

Project Technical Specifications and Environment

- User Requires Python 3.0.0 or Higher Environment to Run this Project.
- To Install Python: You Can Click On [THIS](#).
- To Check Your Python Environment:
 - Open Terminal (For MAC Users) or Command Prompt (Windows Powershell)
 - Type “python3” and Press Enter
 - If Such Screen Is Visible: You Are Good to Go.

```
(base) mitulnakrani@Mituls-MacBook-Pro ~ % python3
Python 3.11.4 (main, Jul 5 2023, 08:54:11) [Clang 14.0.6 ] on darwin
Type "help", "copyright", "credits" or "license" for more information.
>>> █
```

Softwares Used:

- MySQL WorkBench
- Visual Studio Code

Python Prerequisite Libraries to Be Installed:

- [PyMySQL](#) (Click Open Installation Documentation)
 - To Install, Open Terminal or Command Prompt.
 - Type “*pip install pymysql*” and Press Enter.
 - The Library Will be Successfully Installed.
- [PwInput](#) (Click Open Installation Documentation)
 - To Install, Open Terminal or Command Prompt.
 - Type “*pip install pwinput*” and Press Enter.
 - The Library Will be Successfully Installed.
- [Matplotlib](#) (Click Open Installation Documentation)
 - To Install, Open Terminal or Command Prompt.
 - Type “*pip install matplotlib*” and Press Enter.
 - The Library Will be Successfully Installed.
- [Numpy](#) (Click Open Installation Documentation)
 - To Install, Open Terminal or Command Prompt.
 - Type “*pip install numpy*” and Press Enter.
 - The Library Will be Successfully Installed.

How to Setup Database:

- Open the submitted “*Transit_Tracker_Project_Dump.sql*” File in Your MySQL WorkBench.
- Execute the Entire File to Create the Database and Insert Data in Tables.

How to Run the Project:

After Installing the Python Environment and all the Prerequisite Libraries, Follow the given Steps:

- 1) Navigate to the Folder in which the submitted “project.py” file is situated in your terminal or command prompt.
- 2) To run project, Type “*python project.py*” and Press Enter, This will Execute the Project.
- 3) It will First Ask Your Database Username and Database Password to connect to the database. Once Connected You will be able to perform operation

Username Password of The Program Existing User (With Existing Data):

```
#####
##### -- Welcome to the MBTA Transit Tracker -- #####
#####
```

Please select one of the following options

1. EXISTING USER
2. CREATE ACCOUNT
3. QUIT

Enter your choice: 1

Enter Username: nakrani_m

Enter Password: *****

Username: nakrani_m

Password: mitul

Project Flow:

- Once the user enters the correct username and password, He/She Will be Prompted With the following Menu:

```
-----
Please select one of the following options (If Clicked Wrong Operation, Type quit when prompted to go to Main Menu)
1. ADD CHARLIE CARD
2. VIEW CHARLIE CARDS
3. DELETE CHARLIE CARD
4. ADD BALANCE TO CHARLIE CARD
5. VIEW TRAVEL LOG
6. BOOK A JOURNEY
7. ADD CREDIT CARD
8. EDIT PROFILE INFORMATION
9. UPDATE JOURNEY STATIONS
10. DELETE CREDIT CARD
11. DATA VISUALIZATIONS
12. SIGN OUT
Enter your choice: 
```

- User Can Select Any of the 12 Options from the menu by just choosing the number of the operation:
- Here I will Demonstrate one Example of Each Create, Read, Update, Delete Operation.
- 1) Add Charlie Card: (CREATE)

```
-----
Please select one of the following options (If Clicked Wrong Operation, Type quit when prompted to go to Main Menu)
1. ADD CHARLIE CARD
2. VIEW CHARLIE CARDS
3. DELETE CHARLIE CARD
4. ADD BALANCE TO CHARLIE CARD
5. VIEW TRAVEL LOG
6. BOOK A JOURNEY
7. ADD CREDIT CARD
8. EDIT PROFILE INFORMATION
9. UPDATE JOURNEY STATIONS
10. DELETE CREDIT CARD
11. DATA VISUALIZATIONS
12. SIGN OUT
Enter your choice: 1
```

Enter Charlie Card Number:

```
Enter Charlie Card Number: 1234567
Enter Card Issue Date (YYYY-MM-DD): 2023-12-09
Enter Card Type: (['NORMAL', 'REDUCED_FARE']): NORMAL
Charlie Card Added Successfully
```

- Now Lets See If the Charlie Card is Displayed in the View Option
- 2) View Charlie Card: (READ)

```

Please select one of the following options (If Clicked Wrong Operation, Type quit when prompted to go to Main Menu)
1. ADD CHARLIE CARD
2. VIEW CHARLIE CARDS
3. DELETE CHARLIE CARD
4. ADD BALANCE TO CHARLIE CARD
5. VIEW TRAVEL LOG
6. BOOK A JOURNEY
7. ADD CREDIT CARD
8. EDIT PROFILE INFORMATION
9. UPDATE JOURNEY STATIONS
10. DELETE CREDIT CARD
11. DATA VISUALIZATIONS
12. SIGN OUT
Enter your choice: 2

```

Card Number	Card Type	Card Balance	Card Issue Date
0000111	NORMAL	7.6	2023-12-09
1111111	NORMAL	20.200000000000003	2022-06-05
1234567	NORMAL	0.0	2023-12-09
2223334	NORMAL	50.0	2023-12-09
7777777	NORMAL	7.799999999999999	2020-11-30
2222222	REDUCED_FARE	44.809999999999995	2021-10-30
9999999	REDUCED_FARE	3.9	2023-12-07

- You Can See, Charlie Card With Number 1234567 is Added in the Database and is now Visible on the Program
- Now Lets Delete that Charlie card
- 3) Delete Charlie Card: (DELETE)

```

Please select one of the following options (If Clicked Wrong Operation, Type quit when prompted to go to Main Menu)
1. ADD CHARLIE CARD
2. VIEW CHARLIE CARDS
3. DELETE CHARLIE CARD
4. ADD BALANCE TO CHARLIE CARD
5. VIEW TRAVEL LOG
6. BOOK A JOURNEY
7. ADD CREDIT CARD
8. EDIT PROFILE INFORMATION
9. UPDATE JOURNEY STATIONS
10. DELETE CREDIT CARD
11. DATA VISUALIZATIONS
12. SIGN OUT
Enter your choice: 3

```

```

Available Charlie Cards
1. 0000111 - Available balance: $7.6
2. 1111111 - Available balance: $20.200000000000003
3. 1234567 - Available balance: $0.0
4. 2223334 - Available balance: $50.0
5. 7777777 - Available balance: $7.799999999999999
6. 2222222 - Available balance: $44.809999999999995
7. 9999999 - Available balance: $3.9
Choose Charlie Card: 3
Charlie Card Deleted Successfully

```

- Now Lets Check id that Charlie card is deleted or not

```

Please select one of the following options (If Clicked Wrong Operation, Type quit when prompted to go to Main Menu)
1. ADD CHARLIE CARD
2. VIEW CHARLIE CARDS
3. DELETE CHARLIE CARD
4. ADD BALANCE TO CHARLIE CARD
5. VIEW TRAVEL LOG
6. BOOK A JOURNEY
7. ADD CREDIT CARD
8. EDIT PROFILE INFORMATION
9. UPDATE JOURNEY STATIONS
10. DELETE CREDIT CARD
11. DATA VISUALIZATIONS
12. SIGN OUT
Enter your choice: 2

```

Card Number	Card Type	Card Balance	Card Issue Date
0000111	NORMAL	7.6	2023-12-09
1111111	NORMAL	20.200000000000003	2022-06-05
2222222	REDUCED_FARE	44.809999999999995	2021-10-30
2223334	NORMAL	50.0	2023-12-09
7777777	NORMAL	7.799999999999999	2020-11-30
9999999	REDUCED_FARE	3.9	2023-12-07

- That Charlie Card is Successfully Deleted From the Database:
- Let Us perform an Update Operation:
- 4) Edit Profile Information (Update):

	username	firstname	lastname	address_id	email	contact_no	date_of_bir...	
	nakrani	mitul	nakrani	4	nakrani@gmail.com	1234567890	2002-10-02	
	nakrani_m	Mitul	PATEL	2	nakrani.mi@northeastern.edu	9090909090	2001-10-30	
	patel_t	Tony	Patel	3	patel.tony@northeastern.edu	1212121212	2001-12-10	
	shah_a	Aneri	Shah	1	shah.ane@northeastern.edu	9898989898	2000-07-23	
	NULL	NULL	NULL	NULL	NULL	NULL	NULL	

- As You Can See the Last Name for My User is 'PATEL', Lets Change That

```

Please select one of the following options (If Clicked Wrong Operation, Type quit when prompted to go to Main Menu)
1. ADD CHARLIE CARD
2. VIEW CHARLIE CARDS
3. DELETE CHARLIE CARD
4. ADD BALANCE TO CHARLIE CARD
5. VIEW TRAVEL LOG
6. BOOK A JOURNEY
7. ADD CREDIT CARD
8. EDIT PROFILE INFORMATION
9. UPDATE JOURNEY STATIONS
10. DELETE CREDIT CARD
11. DATA VISUALIZATIONS
12. SIGN OUT
Enter your choice: 8

Existing User Profile Information
First Name: Mitul
Last Name: PATEL
Email: nakrani.mi@northeastern.edu
Contact Number: 9090909090
Date of Birth: 2001-10-30

Value to be updated
1. First Name
2. Last Name
3. Email
4. Contact Number
5. Date of Birth
Enter your choice: 2
Enter new Last Name: NAKRANI
Last Name Updated Successfully

```

- Now Let's Check Database:

	username	firstname	lastname	address_id	email	contact_no	date_of_bir...	
	nakrani	mitul	nakrani	4	nakrani@gmail.com	1234567890	2002-10-02	
	nakrani_m	Mitul	NAKRANI	2	nakrani.mi@northeastern.edu	9090909090	2001-10-30	
	patel_t	Tony	Patel	3	patel.tony@northeastern.edu	1212121212	2001-12-10	
	shah_a	Aneri	Shah	1	shah.ane@northeastern.edu	9898989898	2000-07-23	
	NULL	NULL	NULL	NULL	NULL	NULL	NULL	

- In Similar Way the User Can Perform Every Operations Just by Typing the Command Number and Pressing Enter to Execute That Command