APPENDIX 1

CAB BOOKING SYSTEM

END TERM REPORT

by

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November, 2020

APPENDIX 2

Student Declaration

This is to declare that this report has been written by me/us. No part of the report is copied from other sources. All information included from other sources have been duly acknowledged. I/We aver that if any part of the report is found to be copied, I/we are shall take full responsibility for it.

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Date: 30th October 2020

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BONAFIDE CERTIFICATE

Certified that this project report “CAB BOOKING SYSTEM ” is the bonafide work of “Vishal Goyal, Purvi Sharma, Edmond Tabiri Aning” who carried out the project work under my supervision.

Dr. Dhanpratap Singh

Associate Professor

25706

Intelligent System

1. Background and objectives of project assigned

1.1 Background and Motivation:

In today's era, everyone wants convenience and comfort in daily life activities but it is not possible everywhere. Travelling is also a major part of routine activities and that too, with ease and comfort in the journey.

If we look at the people of working class, a question that most often come to people's mind is;" Oh my god, these people are really getting late!!". This question does give us something to ponder upon i.e. in today's growing population and the rush in most of the transport vehicles, it has really become very difficult to travel for the most basic routines like jobs or grocery shopping etc. There should be a way to get to your destination that should be both affordable and fast, so what could be a better option than CAB.

A cab is easy to afford for daily commute and also a great way to save time that people waste in waiting for buses or trains. Furthermore, it is very comfortable and safe for travel.

"**Flash cabs**" is project that brings to you a cab booking system that is efficient and easy to also use. It is designed with python language and Tkinter for Graphical User Interface (GUI). In this application a user can easily create an account and book any cab he/she wants out of the list of cars mentioned in the booking interface. Moreover, when a user books a cab, he/she has an option to cancel rides under 10 minutes.

Figure 1

1.2 Goals and Objectives:

The objective of this project was to create an application for an efficient cab booking system using python language and Tkinter GUI. Our goal was to create a platform which is attractive and easy to use for everyone.

In our objectives, we planned to create an interface which gives user options to book a cab and as soon as a user books a cab, we guarantee the user of fast pick up i.e. 15 minutes and our cab will be at your doorstep. Flash Cabs operates in Four cities i.e. Bangalore, Pune, Mumbai and Hyderabad.

For the designing of the interface we used Tkinter module on python interpreter. As for the Tkinter module, we used widgets such as buttons, labels, images etc.

The secondary goal of the project was regarding the authentication and safety of the user's information. All the information that is provided to use by User is kept in safety and only we and user can access the information with no third-party involvement.

Authentication is also another feature of our application. When user provides us with the credentials, there are many layers of authenticating the information provided to us by user.

Information like phone number, email, pin code, username, pickup point etc. are verified so that our services can be of use to user and no frauds can be committed at both ends.

2. Description of Project

2.1 Architectural Diagram:

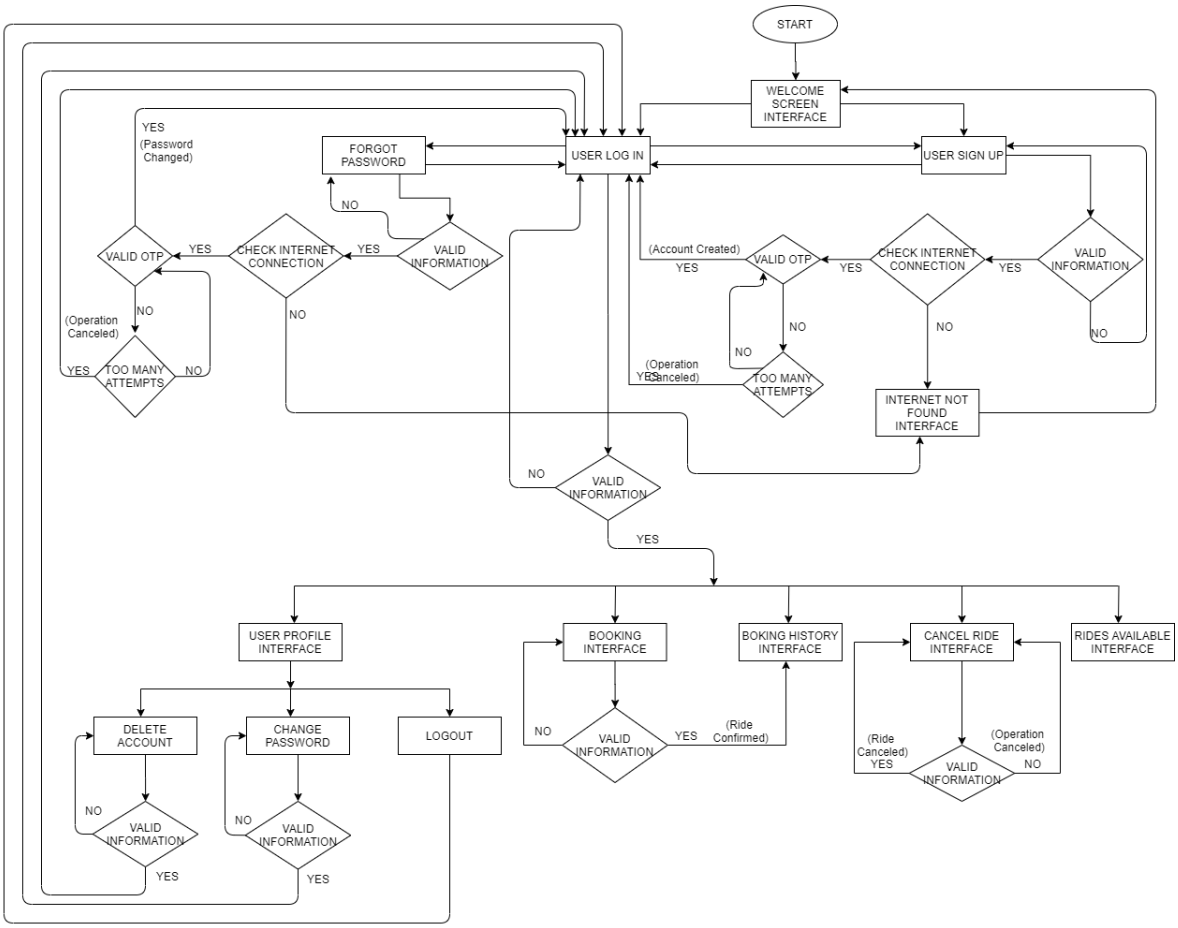


Figure 2

2.2 Execution Steps:

1. A user launches the application on his/her system, a welcome window is launched on the screen. The user has two options either to login or signup. If user is first-time user, he/she will click signup button and will be directed to a signup form in which the user has to fill username, email and password for registration.
2. For registration of account user has to have an internet connection. If no internet connection is found then user will be directed back to welcome screen. For email verification, an OTP (one time password) will be sent to the given mail and user will have to fill the OTP on the verification form to register successfully. For OTP verification only 3 chances will be given after which user will be directed back to welcome screen**.**
3. After a successful registration, user will be directed to the login page. User will login to the system with the credentials and if the credentials match, will be directed to booking interface. If user wants to see what are the cabs that are available, he/she will click on rides available, where there is a list of cars for selection.
4. For booking a car, user will click on book now and will provide name, city, pin code and location for pick-up, a phone number for contact with the driver. User will select the cab out of a list of cars. After confirming the booking, user can view booking history for viewing their Booking ID. If a user wants to cancel the ride, he/she can cancel ride by confirming a booking ID. User has cancel option for a booking only for 10 minutes after which is it not possible to delete any bookings.
5. Booking history also has information of all the prior booking user has made using the account.
6. User can use user profile, for changing password or to log out of system or Delete account.
    - **6.1** To change password user has to fill old password, new password and confirm new password.
    - **6.2** To delete account, user will have to fill password and account will be deleted.
    - **6.3** To log out, user will click On Log Out.

3. Description of Work Division in terms of Roles among Students

3.1 Tasks:

A system such as cab booking is a very complex system. So, there are many tasks that needed to be done. Give below is the classification of tasks that were required to successfully build this system:

1. Web scrapping: For gathering information about cab booking system i.e. how it works, what are its features. Gathering information about various rides which are available on our booking system. Collecting zip codes of various locations in which cab facility is provided.
2. Storing data: Finding the optimal way of storing user data, rides, and zip codes. Designing the format in which the data is to be stored.
3. Login/Sign Up interface: To design an interface that prompts user with login or sign up interface to continue further.
4. Book Ride Interface: To prompt a user with booking form after logging into account. User must provide few details to book a ride.
5. Cancel Ride interface: A interface from which user can cancel ride with in ten minutes of booking ride.
6. Booking History interface: A interface from which user can view his current as well as his past bookings.
7. Rides Available interface: To design an interface to prompt user with the rides available for booking and their base fare.
8. User Profile interface: A interface through which a user can update his account or even delete it.

3.2 Tasks Distribution:

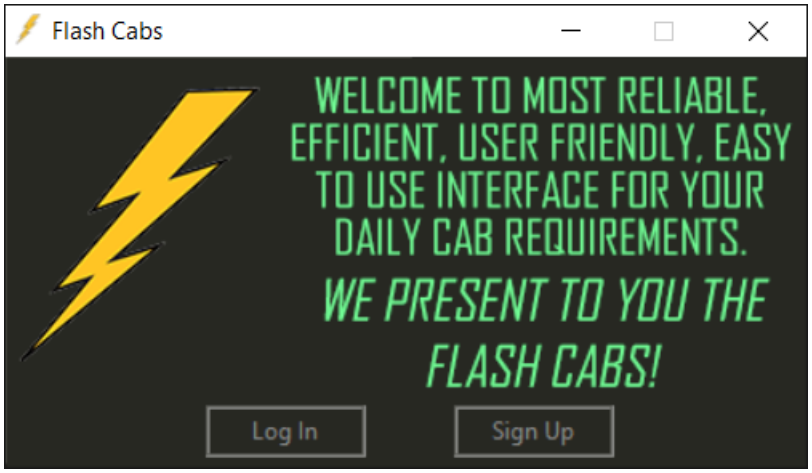
As a group of three members we decided to distribute these tasks equally. The distribution is as follows:

1. Login/ Sign Up interface, User Profile interface design were assigned to Vishal.
2. Cancel ride interface, web scrapping, storing data were assigned to Edmond.
3. Book ride, booking history and rides available interface design were assigned to Purvi.

4. Implementation of scheduled work of Project

4.1 Welcome Screen:

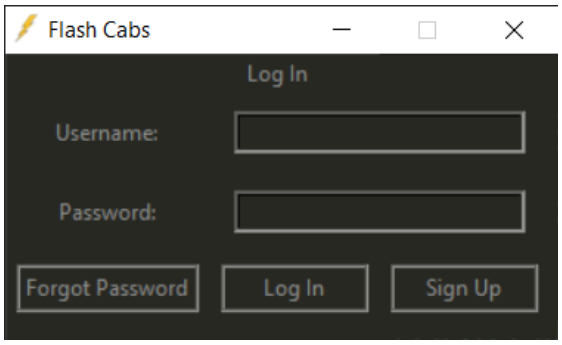
When the system is started the user is prompted with a welcome screen from where he can navigate to either login interface to sign up interface (Interface 1).



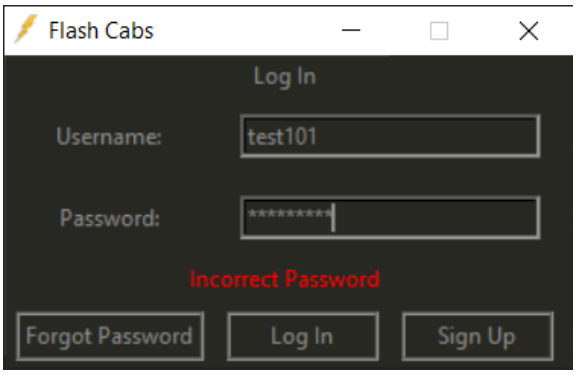
Interface 1

4.2 Login Interface:

From welcome screen if user navigate to log in interface, he/she will be prompted with a login form where user must fill out his/her username and password to log in. Furthermore, there are two more options in one in case user forgets his/her password and other if he/she does not have any account, he/she can navigate to sign up interface as well (Interface 2). In case user provides wrong credentials, he/she will be prompted with an error (Interface 3).



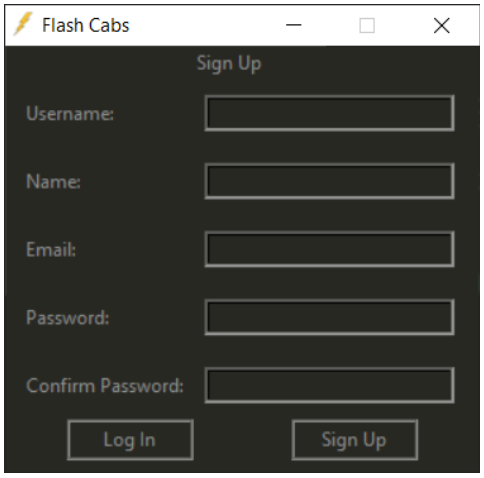
Interface 2



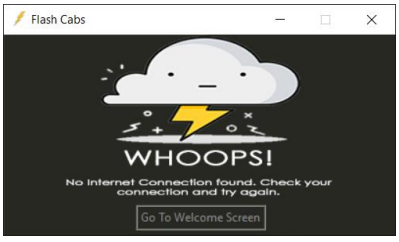
Interface 3

4.3 Sign Up Interface:

If in case user does not have any account, he/she might want to sign up for one. So, whenever user clicks on Sign Up button, he/she will be prompted with sign up interface (Interface 4). User must fill out the given form. If the credentials were correct, a OTP (one-time password) will be send to his/her respective email address to validate account creation.(For that internet is required, if disconnected user will be redirected to no internet screen (Interface 5)). Various validators are used to validate the information provided by the user. If provided credentials are wrong, then user is prompted with error regarding to that.



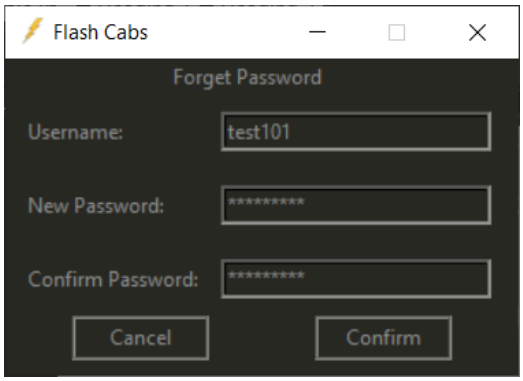
Interface 4



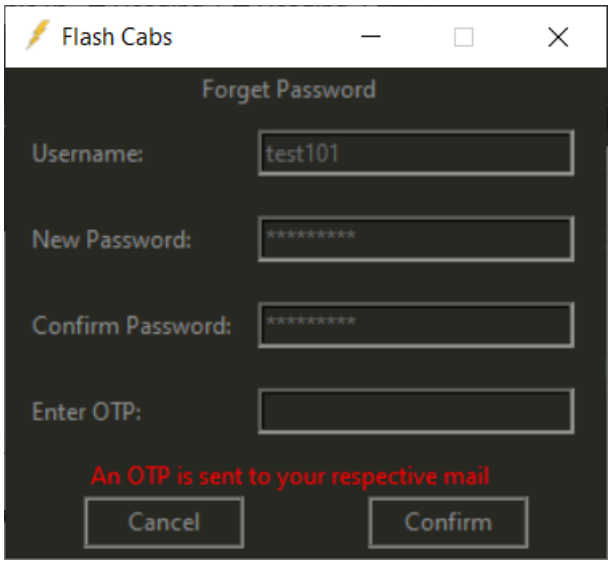
Interface 5

4.4 Forgot Password Interface:

If user ever forgets his/her password while logging in, he/she can click on forgot password button on login screen. User will be redirected to forgot password interface where they can set up their new password (Interface 6).If device is connected to internet (else Interface 5) an OTP (one-time password) is sent to their respective mails to verify (Interface 7). If OTP verifies, user will be redirected to login screen (Interface 2).



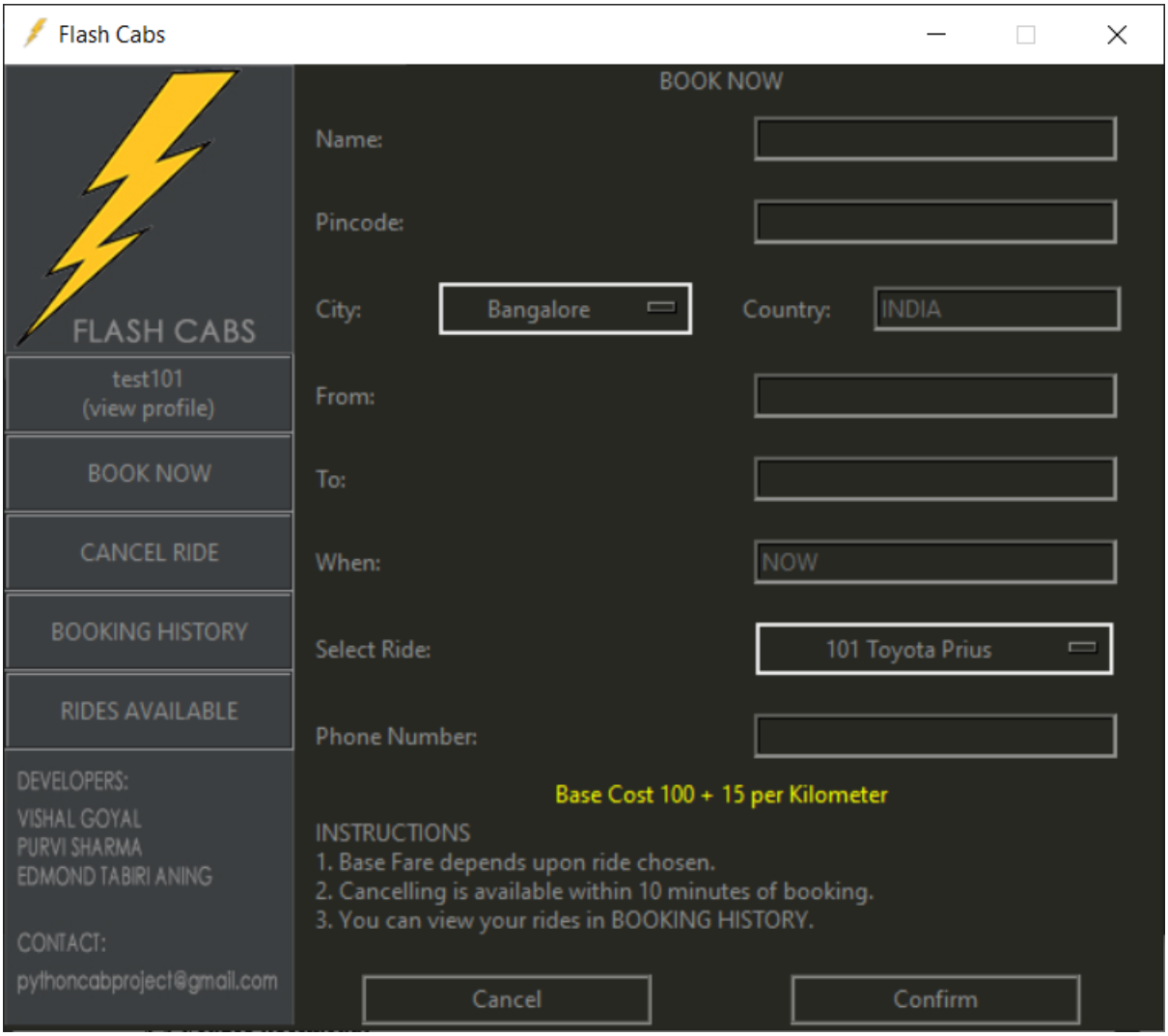
Interface 6



Interface 7

4.5 Book Now Interface:

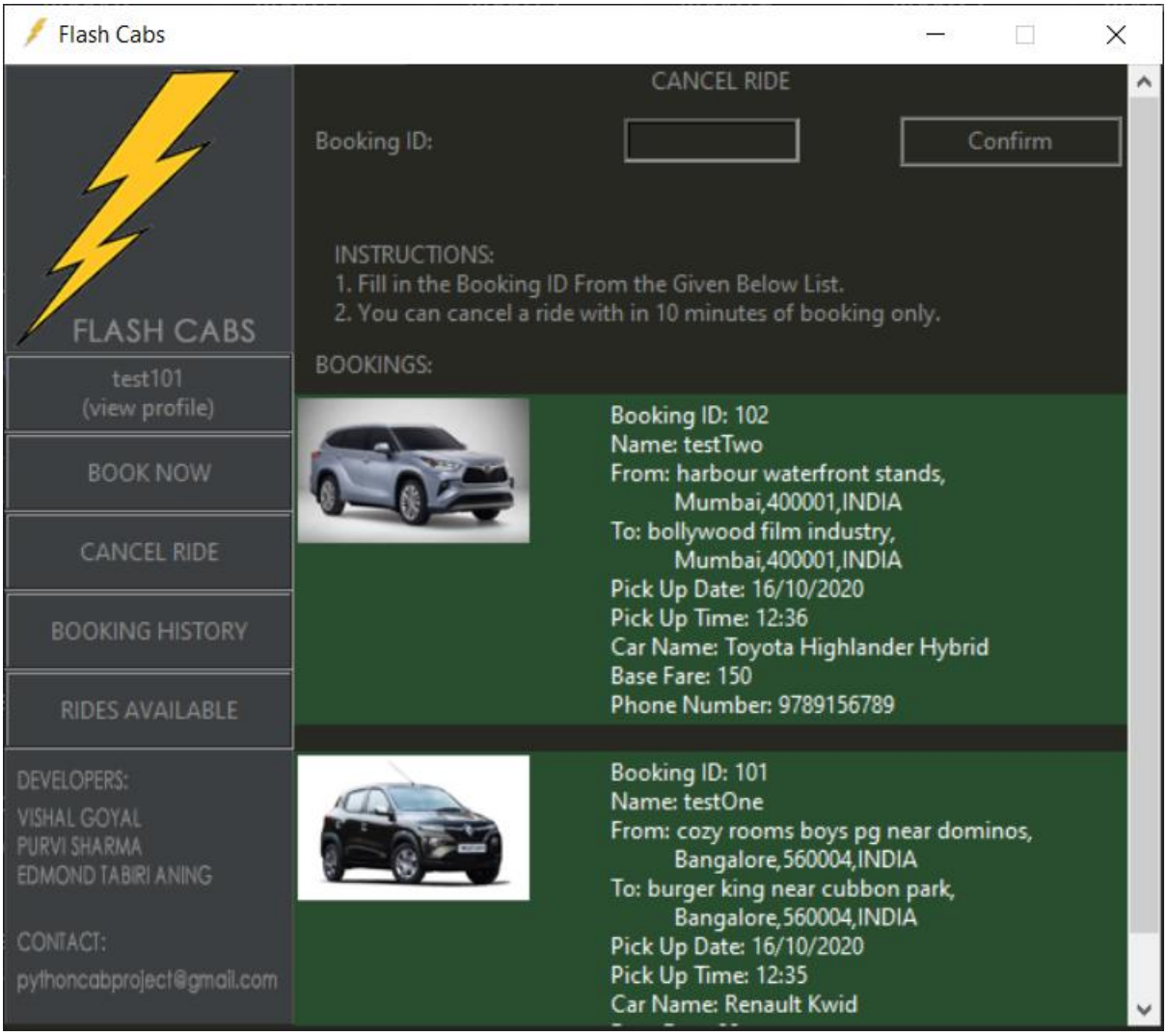
Once the user logged into his/her account user will prompted with various options like book now, cancel ride, booking history, rides available and user profile section. By default, it is book now. User is provided with the form to fill to book a ride (Interface 8). User can select the one of available rides. Various validators (like zip code validation, phone number validation, from and to location validation and many more) are created to validate the information entered by the user. If the credentials were correct, then user will be prompted to booking history screen. Otherwise he/she will be prompted with an error. User can only have 3 Current bookings.



Interface 8

4.6 Cancel Ride Interface:

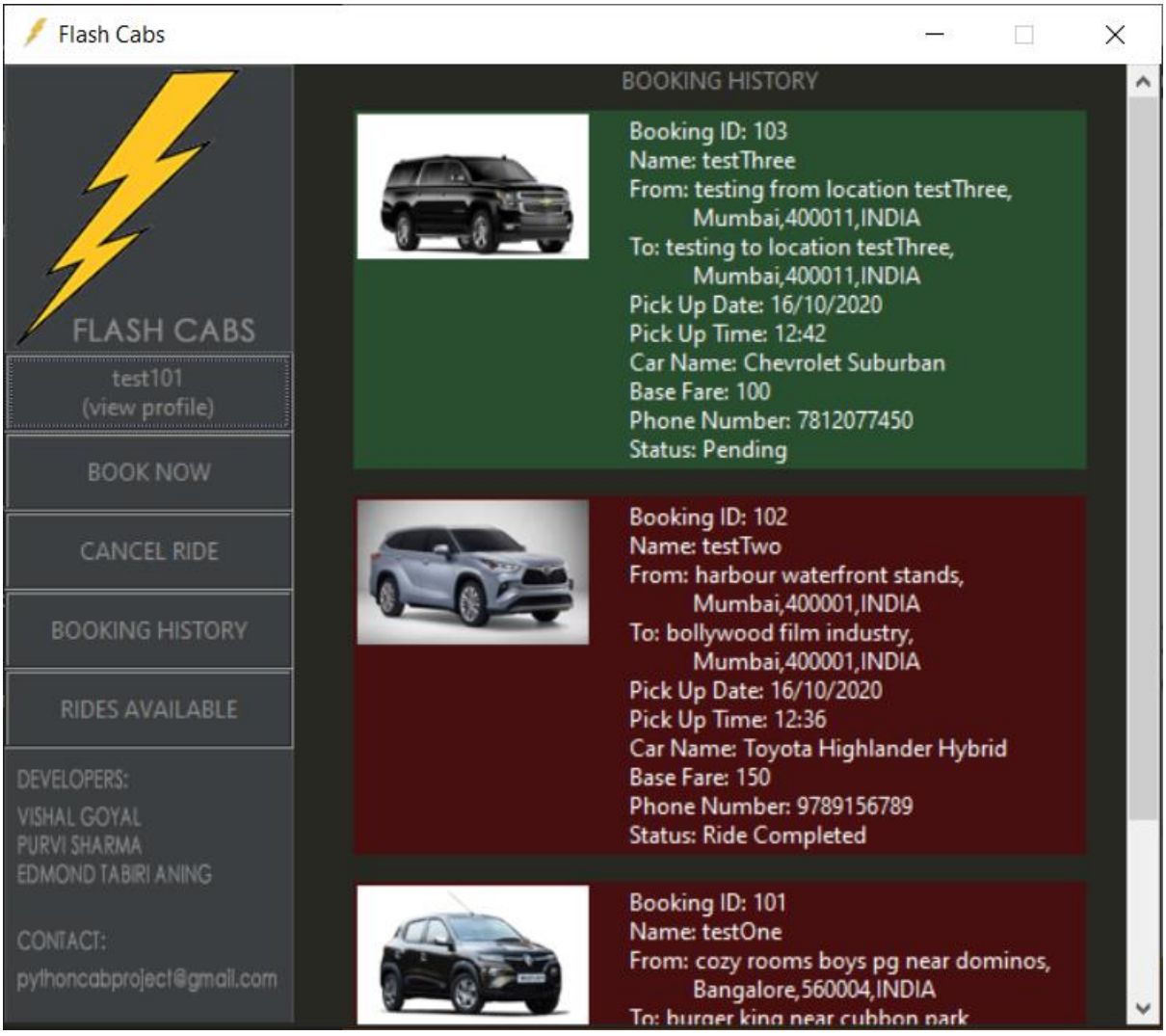
If user wants to cancel the ride, he can navigate to cancel ride interface to do so. User has a ten-minute window after booking a ride to cancel a particular ride. User will be displayed with his/her current bookings list and he/she will be asked to enter the booking ride ID to cancel the ride (Interface 9).



Interface 9

4.7 Booking History Interface:

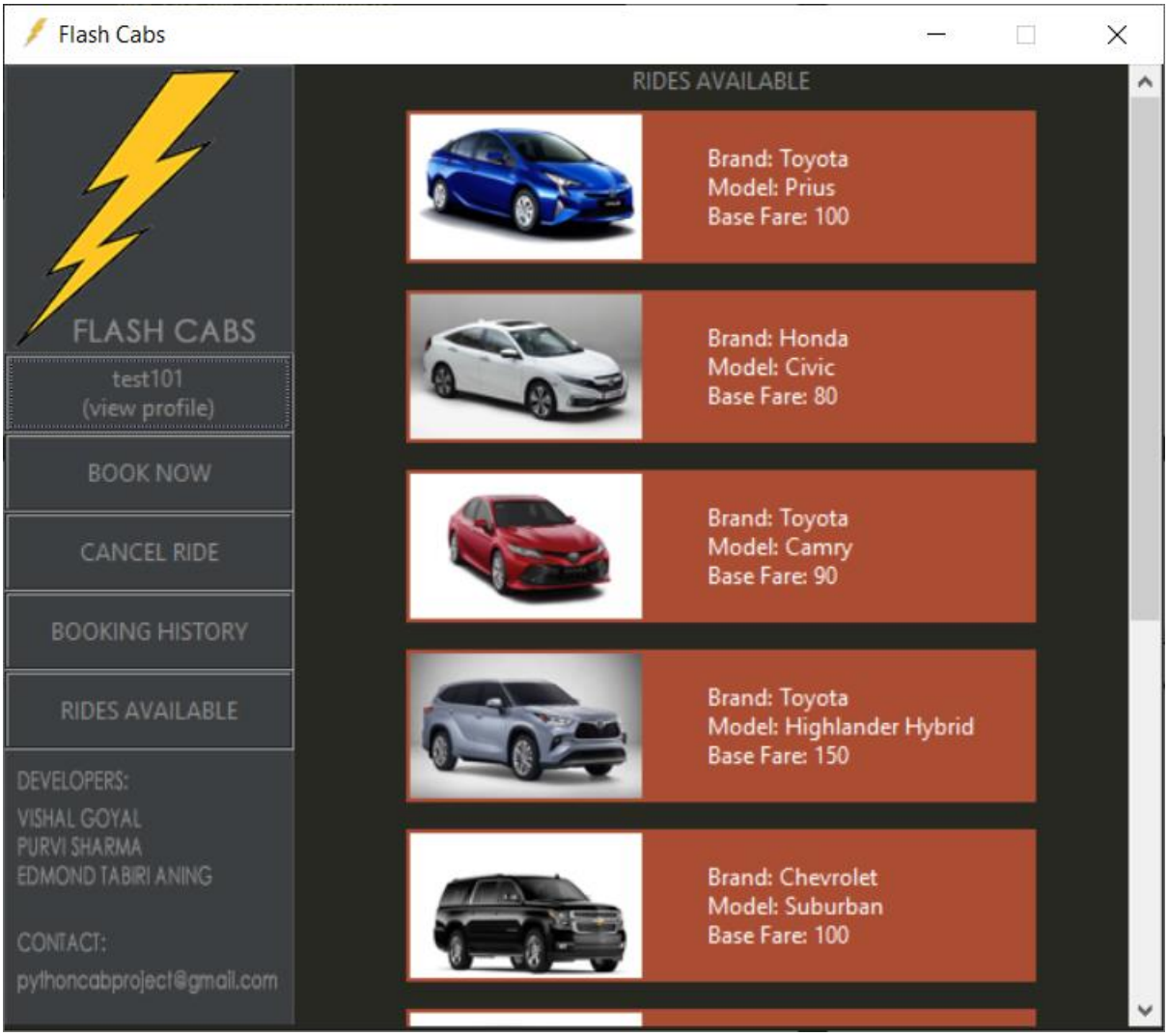
If user wish to look through his/her current as well as past bookings, he/she can easily navigate to booking history interface (Interface 10). Green color represents current booking and red represents past bookings.



Interface 10

4.8 Rides Available Interface:

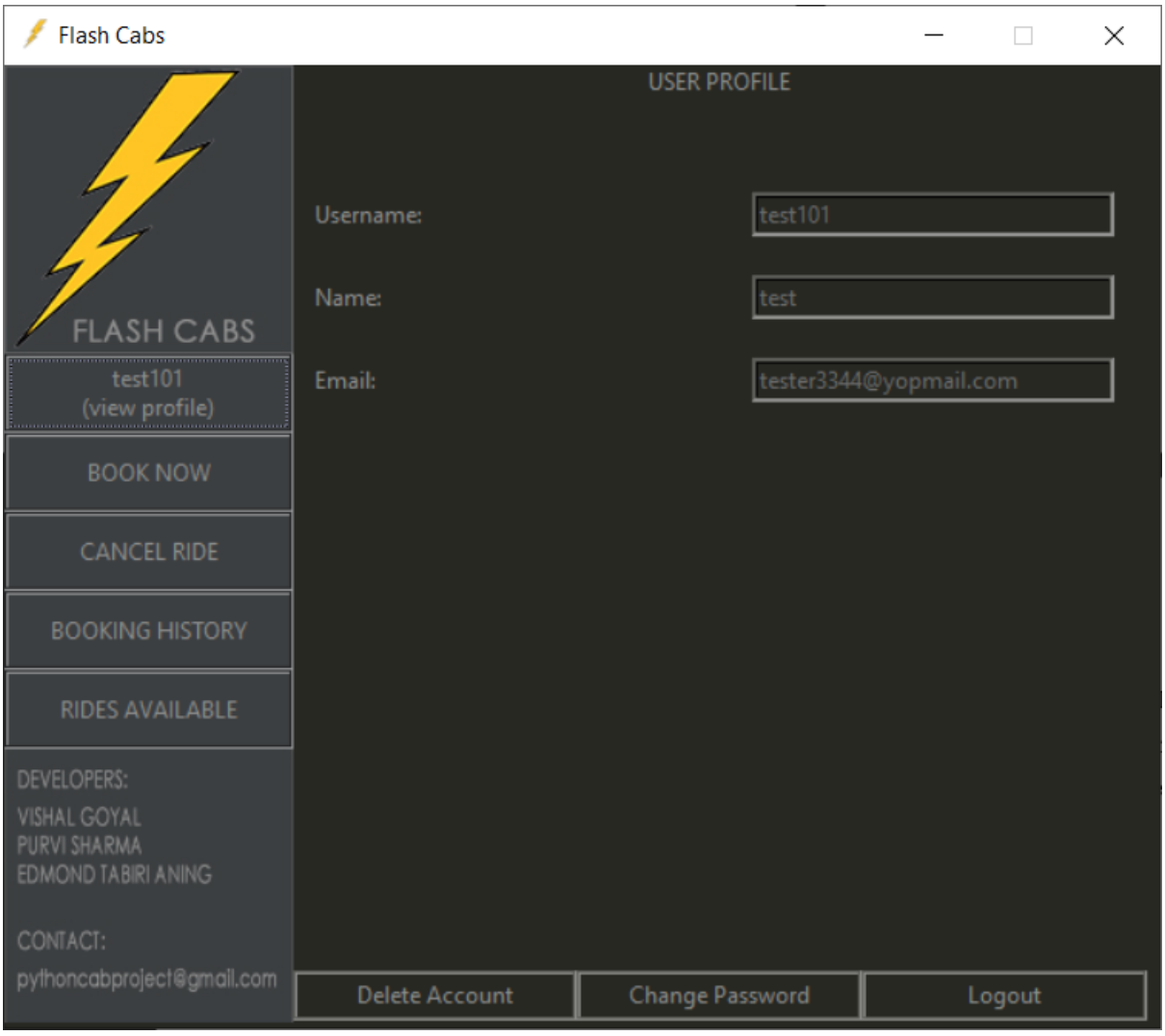
If user wish to see rides available with our system, he/she can simply navigate to rides available option. Here user can also view base fare for different rides as well (Interface 11).



Interface 11

4.9 User Profile Interface:

If user wish to view his/her profile, he/she can navigate to view profile interface (Interface 12). Here user can change his current password, log out of the system, or even delete his/her account. User cannot delete his account with current bookings. If user wished to log out, he/she will be redirected to log in interface.



Interface 12

5. Technologies and Framework to be used

5.1 For Graphical User Interface:

1. **Tkinter:**

   Python offers multiple options for developing the Graphical User Interface (GUI) out of all the GUI methods, Tkinter is the commonly used method. The Tkinter module from python was imported to use in making the graphical user interphase of the project. Tkinter was used in creating the message box as well.

2. **MessageBox Widget:**

   Python Tkinter – MessageBox Widget is used to display the messages boxes in the python applications. This module is used to display a message using several functions.

3. **Pillow:**

   Often known as PIL is a python imaging library. It is a free and open-source additional library for the Python Programming Language that adds support for opening, manipulating, and saving many different images in file formats.

5.2 For Sending Emails:

1. **SMTPLIB:**

   The smtplib module can be used to send mail to any internet machine with an SMTP or ESMTP listener daemon.

5.3 For Checking Internet Connection

1. **Socket:**

   They are used for checking Internet connection. They are used to send messages across a network. They provide a form of IPC (Inter-process communication). An example is the internet which is connected via your ISP.

5.4 For Date and Time Stamps:

1. **Time:**

   It provides various time-related functions. It provides many ways of representing time code such as objects, numbers and strings. It also provides functionality other than representing time like waiting during code execution and measuring the efficiency of a code.

5.5 Basic Mathematics Operations:

1. **Math:**

   This module gives access to the mathematical functions defined by the C standard. It performs the basic mathematical calculations in python.

2. **Random:**

   This module is used for implementing, making or generating random numbers in python.

5.6 Basic API's:

1. **JSON:**

   JavaScript Object Notation provides an API for converting in- Memory Python objects to a serialized representation. It is the most widely used for communicating between the web server and client in an AJAX application.

5.7 For String Functions:

1. **RE:**

   Regular Expression specifies a set of strings that matches it; the functions in this module let you check if a particular string matches a given regular expression.

5.8 Basic Terminologies:

1. **Global Variables:**

   They allow you to modify the variable outside of the current scope. this means that a global variable can be accessed inside or outside of the function.

2. **Lists:**

   They are a collection which is ordered and changeable. They allow duplicate members.

3. **Dictionaries:**

   It is a collection which is unordered, changeable and indexed. Each item of a dictionary has a key or value pair.

6. SWOT Analysis achieved in project

6.1 Strengths of Project:

1. **Punctuality:**

   This is the case where the driver arrives in time. One main core of this project is that it ensures punctuality as the driver arrives in time and takes you to your preferred location.

2. **Ensures customer arrives in time:**

   This project ensures that customer arrives in time and is not late for whatever project they are in a hurry for. Customers feel very comfortable as their rides take them to their destination at ease on time.

3. **Convenient:**

   Instead of chasing down a taxi on a street or calling and waiting half an hour for a car service 'Flash Cabs' app users can hail a car from any location and have it arrived within minutes.

4. **Competitive Pricing:**

   Generally, Flash cabs is less expensive than traditional taxis and car services.

6.2 Weakness of Project:

1. Driver may arrive and wait for a while before customer comes to pick-up location.
2. Customer may wait for a while before driver arrives at pick-up location.
3. Trip cancellations.
4. Safety issues with road, drivers, and other means.

6.3 Opportunities in Flash Cabs:

1. Creation of Job opportunities
2. Safer means to travel
3. Investment opportunities

6.4 Threats of Project:

1. Driver related risks: If someone who knows the driver wants to hurt him, through the app he can find his location and track him and other a ride and use that to hurt him.
2. Customer Related risks: Driver may want to harm customer through drink driving and speeding.
3. Competitive harm: Competitors from other company may try to harm software by cracking and harming the system and creating problems in it.
4. THEFT and Armed Robbery.

GitHub Repository Link:

https://github.com/vishal03121/flash_cabs.git