# Functional Requirement

FR-001 User Registration

Description: New users can register an account.

Input: Email, password, and other information provided by the new user.

Output: Registration-success email sent to the user; user data written to the database and verified.

FR-002 User Login

Description: Registered users log in with email and password.

Input: Email and password entered by the user.

Output: Successful login; main interface displayed.

FR-003 Manage Users

Description: Administrators can modify or delete user account information.

Input: Selected user ID and new account details.

Output: Updated user information or deleted user record in the system.

FR-004 Create Origin

Description: Users can set an origin location.

Input: Coordinates or address of the origin.

Output: User-submitted origin confirmed and stored.

FR-005 Update Destination

Description: Users can change the destination location.

Input: New destination coordinates or address.

Output: User-submitted destination confirmed and stored; updated route presented.

FR-006 Plan Route

Description: The system provides the optimal route based on origin, destination, and transport mode.

Input: Origin and destination details plus selected transport mode.

Output: Optimal route including distance, time, and transport mode.

FR-007 Set Transport Mode

Description: Users can customize preferred transport modes.

Input: Combination of transport modes selected from the system-supported list.

Output: Choice saved; route planning updated accordingly.

FR-008 Maintain Public Transport Timetable

Description: Administrators can update or add public transport timetables.

Input: New or modified timetable entries.

Output: Timetable data validated, updated, and confirmed.

FR-009 Monitor Traffic Conditions

Description: The system automatically fetches and displays real-time city traffic.

Input: Real-time traffic data from data sources.

Output: Live traffic conditions updated and pushed to the user interface.

FR-010 Mark Point of Interest

Description: Users can mark specific map locations as POIs and save them to their account.

Input: POI coordinates plus user-supplied category and description.

Output: POI saved and displayed on the user interface.

FR-011 Modify Point of Interest

Description: Users can update POI information.

Input: Selected POI and changed content.

Output: POI updated and changes saved.

FR-012 Manage Administrators

Description: Super administrators can add, remove system administrators, and modify their permissions.

Input: Admin or super-admin ID and operation request.

Output: Management and operation records updated.

FR-013 Input Location Information

Description: Users enter location data for route planning or other features.

Input: Address or coordinates.

Output: Location confirmed and stored.

FR-014 Modify Location Information

Description: Users can update saved location data.

Input: Location details to be updated.

Output: Updated location saved.

FR-015 Update Route

Description: Users can request the system to recalculate and provide the best route based on the latest conditions.

Input: Origin and destination, possibly new transport preferences.

Output: New best route options displayed.

FR-016 Delete Route

Description: Users can remove unwanted routes.

Input: Route information to be deleted.

Output: Route confirmed deleted from the system.

FR-017 Delete User

Description: Administrators can delete user accounts.

Input: User information to be deleted.

Output: User data removed from the system.