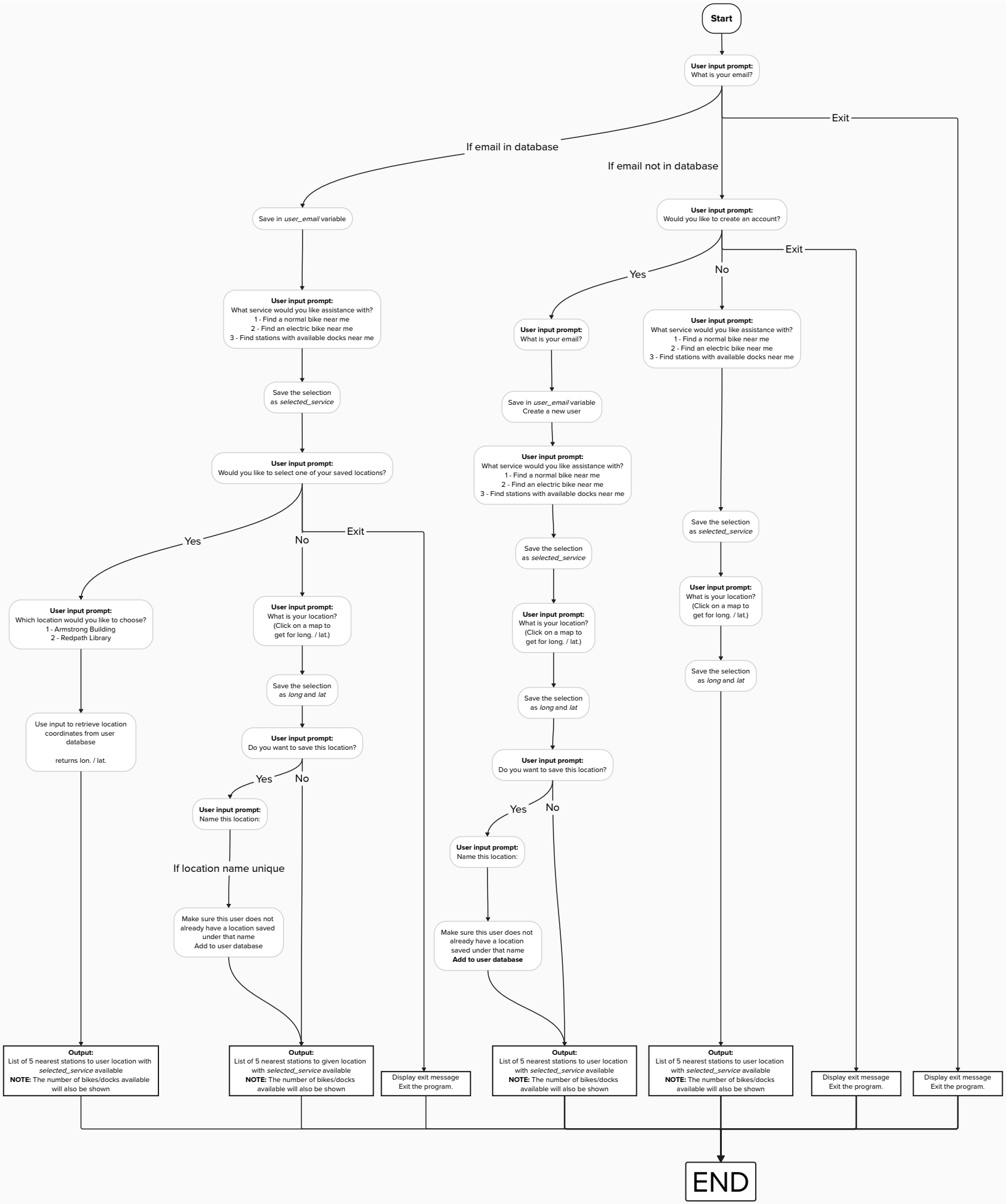
By guiding the users through a streamlined conversational workflow and gathering information along the way, the chatbot will deliver instant, relevant responses in a simple and intuitive format, while enabling future personalization.

3.1 Chatbot Workflow

1. **Email Collection:** The chatbot begins by requesting the user's email address. Although BIXI already stores this information, it will be used to verify whether the user is an existing customer. If the user is new, the chatbot will offer an account creation option.
2. **Service Selection:** The user selects their desired service type: regular bike, electric bike, or docking station.
3. **Location Request:** After confirming the service type, the chatbot requests the user's location. This is done by opening a map interface where the user can simply pin their current location, allowing the chatbot to retrieve the latitude and longitude automatically.
4. **Real-Time Availability:** Based on the user's location, the chatbot generates a ranked list of the five nearest stations, displaying the number of available bikes or docking spots at each location.
5. **Save Locations:** Finally, the chatbot asks if the user would like to save the selected location as a favorite for future trips. Users can label each saved location (e.g., "Armstrong Building", "Berri-UQAM"), enabling them to instantly retrieve availability information for frequent locations without repeating the search process.

3.2 Benefits

By answering no more than five quick questions, users can access multiple nearby station options in seconds, eliminating the need for manual map navigation. The favorite routes feature further reduces search time for frequent riders, allowing them to check availability with a single click. Overall, this solution will make the BIXI service more user-friendly, increase rider satisfaction, and encourage more frequent use, especially in time-sensitive situations.


Start
User input prompt:
What is your email?
Exit
If email in database
If email not in database
Save in user_email variable
User input prompt:
Would you like to create an account?
Exit
Yes
No
User input prompt:
What service would you like assistance with?
1 - Find a normal bike near me
2 - Find an electric bike near me
3 - Find stations with available docks near me
User input prompt:
What is your email?
User input prompt:
What service would you like assistance with?
1 - Find a normal bike near me
2 - Find an electric bike near me
3 - Find stations with available docks near me
Save the selection
as selected_service
Save in user_email variable
Create a new user
User input prompt:
What service would you like assistance with?
1 - Find a normal bike near me
2 - Find an electric bike near me
3 - Find stations with available docks near me
Save the selection
as selected_service
User input prompt:
Would you like to select one of your saved locations?
Yes
No
Exit
Save the selection
as selected_service
User input prompt:
What is your location?
(Click on a map to
get for long. / lat.)
User input prompt:
Which location would you like to choose?
1 - Armstrong Building
2 - Redpath Library
User input prompt:
What is your location?
(Click on a map to
get for long. / lat.)
User input prompt:
What is your location?
(Click on a map to
get for long. / lat.)
Save the selection
as long and lat
Save the selection
as long and lat
Save the selection
as long and lat
Use input to retrieve location
coordinates from user
database
returns lon. / lat.
User input prompt:
Do you want to save this location?
User input prompt:
Do you want to save this location?
Yes
No
Yes
No
User input prompt:
Name this location:
User input prompt:
Name this location:
If location name unique
Make sure this user does not
already have a location saved
under that name
Add to user database
Make sure this user does not
already have a location
saved under that name
Add to user database
Output:
List of 5 nearest stations to user location with
selected_service available
NOTE: The number of bikes/docks available
will also be shown
Output:
List of 5 nearest stations to given location
with selected_service available
NOTE: The number of bikes/docks
available will also be shown
Display exit message
Exit the program.
Output:
List of 5 nearest stations to user location
with selected_service available
NOTE: The number of bikes/docks
available will also be shown
Output:
List of 5 nearest stations to user location
with selected_service available
NOTE: The number of bikes/docks
available will also be shown
Display exit message
Exit the program.
Display exit message
Exit the program.
END