

**Abstract:**

In major cities of many developed countries, transportation is a matter of concern; moreover, university students want security and ease in daily life activities. During the pandemic, the use of public transportation is risky for the health of students. Using this hypothesis, we arrived at a solution that will provide comfort, security, and safety for university students. UniTaxi is an application that lets students book their journey at any time by using the smartphone with internet access which it connects between the students and taxi drivers using the GPS system; therefore, it enables them to order a taxi with their phone; moreover, it provides them the best service that will make their journey easier and safer; furthermore, the application displays to students nearby taxis to their location. The objective of UniTaxi project is to make the students pay less than regular taxis. So instead of wasting money and time waiting, students can schedule and reserve their desired cab without the hassle of calling, and in affordable prices.

Furthermore, students need to start using this app in order not to get infected by viruses and to keep themselves safe and healthy. To make it special for the university students, the application requires an id number that proves they study in a university, and it also checks whether the id is counterfeited or not. One of the remarkable things about the application is that they can make their own schedule to specify when their classes start and end, so the driver can pick them up in those specified times. There are going to be two vehicles in the application which are the special car and van. The special car is for the students who want to reach university independently, but it costs more than choosing a van. Yet it is cheaper than regular taxis that are used in public while booking a van, as it can carry more than one person which makes it cheaper

than the special car when splitting the bill for each passenger. For the students' safety the car/van gets sanitized on each journey to avoid the virus getting transmitted; in addition to plastic barriers that will be put on each seat to separate the drivers and students from each other. In This application students can pay whether by credit card or cash, but cash will not be available temporary due to the pandemic. the app will have ads on each page and once the person enters, it charges a cost per click. Eventually UniTaxi is an app that will be created for the students to make their life easier, and safer while transporting, and save costs and time.

### **Literature Review:**

**After comparing and contrasting, we have researched the internet for the best topics available that suits our project exactly**

[1] Taxicabs are a notable type of public vehicle for a solitary traveler or a little gathering of travelers notwithstanding taxicabs may get a traveler dependent on the traveler's predetermined spot and time and may drop the traveler off at the traveler's predefined objective.

[2] These sites offer a preferred reservation system and fast payments for travelers, through the implementation of an online car hailing application that effectively addresses asymmetry of knowledge between taxi drivers and travelers. This mode is profoundly delighted in by guests since travelers are not obliged standing on the way to a taxi and thus stopping for lengthy stretches

[3] The drivers are attached to a particular user interface directly with the administrative dashboard where and operation can be traced by the administrators. When the driver asks the company to register to

operate a taxi under that brand name, they should comply with the requirements.

[4] Taxi-hailing applications monetization. You may use the following methods to turn a taxi reservation application into a money earning business:

- Promotions from third parties.

One example is Uber, which makes money out of promotion with renowned brands (Hilton, Pepsi, and Spotify). Whereas Uber earns promotional commissions, advertisers connect with app consumers and users benefit from client awareness promotions, gifts, and treatments.

- Advertising.

You can charge a cost-per-click or cost-per-print commission to run ads on your booking taxi app.

[5] Discover Legitimate Ride hailing app developers and creators to build and construct a solid and perfect product

This is a crucial step in developing the ride hailing app. Critical are reliable and highly able developers of taxi applications. This party should help excellent coordination in the whole handle and convey an item of unbelievable nature. Suggestion: One of the most components affecting the taxi app progress fetched is the pros time rate. Eastern Europe is famed for its fair rate of progression and the proliferation of highly qualified classes. Between the best seaward computer program outsourcing locales, they are Slovakia, Ukraine, Poland. In this situation, the usual taxi app engineers' hourly rate in Ukraine is \$40. One terribly

helpful fact is that the standard would not vary whether you pick an accomplished person seaward group.

[6] In order to convert into a showcase fit item, the consortium was drawn closer to Daffodil program; however, the requirements were to create Taxi reservation program For taxis and riders with two versions one ; moreover ,to develop an admin board so they can control different components such as confirming drivers and overseeing vehicle categories ;furthermore, to develop a strong architecture for the application which it seems to offer assistance to their Scale to comprise additional consortium travel agencies.

[7] Creating a mobile taxi application as an accomplished Taxi Software firm, it is highly advisable the consumer to build their custom apps to ensure the satisfactory application performance. To build a custom application for any OS, the task will be done with better speed, protection, and access to certain key integrated features such as maps and geo-locations of the smartphone. start the improvement cycle by building up a base practical item, which incorporates the program, with minimal focus and flexibility, for both fascinated and adaptable as well as for the dashboard. The most famous use of Ola or Uber often prevented and sprayed or took a toll part. However, from the outright to begin with starting, it made a difference in partner drivers and travelers and allowed the application to honestly build installments.

[7-1] The applicable area information trade is the most significant aspect regarding on-request transportation applications. That is the reason we have added the area following component, implying that the GPS capacity in the cell phone will recognize the get area and keep the customer educated progressively when the vehicle will show up.

[10] The core aspect of the whole project from the outset was real-time client-server connectivity. For all sub-applications: client, driver, and

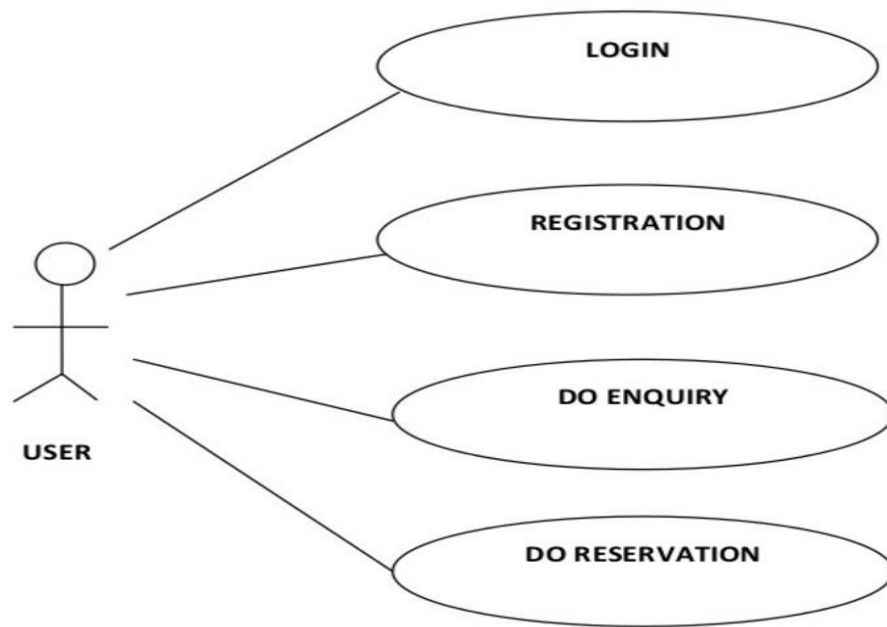
dispatcher, it was a struggle to have identical riding states. Consequently, all correspondence between applications was configured to be transmitted through the backend to store the individual driving states. Requests may only be submitted the backend can be warned by HTTP and only the backend via two networks will warn applications. APNS and PubNub (for opening applications) (when it is closed).

[13] Faster and Proficient Cab Enlisting - In some cases it gets as well troublesome to discover a cab fare when an individual needs it the foremost. Irregularity in accessibility of manually hired cabs could be a major issue individual confront at the time of criticalness. On the other hand, drivers moreover discover it difficult to discover clients when they are sitting still. The client needed the app to ease the inconveniences of both clients and drivers by giving an intelligently and easy-to-use medium for booking taxis.

[14] It was an extreme challenge to build the application and to add all the client highlights. Our developers had to ensure a user-friendly interface for the app could be used by both users and drivers., whereas giving highlights valuable for both. The app must also best provide summary integration course choices, programmed admission calculation, and installment door integration. At long last, for both customers and the cab drivers to discover each other at some point, the GPS incorporation into the app had to be rigorous enough.

[16] Advertising Google Outline coordinates interface, our designers empowered a GPS (Worldwide Situating Area) that can permit individuals to put through with the closest driver and pinpoint their begin and end location. This will consequently dispense with the got to physically include area subtle elements, particularly for individuals who are unused within the city.

### **Materials and Methods Used in the Project:**



[8]

Figure 1. **four concept aspects of the application**

- **In figure 1,** it shows that there are four things that the user should do. To login the user must do a registration to make an account, however; Before booking a taxi, user must enter their information like name, address, mobile number, and student id number. Once the user becomes valid to login, they can book any cab they want. All the data will be stored in the data base including the names and the passwords and it will be used for further validations and authentications.

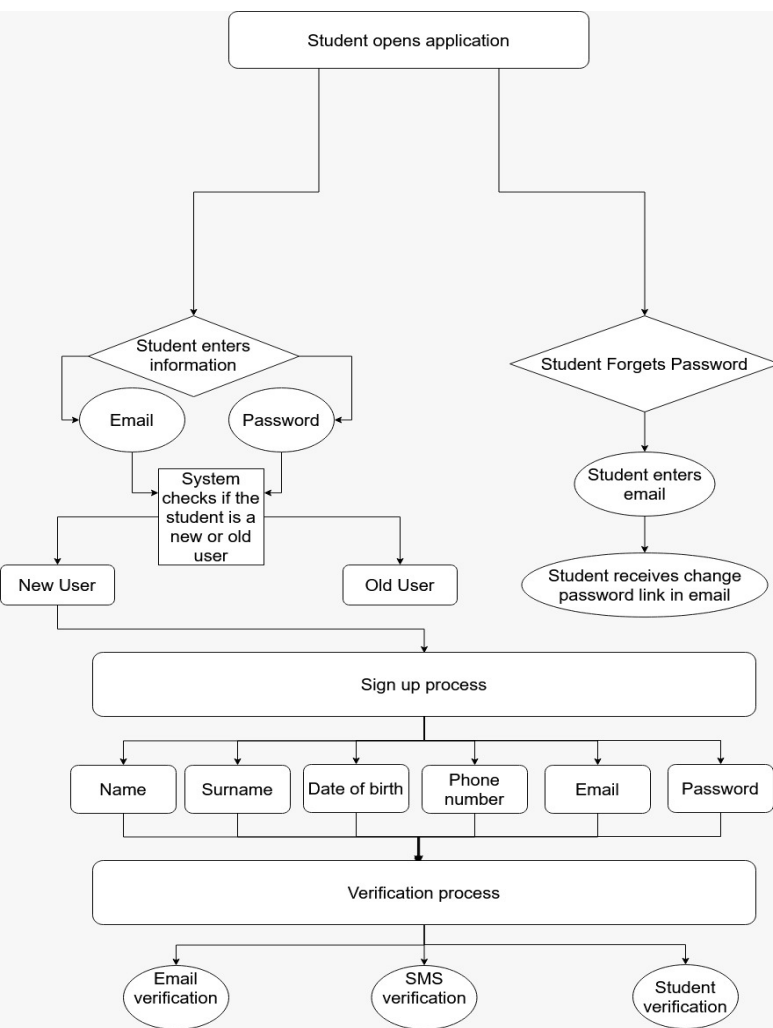


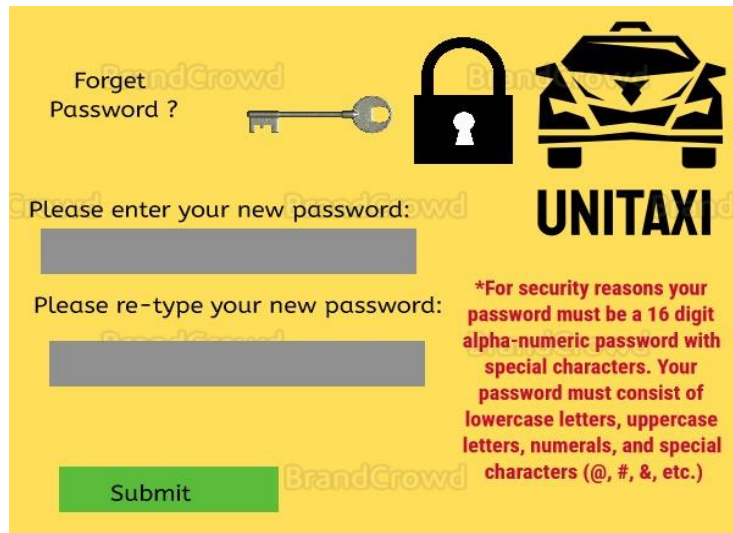
Figure 2. THE OPERATION OF THE APPLICATION




Figure 3.LOGIN PAGE

- **In figure 2.** there is a chart that explains the concept of the login and sign-up process in details and how the application works.
- **in figure 3.** After the university student finishes installing and launching the app on their smartphone, they are required to enter their information by filling their email and password on the empty box which is specified. However, the system checks if the student is a new or old user.

Figure 4. FORGET PASSWORD PAGE

In figure 4 in case the student is an old user, and forgets his/her password, they can reset it simply by following the instructions on this page which is by entering their email that was used during registration.



Forget Password ?   

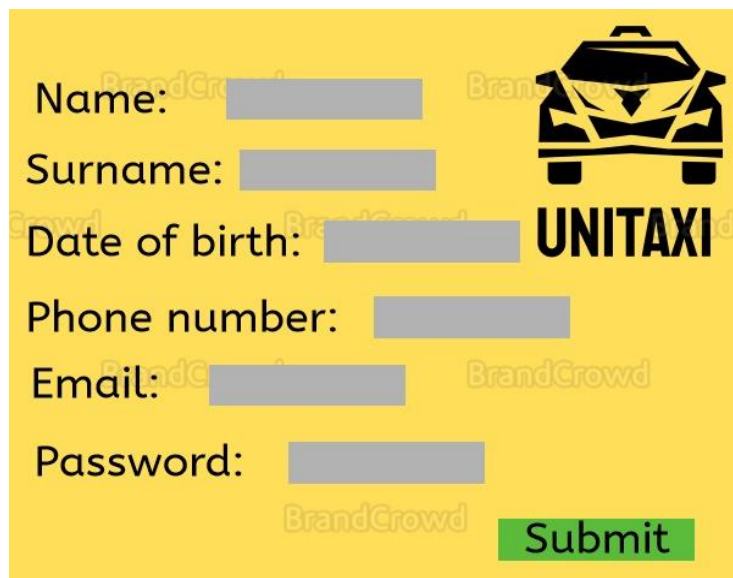
Please enter your new password:


Please re-type your new password:

**\*For security reasons your password must be a 16 digit alpha-numeric password with special characters. Your password must consist of lowercase letters, uppercase letters, numerals, and special characters (@, #, &, etc.)**

Figure 4.1. **NEW PASSWORD PAGE**

- In figure 4.1 Once the student receives an email that contains the reset link, they will be directed to the changing password page which requires them to enter a new password twice. for security reasons the new password must be a 16-digit alpha-numeric password that consists of special characters, number, upper, and lowercase letters.





Name:

Surname:

Date of birth:


Phone number:


Email:

Password:

Figure 5. **SIGN UP PAGE**

- in case the student is a new user he/she will be directed to the sign-up page, in the sign-up page the student is required to input his/her information which are name, surname, date of birth, phone number, email, and password as shown in figure 5.



**Verification:**   

Step 1:  
Email Verification  
Kindly enter the code sent to your email :

Step 2:  
SMS Verification  
Kindly enter the code sent to your phone :

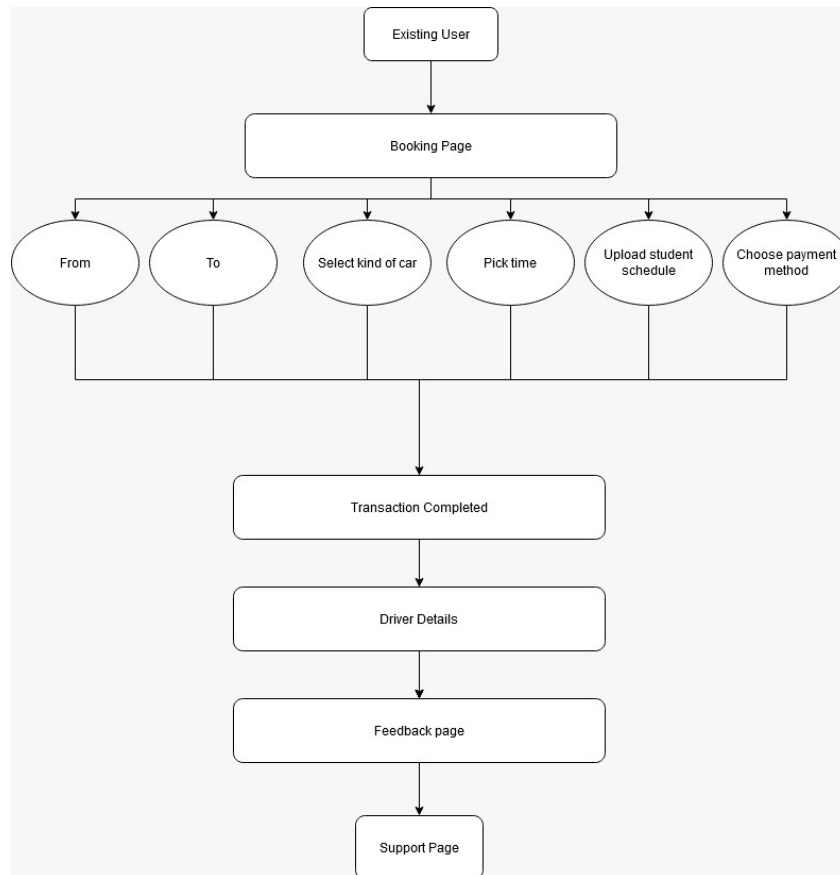
Step 3:  
Student Verification  
Kindly attach your student ID: (Front & Back)

Figure 6. **VERIFICATION PAGE**



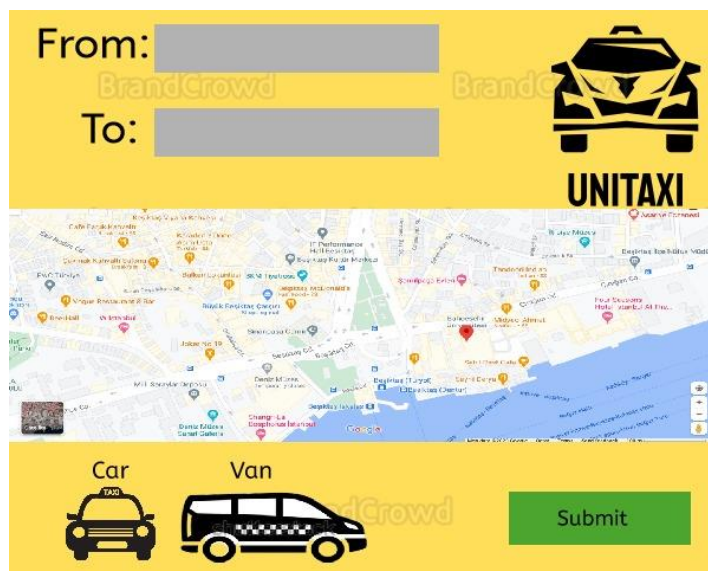
As stated in figure 6, the verification process starts after accomplishing the sign up process; however, The user is obligated to complete all 3 types of verification in order to continue using the app, the first type is email verification, an OTP (one-time passcode) will be sent to the student email and he/she is required to enter it in the specified place, the second type is SMS verification, an OTP will be sent as an SMS to the student phone number and he/she is required to enter it in the specified place. The third and the last type is student verification where the student is required to upload his/her university ID from the front and back. Furthermore, when the process becomes successfully accomplished, they will be navigated to the booking page. While the old user in the other hand, it does not become essential to do the same process since

the user has been already signed up; therefore, they are able to proceed to the booking page.



**Figure 7. THE OPERATION OF THE APPLICATION IN THE BOOKING PROCESS**

- As shown in figure 7, it shows the concept of the operation of the application in the booking process. Once the student finishes signing up or signing in what they were required, they are navigated to the booking page.



**Figure 8. BOOKING PAGE**

- As illustrated in figure 8, it shows the booking process where the GPS system automatically detects the current location of the user or the user can enter it manually, then needs to put the address or the name of the university they want to go; however, after they finish choosing the university, they need to select what type of cab they prefer to use either a car or a van. The difference between the car and van that the car costs more than the van but cheaper than the public taxi; however, the van requires to have more than one student.

Figure 9. **PAYMENT PAGE**

- As portrayed In figure 9, After the client finishes choosing their desired cab, they have to set the time either now or later, nevertheless, if the account is a frequent user in the application, they can attach their schedule either a pic or file in the app which it automatically does the same process daily so that the driver comes without them reuploading the same

schedule all over again and they are able to deactivate this feature at any time , furthermore, the app examines the students' course schedule and the time when their class ends so the app automatically sends a notification to the driver that the student's class has been already dismissed and that they are ready to be picked up by the driver, and then they head to the payment method either with cash or credit, but the cash payments are declined until further

notice due to the pandemic that is previously represented in figure 9.

Figure 10. **SCHEDULE PAGE**

- Additionally, as represented in figure 10, if the user does not want to upload his/her schedule, there is an alternative option for making their schedule which is choosing the options that are available on the page such as choosing the days they

want and type their desired time; moreover, they can disable / enable the process anytime they



want as shown in figure, but nonetheless they must note that unitaxi working hours are from 6 am till 12 midnight.

Figure 11. **BOOKING COMPLETED PAGE**

- After the user finishes submitting, he/she will be directed to a page that notifies him/her that the booking has been made successfully

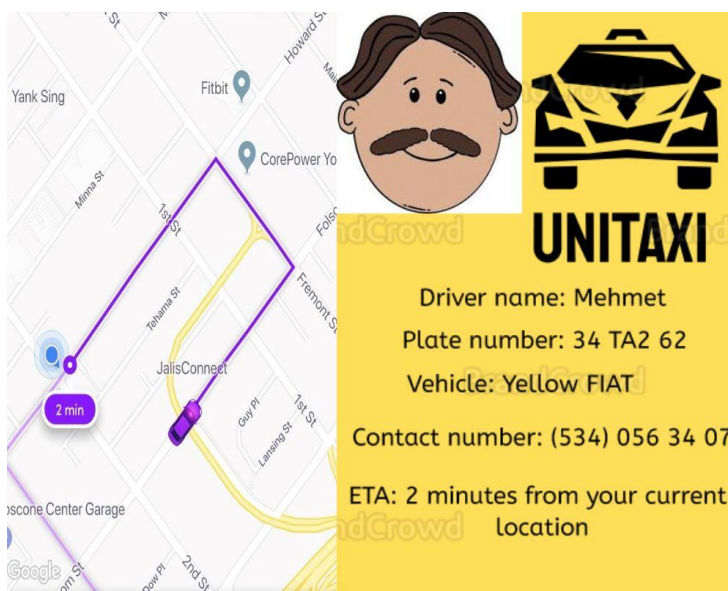
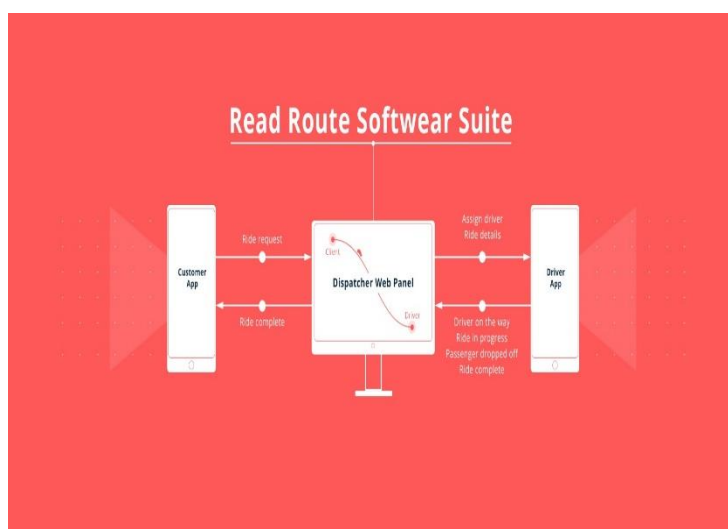


Figure 12. **TRACKING PAGE**

- After the booking was made, the user will be directed to the tracking page that will show them where the driver currently is with their name, phone number, plate number, type, and color of vehicle and the expected time of arrival as represented in figure 12.



[10]

Figure 13. **READ ROUTE SOFTWARE SUITE**

- In figure 13, there are details that explains the read route software suit between

the customer's app and the driver's app. When the customer (student) orders the cab, the admin will help to assign the details to the driver's app through the dispatcher web panel and after that the admin will help to assign messages such as driver on the way, ride in progress, passenger dropped off and ride complete to customer's app through the dispatcher web panel; moreover, as shown in the previous figure that was mentioned.

Figure 14. **FEEDBACK PAGE**



The feedback page for UNITAXI features a yellow background. At the top, there are three icons: a hand holding a tablet with a star rating, a clipboard with a checklist, and a black taxi car. Below these icons, the text "Please rate your experience:" is followed by five gray stars. Under the stars is a "Tip:" label and a gray input field. At the bottom, there is a "Comments:" label and a larger gray input field. The UNITAXI logo, consisting of a taxi icon and the word "UNITAXI", is positioned on the right side of the page.

- In figure 14, once the user arrives to their destination and after their trip/ride ends, they will be navigated to the rating page; it is optional to rate the driver and their trip experience along with comments if they have any which it helps to enhance and provide better service in their next trips or rides with unitaxi, but nevertheless its optional to pay some tips to the driver to show some support to them.

Figure 15. **SUPPORT PAGE**



The support page for UNITAXI has a yellow background. At the top, it says "Need help ?" and "Dont hesitate to contact us !". Below this, the contact information is listed: "email: support@unitaxi.com" and "Phone: 800-1234563 (UNITAXI)". On the right side, there is a black taxi icon and the word "UNITAXI". At the bottom, there are three social media icons: Facebook, Twitter, and Instagram. Below each icon is the handle "@Unitaxi".

- Eventually, figure 15 represents the support page if they need any help by calling our toll-free number or emailing the support team or contacting us by any social media platform that appears on the page.

## **Discussion and Results:**

Unitaxi has several distinct advantages for university students. Instead of chasing down a taxi on a street or calling and waiting for a long time for a car or waiting in a station or bus stop, Unitaxi app users can order a car from any location and have it arrived within minutes. The student id card is linked to the user's account there will be a discount for them automatically, this is done by photographing the student's university id card from both sides only for the first time they sign up to the app.

Generally, Unitaxi is less expensive than traditional taxis and car services. Student safety is our top priority, as the car / van is equipped with sterilizers to avoid any virus or infectious disease and plastic barriers are placed that separates students and drivers from each other, and cash payments are rejected temporary. The students can pay with a credit/debit card that is attached to their account. It also provides students with an excellent feature, students can upload their classes schedule in the app so that a car comes automatically without them doing the same process every day (booking process), and they can stop this feature anytime, the app checks the students schedule and their class ending times so the app automatically sends a notification to the driver that the student's class has ended, and they are ready to be picked up by the taxi. In addition to that, students can set whatever language they want according to what they understand. Unitaxi app offers a range of vehicle options to choose from. You can find car ranging from standard passenger vehicles for one student (car) or four students (van). You can pick a vehicle based on your needs and budget. The van has a discount more than the car if the ride is shared between 4 students. As we see a lot of students are late for their exams or lessons because they are waiting at the bus stops or metro, so hiring a Unitaxi service saves time for students and their energy. since they do not have to go around looking for transportation options. A Unitaxi will arrive at your doorstep in a few minutes after they order using the app.



If they use public transport, they will have to walk to a specific location and wait for the bus to arrive. Unitaxi can be considered as the most affordable and economic form of transportation that offers ease and comfort. In conclusion, what distinguishes Unitaxi from other transportation is that it is only intended for students and it also provides discounts for them, moreover the students can make their own schedules. Eventually this app is going to be only for students who live in Turkey. Unitaxi is not available 24 hours; it's only between 6 morning till midnight. Unitaxi goal is to spread around the world in the future, and this is done by the students who will evaluate the app in the app store which will encourage Unitaxi to expand their services worldwide. In addition, maybe there will be more options in Unitaxi application such as: emergency services for students.

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