



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF COMPUTING
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SYSTEM ANALYSIS AND DESIGN

PROJECT PHASE 3

UrbanRide

(ADVANCED PUBLIC TRANSIT SYSTEM)

CHEW ZHUO HENG	A23CS0064
GOH CHANG ZHE	A23CS0225
MUHAMMAD HAIKAL BIN JAPRI	A23CS0131

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1.0 Overview Of The Project

The administration of the vehicles in and around UTM falls under the purview of UTM Fleet, a vital department. They frequently gave pupils transportation to and from school, the library, and athletic facilities. Not only that, but they also allow outsiders to rent it out in an effort to market UTM and their brand. We'll find out about their unit management practices and any comments made about them. This project undoubtedly ascertains the necessary facts that can support the functioning system.

We are presently interviewing Mr. Afiq, the Legal Officer of UTM Fleet, to get precise information about the current system. He undoubtedly knows a great deal about his team and unit, thus the information he gave us is trustworthy. According to Mr. Afiq's claims, we now have a solid command over 5W1H after receiving the essential data. Next, we list the difficulties that UTM students have sent us and describe our experience resolving them. As such, it is our responsibility as analysts to provide a solution.

The process of the system we wish to design may then be visualised and transferred to a high-level Data Flow Diagram (DFD). Nonetheless, we need to figure out the input, process, and output before we can put together the data flow diagram. By performing this action, the Data Flow Diagram will become more organised, transparent, and intelligible to those outside the project. After the context diagram is built, data flows, data storage, and procedures are represented using data flow diagrams, which include parent and child diagrams. A level 0 diagram is a rupture of a context diagram, sometimes referred to as the parent diagram.

Each process has an integer allocated to it. The primary data store and all external entities are shown in the parent diagram. To create a child diagram, every process in the parent diagram will be broken apart. We aim to provide the details and comprehensive representation of system workflow in order to give all of the users a clear understanding. The detailed approach will surely be well documented, making it easier for stakeholders to understand and for developers to implement it.

Through these steps, we will have a well-organised and comprehensible set of data flow diagrams that accurately represent the current system's workings and the proposed enhancements. This structured approach will facilitate effective communication among all parties involved and ensure that the system improvements are successfully implemented.

2.0 PROBLEM STATEMENT

1. Accuracy of arrival time of the bus.

While UTM Fleet publishes a table detailing bus movements and the period of time it takes for buses to go between locations inside UTM Smart, this information is insufficient for staff, students, and other users to plan their travel schedules. This is because of unanticipated occurrences that occur along the bus route. For example, if there is an accident on the bus route, the movement of the bus will undoubtedly be delayed, and the students are unaware of this. Second, we cannot guarantee that the traffic will remain in the same pattern throughout the day. There may be events near the UTM, which might cause traffic problems and delay the bus's arrival to its destination.

2. Availability seats of the bus.

Passengers often find themselves in a situation where they lack adequate information about seat availability on the bus they intend to board. This lack of clarity can lead to confusion and inconvenience as they are left unaware of how many seats are still open for their desired journey. Consequently, if all seats are occupied, it significantly impacts the passengers' travel experience, causing delays and forcing them to wait for the next available bus, which could mean a wait of approximately an hour. For students, this waiting time translates into precious minutes lost that could have been utilised more productively for academic pursuits, meals, or completing assignments. Hence, the inefficiency in communication regarding seat availability not only disrupts travel plans but also represents a missed opportunity for passengers, especially students, to allocate their time effectively towards more pressing priorities.

3. Uncertainty factor

When unforeseen events happen without warning and users are left in the dark regarding the state and progress of their planned bus trip, they frequently find themselves in a frustrated scenario. I can speak from personal experience when I say that there have been times when I was waiting at the bus stop without realising what was going on because of odd occurrences like high traffic or flat tires on buses. This lack of knowledge not only makes it difficult for me to plan well, but it also throws off my time management, leading to needless delays and possible annoyance. I have little option but to put up with the uncertainty and its effects on our schedules if there is no real-time information or notifications regarding these unanticipated conditions.

4. Line changes

As we know, UTM Fleet has meticulously curated the table of contents of their buses within the UTM smart system. This system not only showcases the routes each bus takes for the daily commute of the students but also ensures that the buses adhere strictly to their assigned zones, prioritising efficiency over individual preferences. However, if a situation arises where a bus requires maintenance, passengers face the inconvenience of not receiving timely notifications about the issue. Consequently, this lack of communication leads to wasted time as students unknowingly await buses that are out of service for a certain period. The importance of transparent communication between the fleet management and passengers cannot be overstated, as it directly impacts the overall transportation experience for the UTM community. Effective notification systems are pivotal in minimising disruptions and enhancing the reliability of the bus service, ultimately contributing to a smoother and more convenient journey for all those reliant on the UTM buses for their daily commute.

5. Bus do not stop for people at bus stop

Users occasionally find themselves in scenarios where they have to wait a long time for a bus, just to have their dreams shattered when the bus they are anxiously waiting for doesn't arrive. Feeling discouraged, they attempt to get the driver's attention by frantically waving, but the bus passes by without stopping, leaving them disappointed. Users frequently begin to doubt the dependability of the present bus service as a result of this distressing experience. The same thing usually happens when the bus driver is unsure of whether the people waiting at the stop are indeed waiting for that particular bus or for another one entirely. As a result, both parties' misunderstandings and poor communication add to the frustrating cycle of missing buses.

6. Rating and Feedback

The overall level of satisfaction among consumers is greatly impacted by the inconvenience they encounter while offering feedback and ratings for the existing system. The fact that feedback is only available during office hours and that there is no help available outside of these hours to address problems is a source of frustration for many customers. Users find it difficult to express their ideas and comments due to this communication channel constraint, which limits the system's ability to be improved based on user feedback. To improve the system's functioning and make sure it meets user expectations, it is essential to interact with users and get their input. As a result, creating easier-to-access feedback channels after hours may significantly enhance customer satisfaction and user experience.

7. Safety factors

Because there isn't a dependable way to notify people in the event of an unexpected collision, the existing system frequently puts users and drivers in risk and threatens their safety. Many people who use public transportation are greatly discouraged from choosing public buses as their form of transportation due to this safety problem. In an emergency, not only does the lack of an efficient communication system put passengers at risk, but it also makes them feel uncomfortable and uneasy. Those who use the current system are plagued by the dread that they won't be able to get help when they need it since there isn't a suitable way to indicate distress.

3.0 PROPOSED SOLUTION

1. Live Updating Location

Our live updating location function was thoughtfully crafted to tackle the widespread issue of imprecise arrival timings. Our smartphone application gives customers a thorough picture of the present state of the roads and the projected time of arrival for buses by utilising real-time traffic data. With the help of this creative approach, travellers may now proactively plan their trips, giving them the ability to decide what to do and reducing the likelihood of delays. This kind of proactive approach not only expedites the travel process but also helps our consumers make better use of their time. Our technology is interactive, which means that passengers have more control and assurance on their journeys, which improves their experience in general.

2. Availability seat of the bus

By incorporating this innovative function into our system, we can assure users of receiving timely updates regarding the availability of seats on their chosen bus routes. This feature serves as a crucial preventive measure to shield passengers from potential discomfort caused by overcrowded buses, minimising the inconvenience of having to endure long journeys standing without a seat. Our primary motivation behind introducing this functionality is to cater to the needs of individuals requiring special assistance such as the elderly, pregnant women, and passengers with disabilities. Through this enhancement, these individuals can benefit significantly by being informed about the availability of priority seating arrangements or locating seats in close proximity to essential features such as ramps or designated spaces for accessibility.

3. Announcement and notification about the line change

This notification is created to instantly pop up on the screen and notify users of any changes made to the transit tracks, along with a detailed explanation of the reasons for such changes. This function makes sure that those who are staying close to UTM are always aware of the latest happenings. Our users may adjust their travel arrangements by obtaining timely updates about changes to the lines. This preventive action gives them the ability to look into other routes, account for additional travel time, or modify their plans as needed. Essentially, the app functions as a trustworthy information source, helping users make educated decisions based on the real-time data it provides.

4. Booking system for users

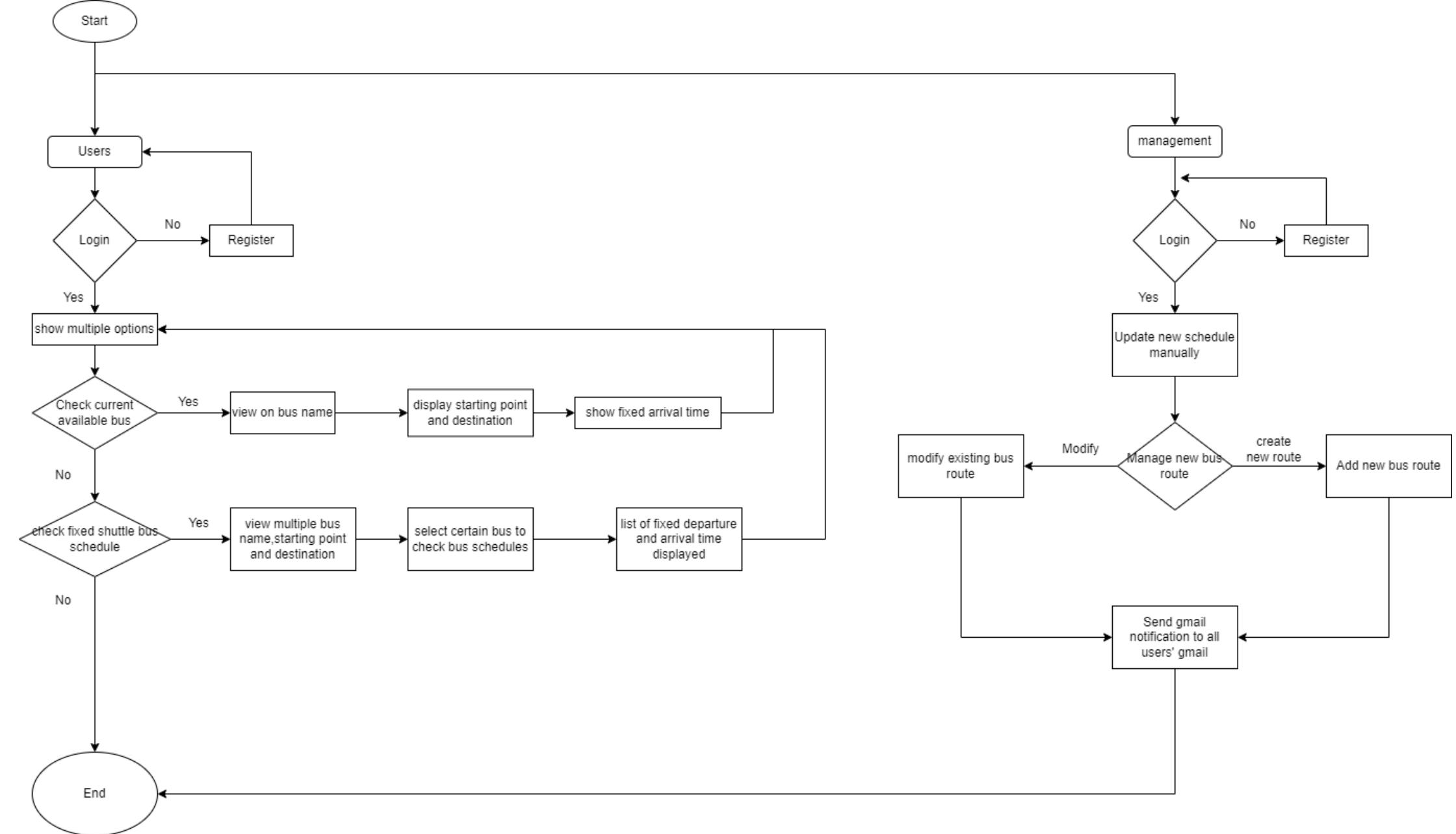
We created an easy-to-use booking system with our users in mind, so they can enjoy an outstanding experience starting from the time they get to the bus stop. When customers arrive at the bus stop, they have access to a detailed display that includes a list of all the buses that are planned to stop there in the near future, along with an estimate of their arrival time in real time. Users may easily book a seat for themselves on a desired bus by clicking on the 'Select this bus' icon, which is similar to how easy and familiar it is to buy a ticket in a movie theatre. This cutting-edge system not only makes boarding easier, but it also makes sure that every bus that is supposed to stop at the station really does, which improves operational effectiveness and gives passengers peace of mind.

5. Rating and Feedback section

User feedback is extremely important to us since it gives us important insights that we utilise to improve our services over time. Through a detailed analysis of the comments, we are able to identify the precise areas that will need to be improved in future experiences. These criteria mainly include the entire travel experience, comfort, accessibility, driver conduct, cleanliness, and timeliness. This input also has a dual benefit as it helps pinpoint areas for improvement and makes a significant contribution to the continuous evaluation and development of our system and service quality. By means of this thorough assessment procedure, we are able to precisely identify the essential elements that require improvement, opening the door for a steady improvement trajectory across our services.

6. Emergency button

An essential safety component that greatly improves user well-being are emergency buttons. These buttons are important because they provide a direct channel of communication to our company's management and emergency services, such as the police and ambulance, in the event of an emergency that may happen during a bus ride. Furthermore, we have meticulously designed our buses so that all passengers, including those with impairments or limited mobility, may readily utilise these buttons. This all-inclusive strategy ensures that everyone on board has the resources necessary to get help quickly in an emergency. These preventative safety measures highlight our steadfast dedication to creating a safe environment for our consumers.



5.0 AS-IS System Workflow

AS-IS Context Diagram

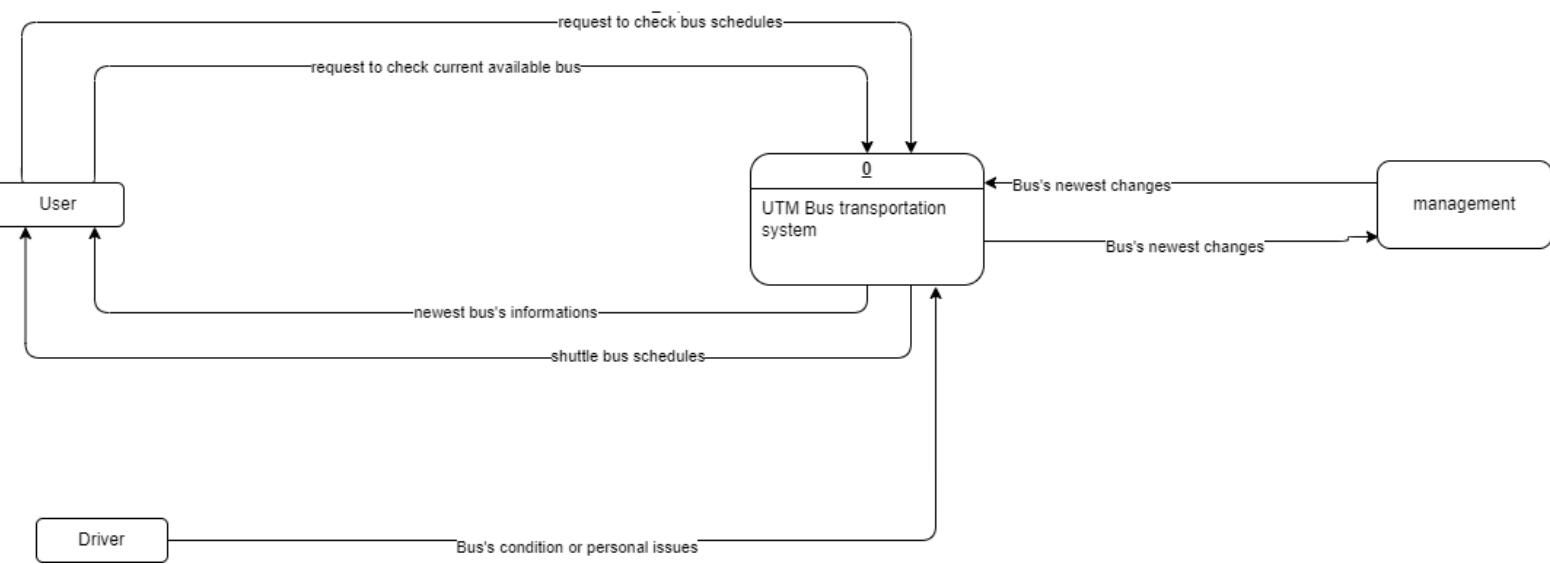
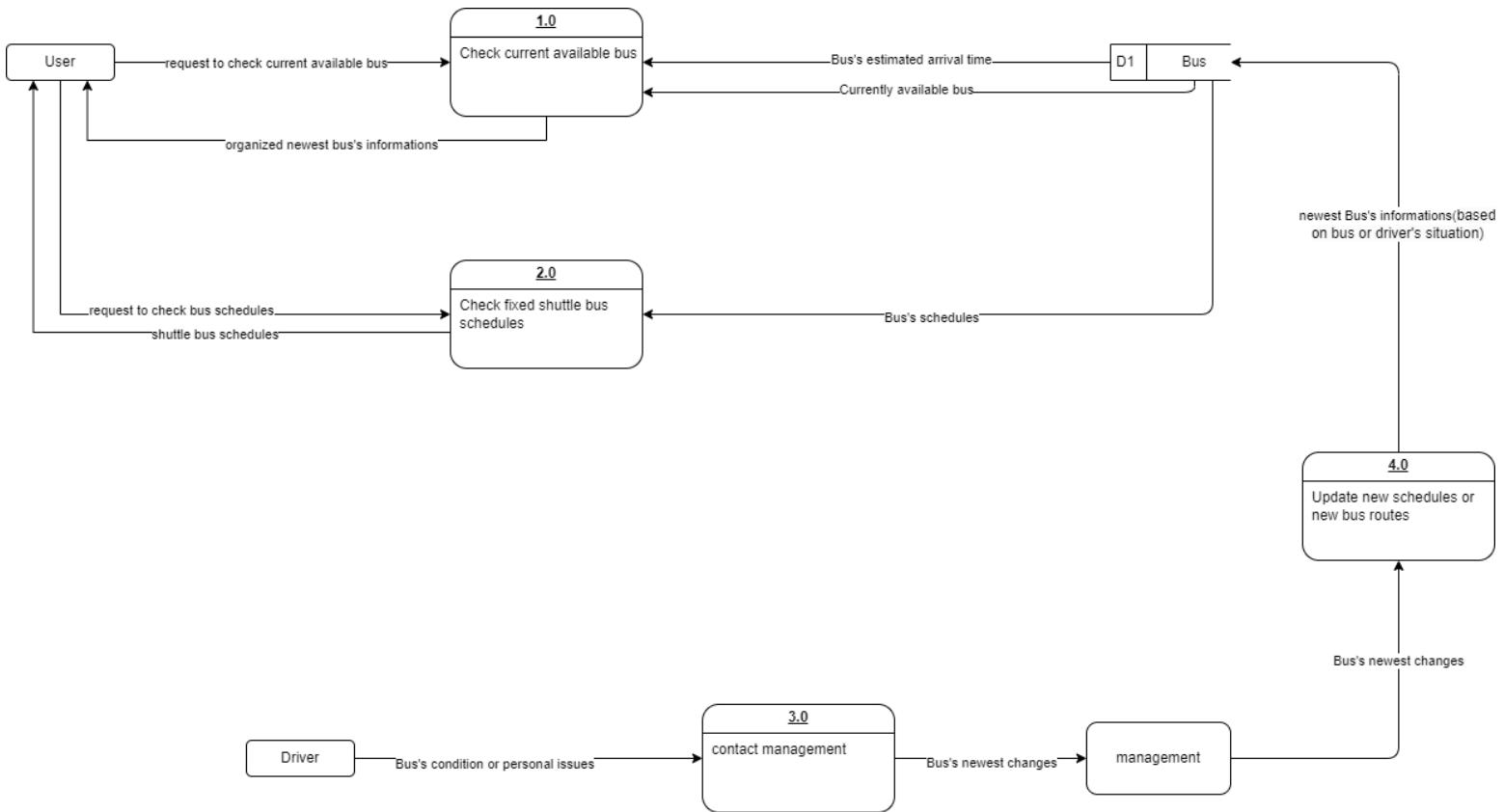
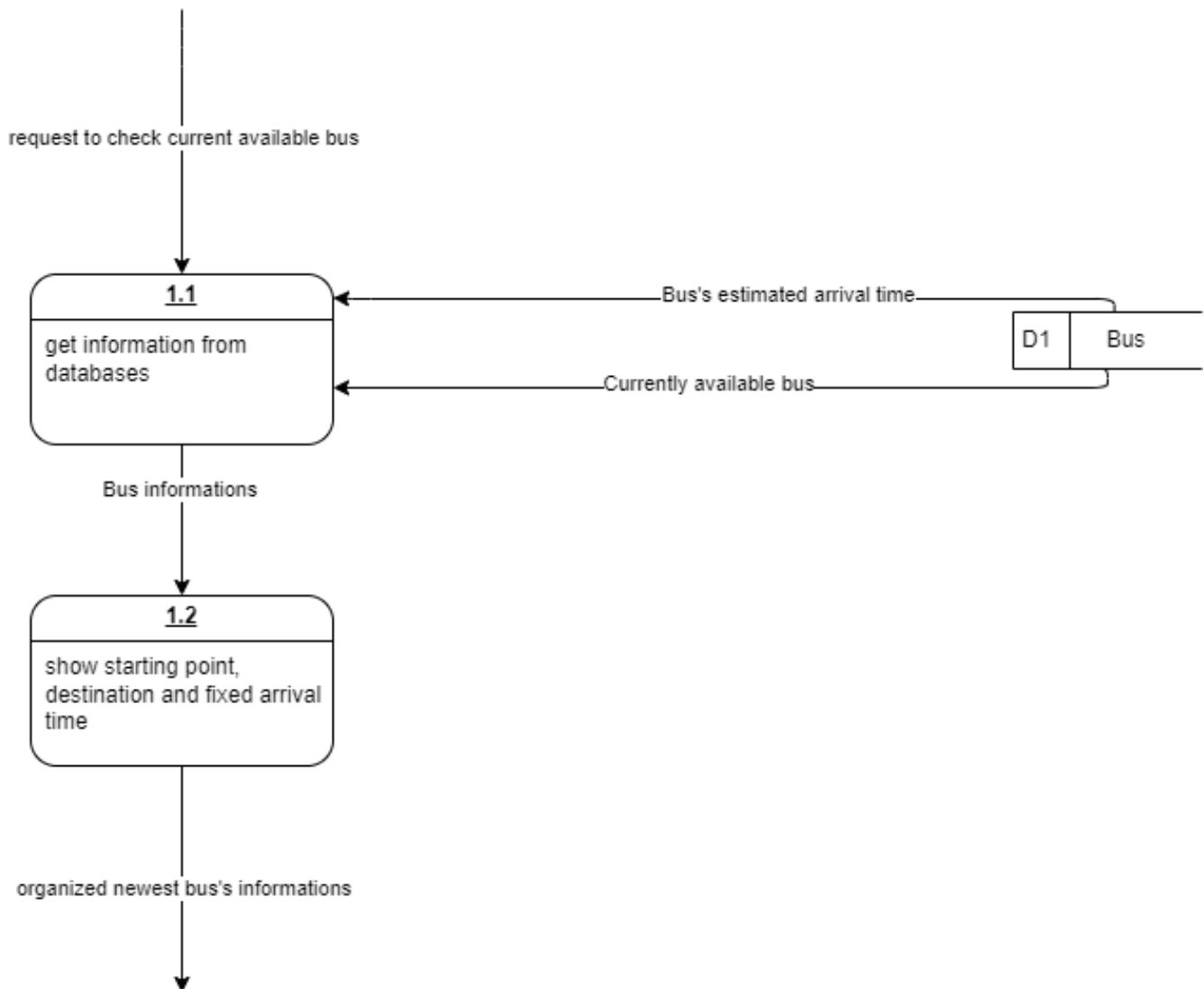


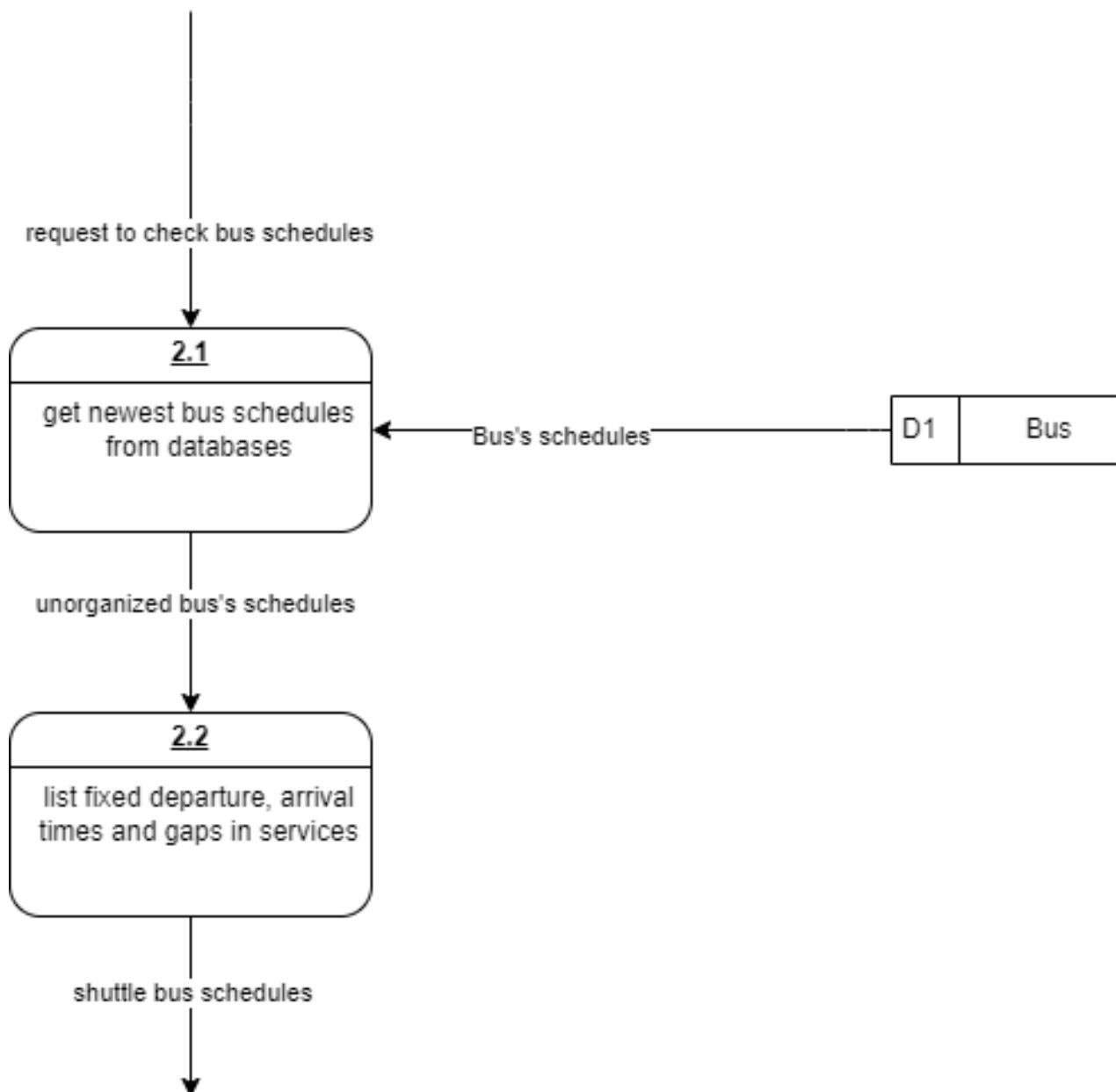
Diagram 0



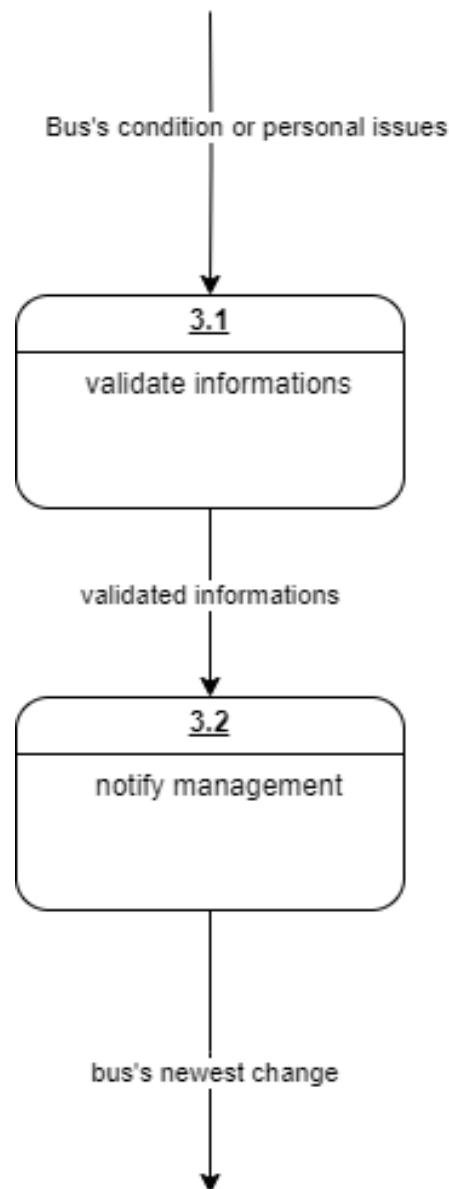
Level 1 Diagram:
Process 1: Check Current Available Bus



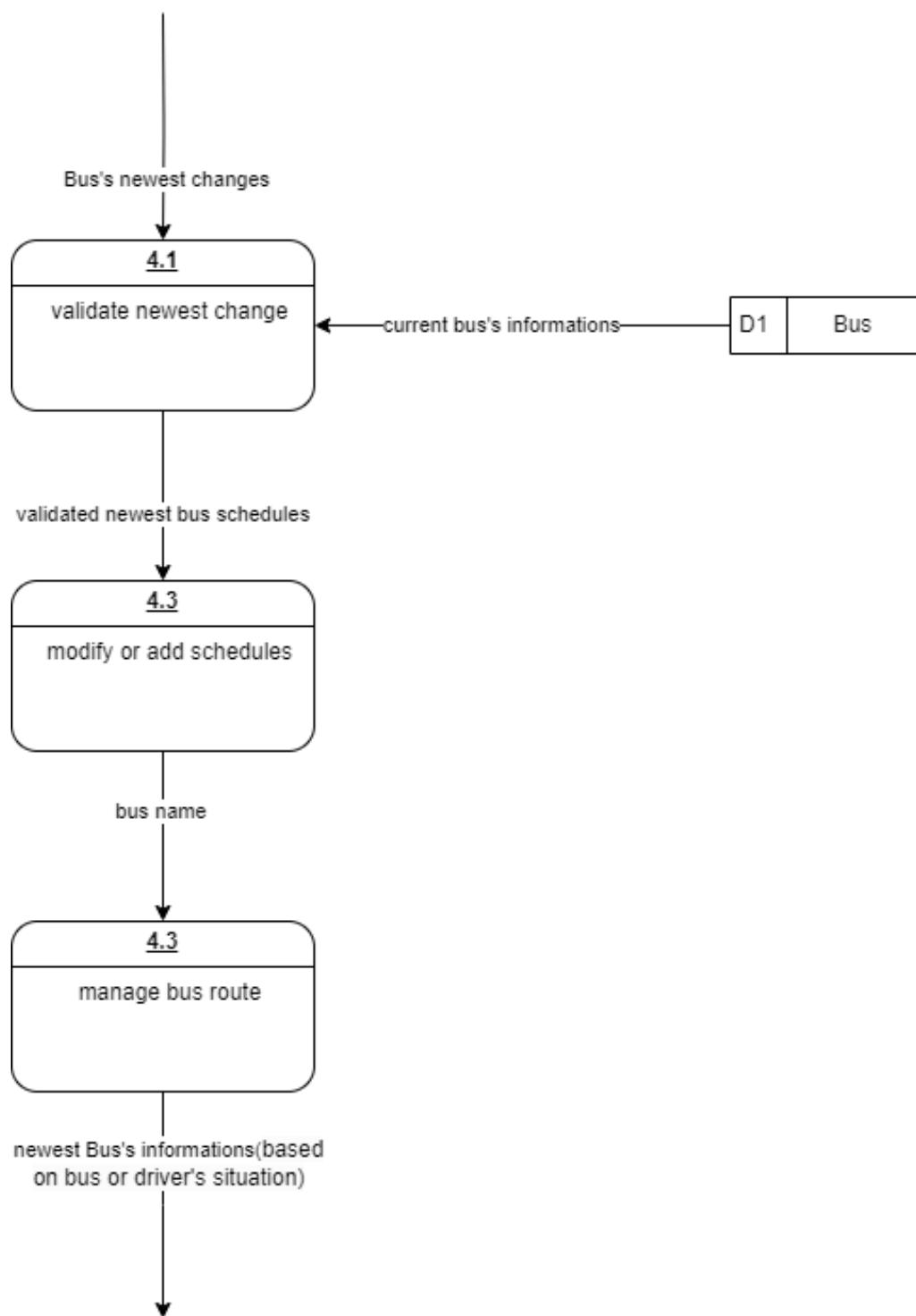
Level 1 Diagram:
Process 2: Check Fixed Shuttle Bus Schedules

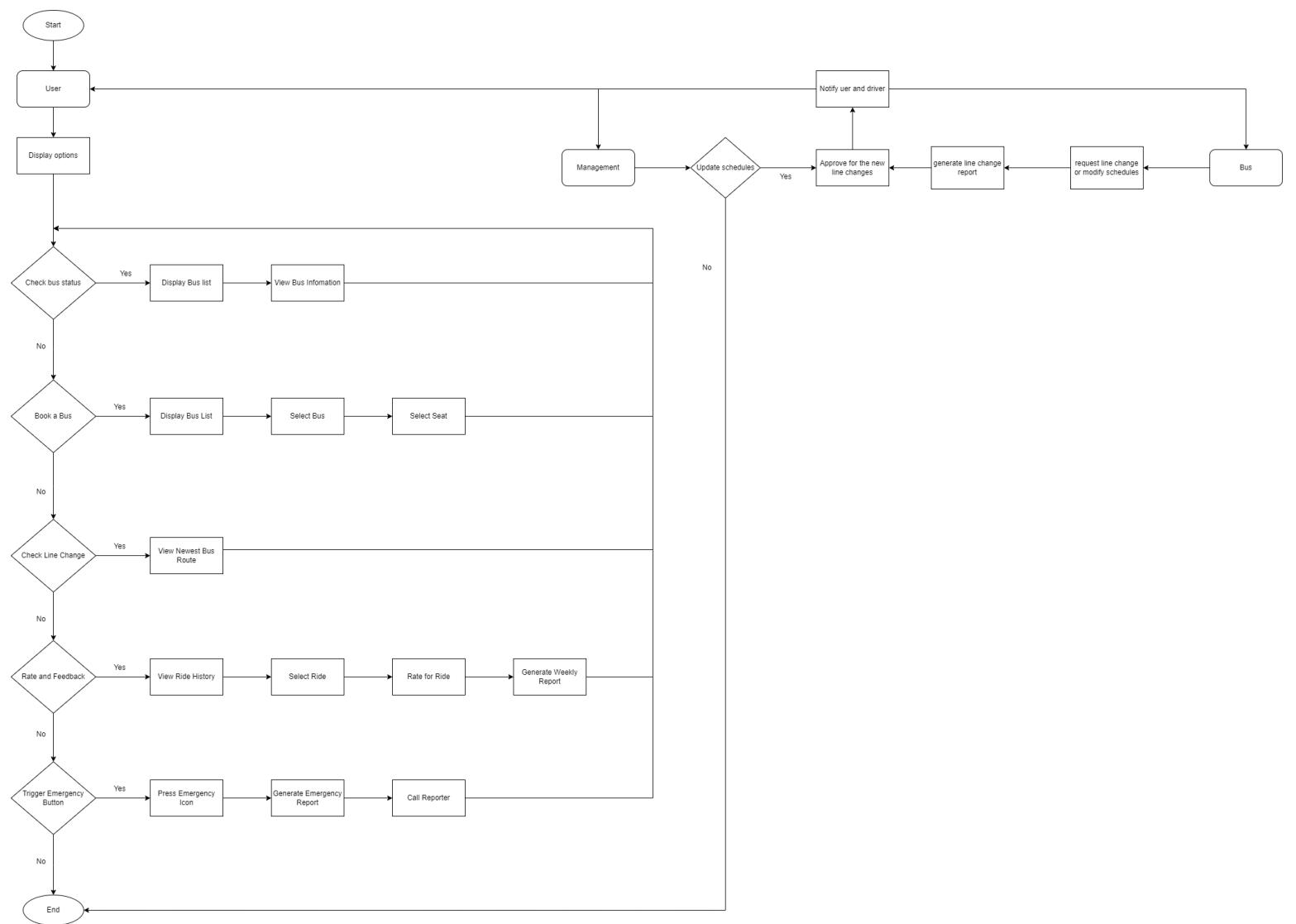


Level 1 Diagram:
Process 3: Contact Management

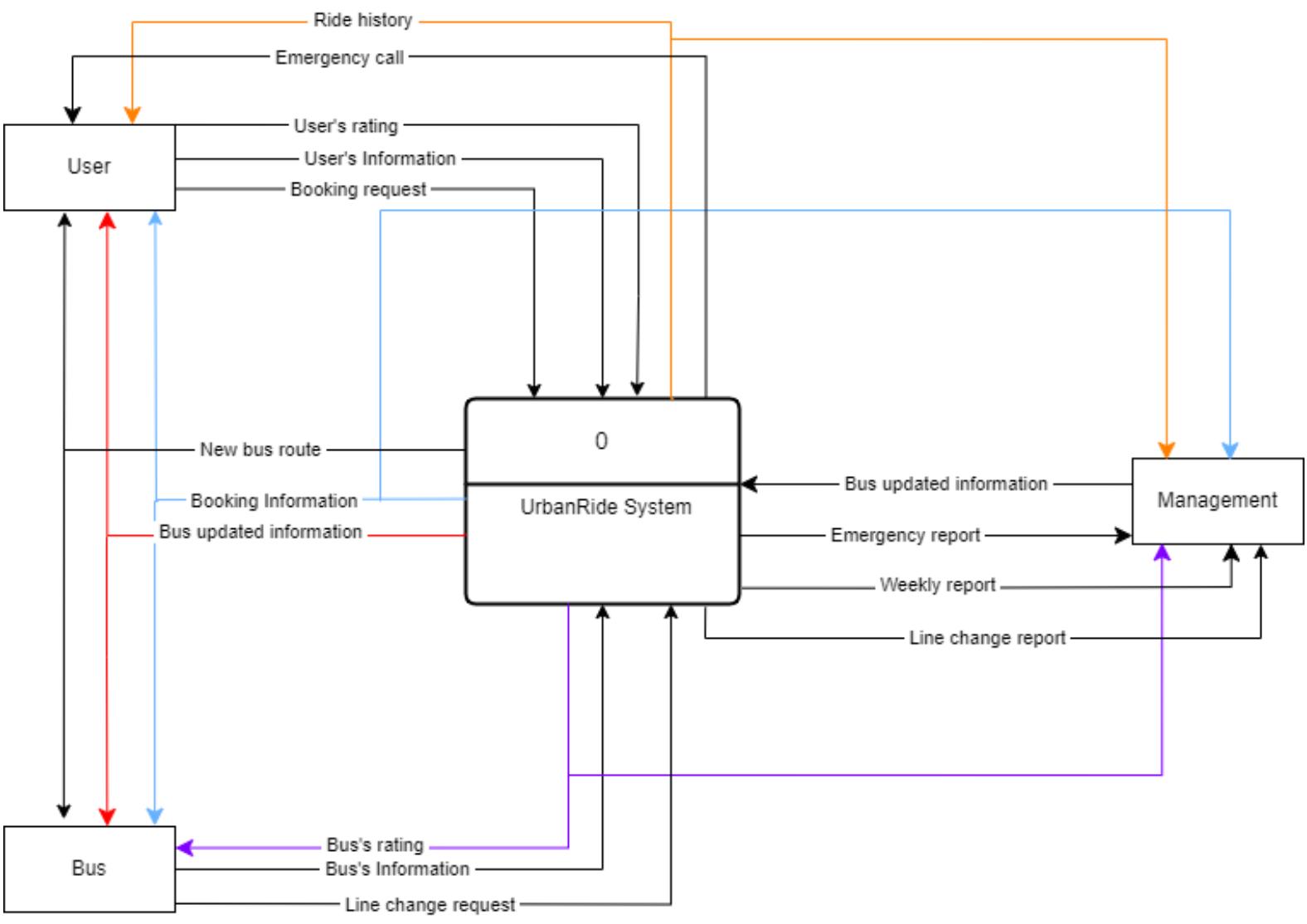


Level 1 Diagram:
Process 4: Update New Schedule or New Bus Route



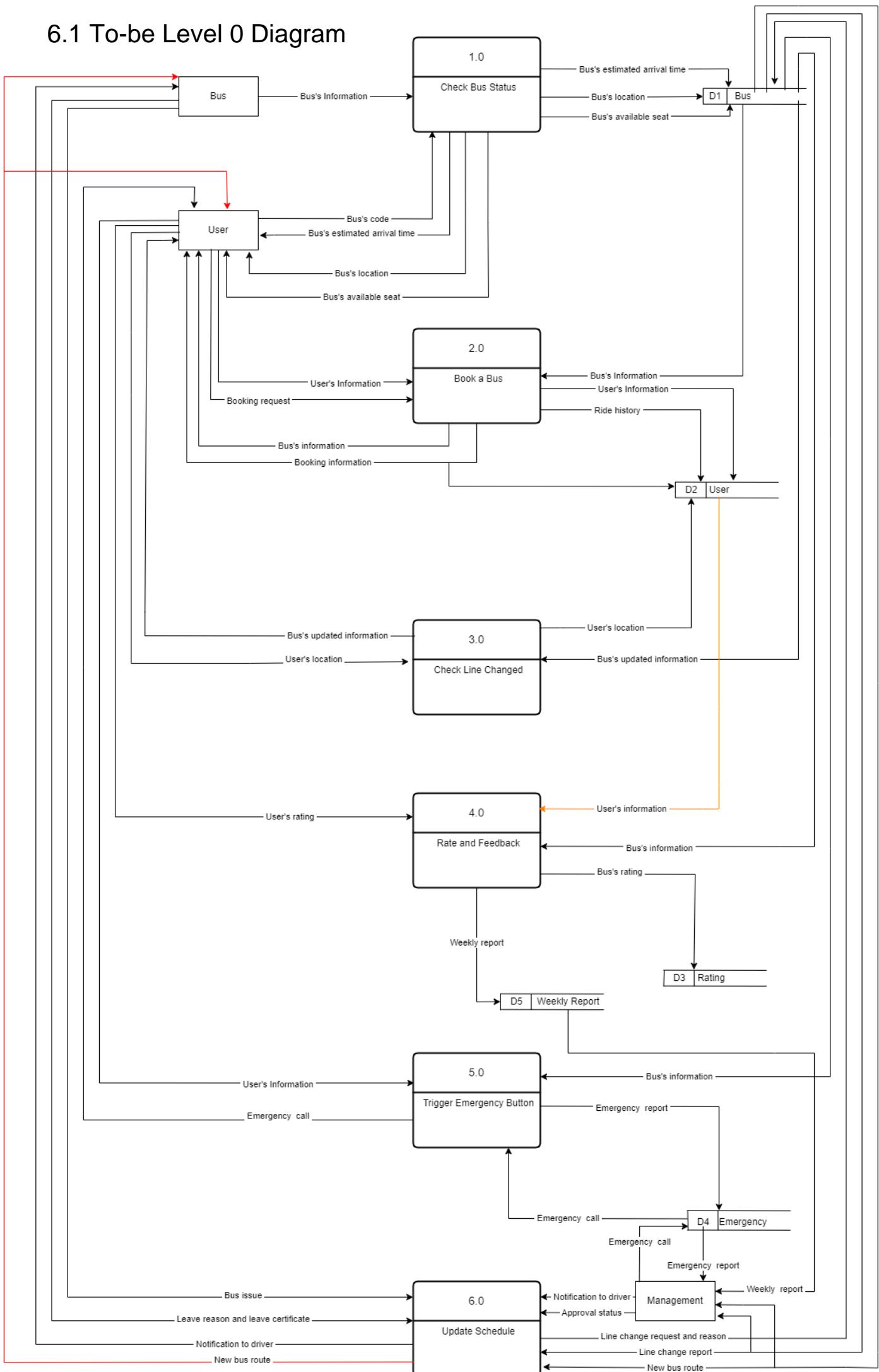


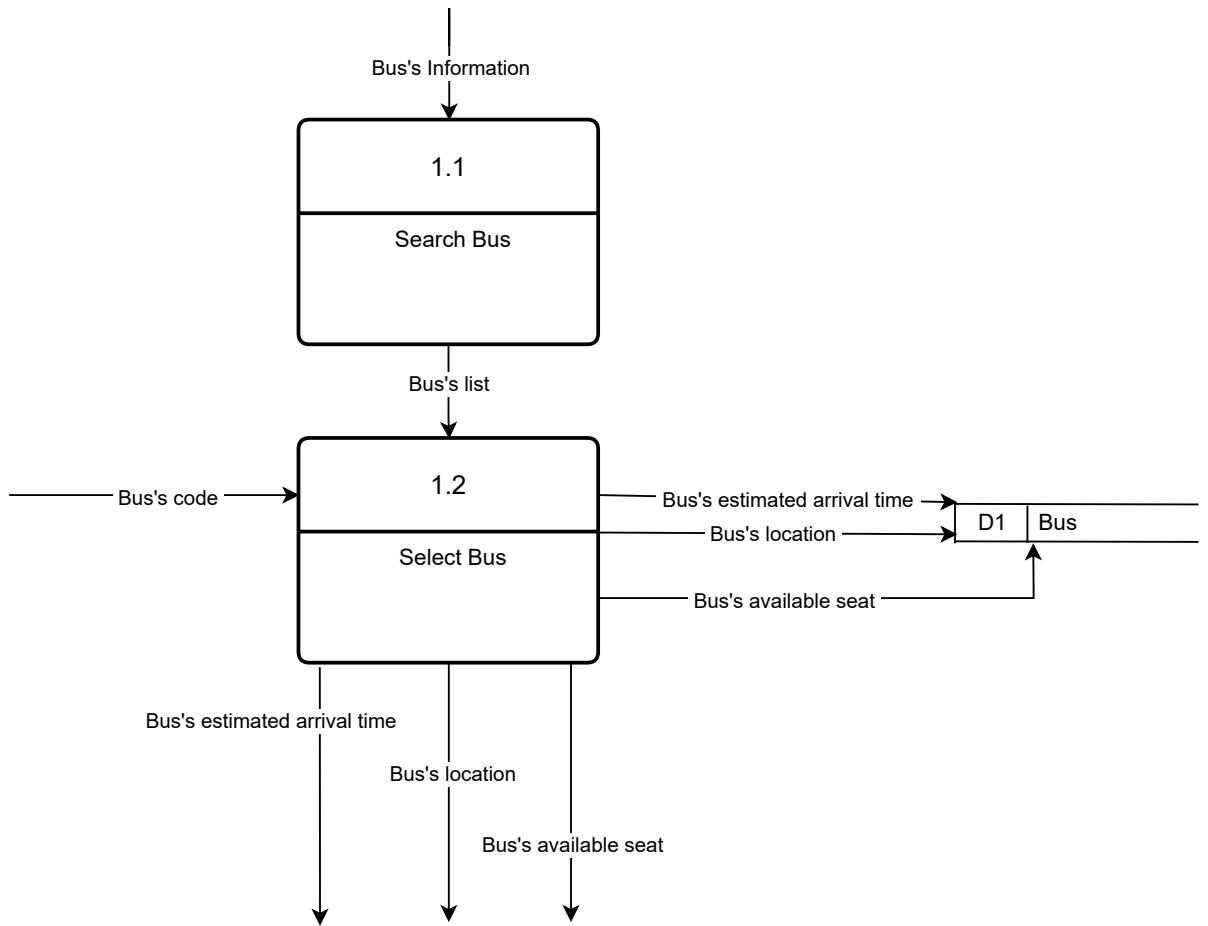
6.1 TO-BE System Workflow



6.1 To-Be Context Diagram

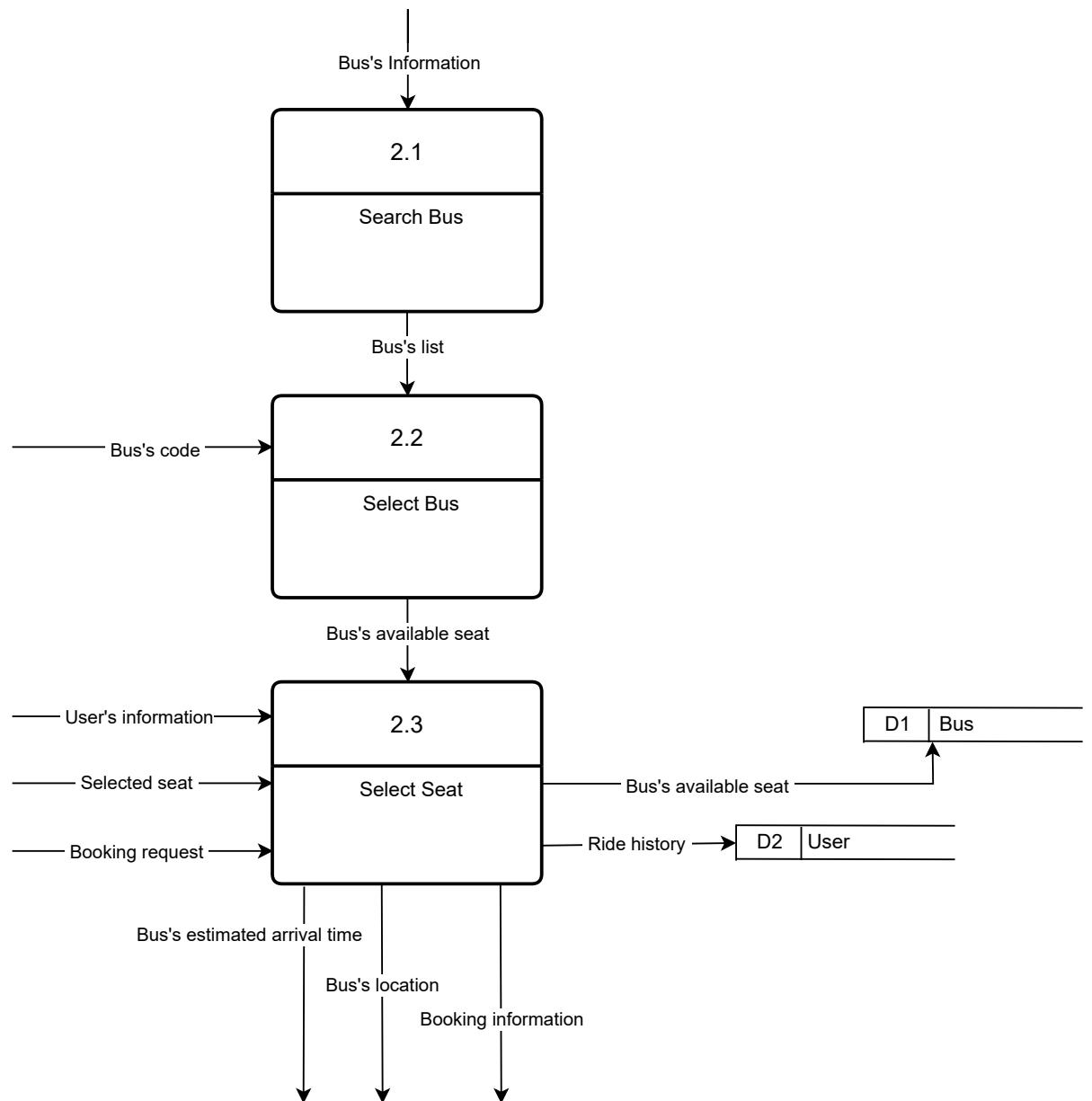
6.1 To-be Level 0 Diagram



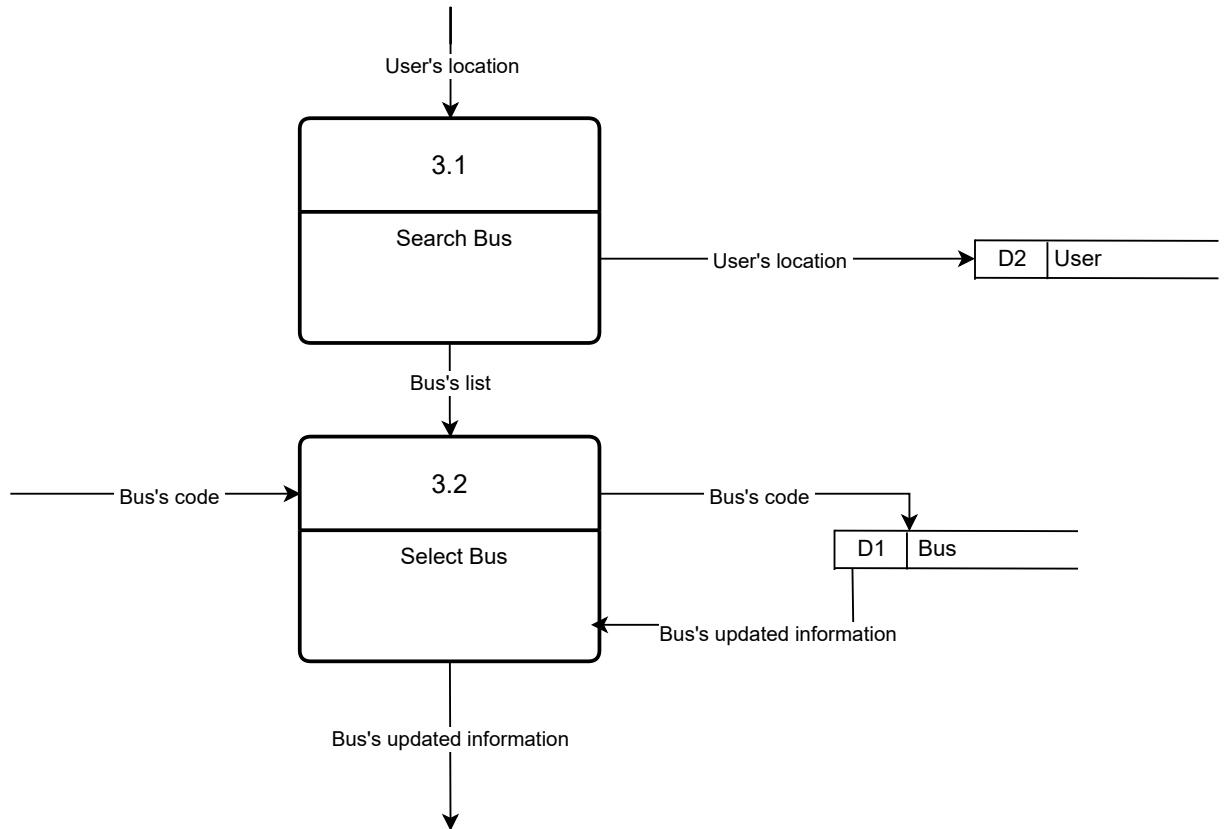


Level 1 diagram

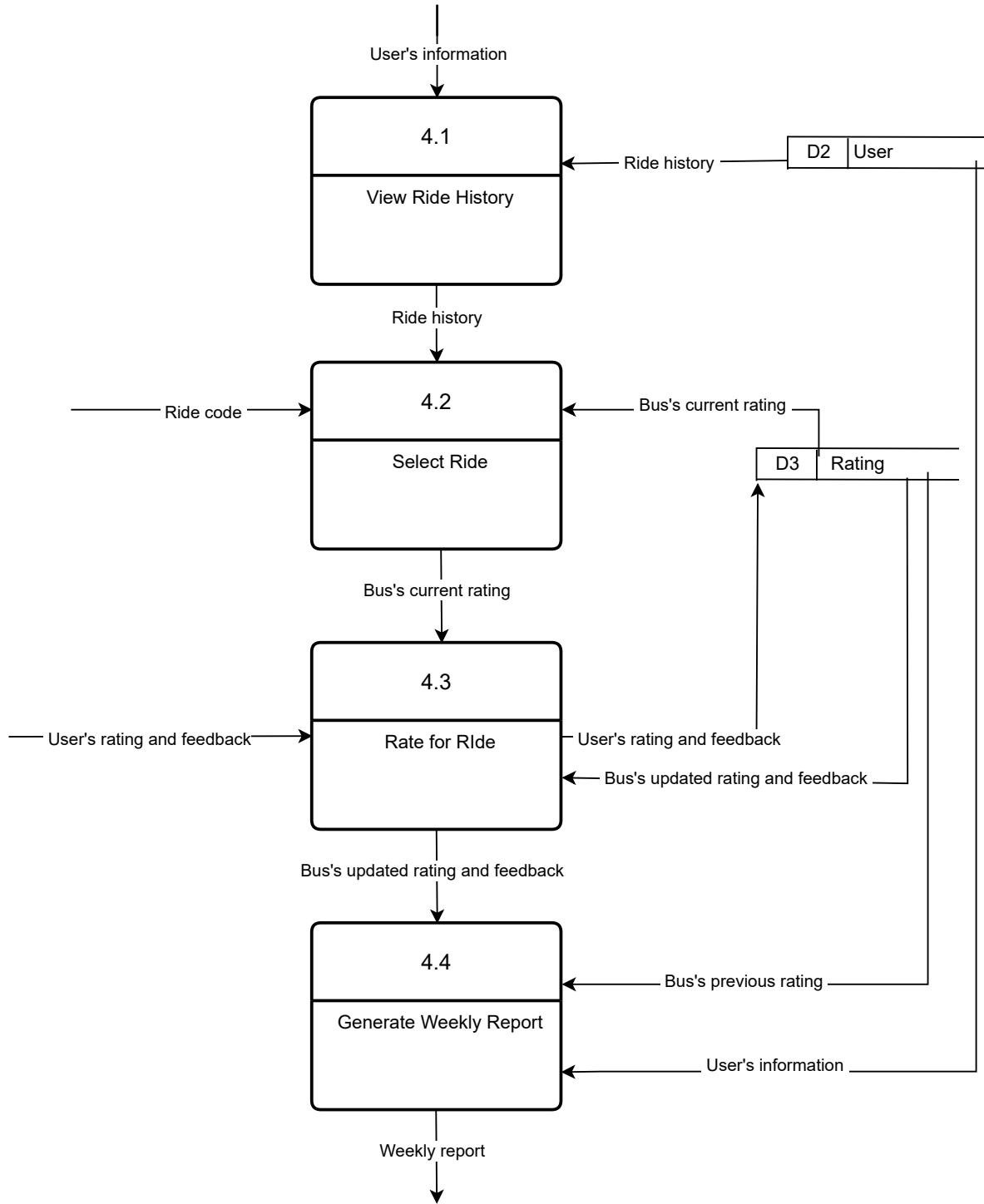
6.1.1 Process 1: Check Bus Status



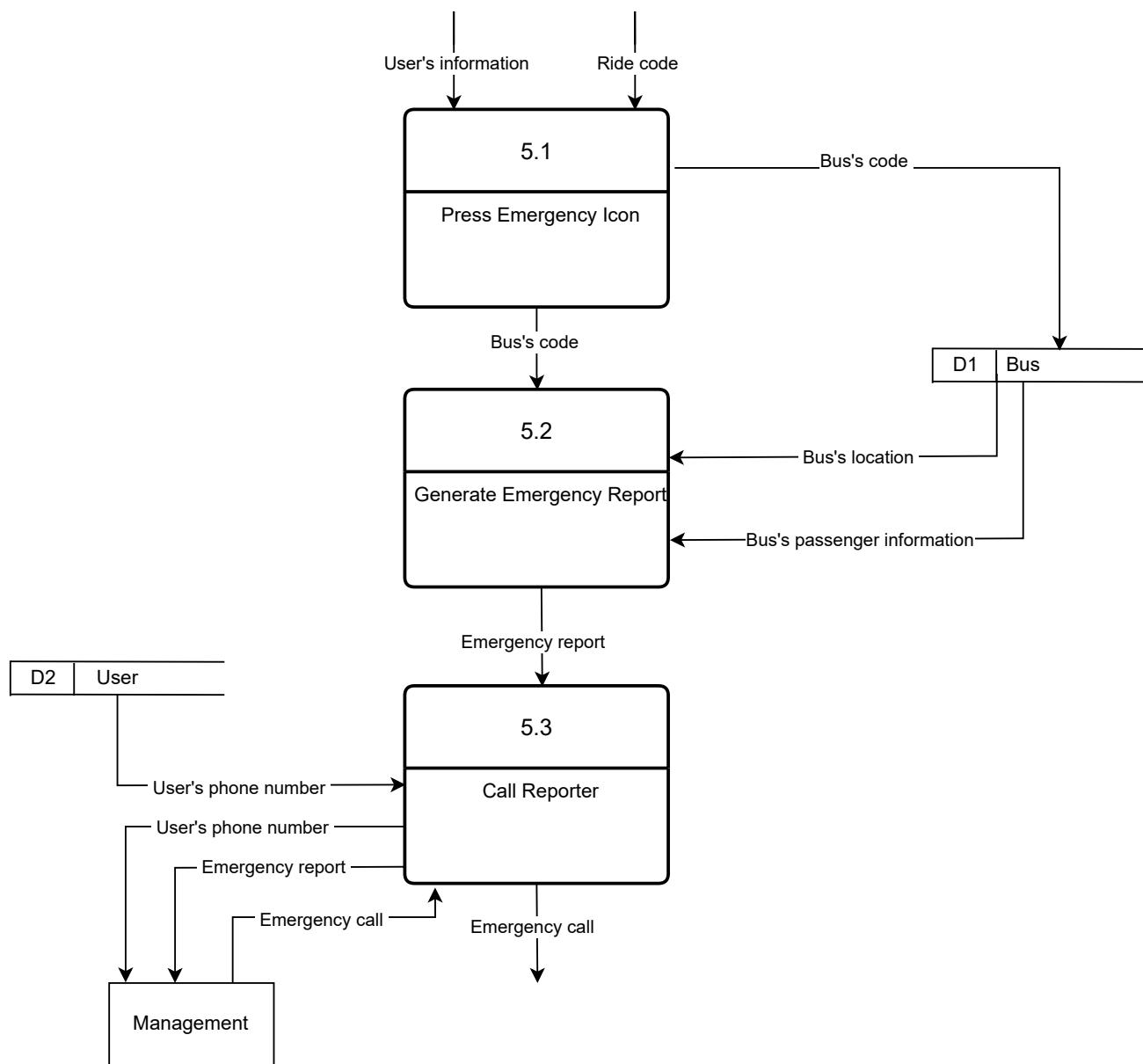
Level 1 diagram
6.1.2 Process 2: Book a Bus

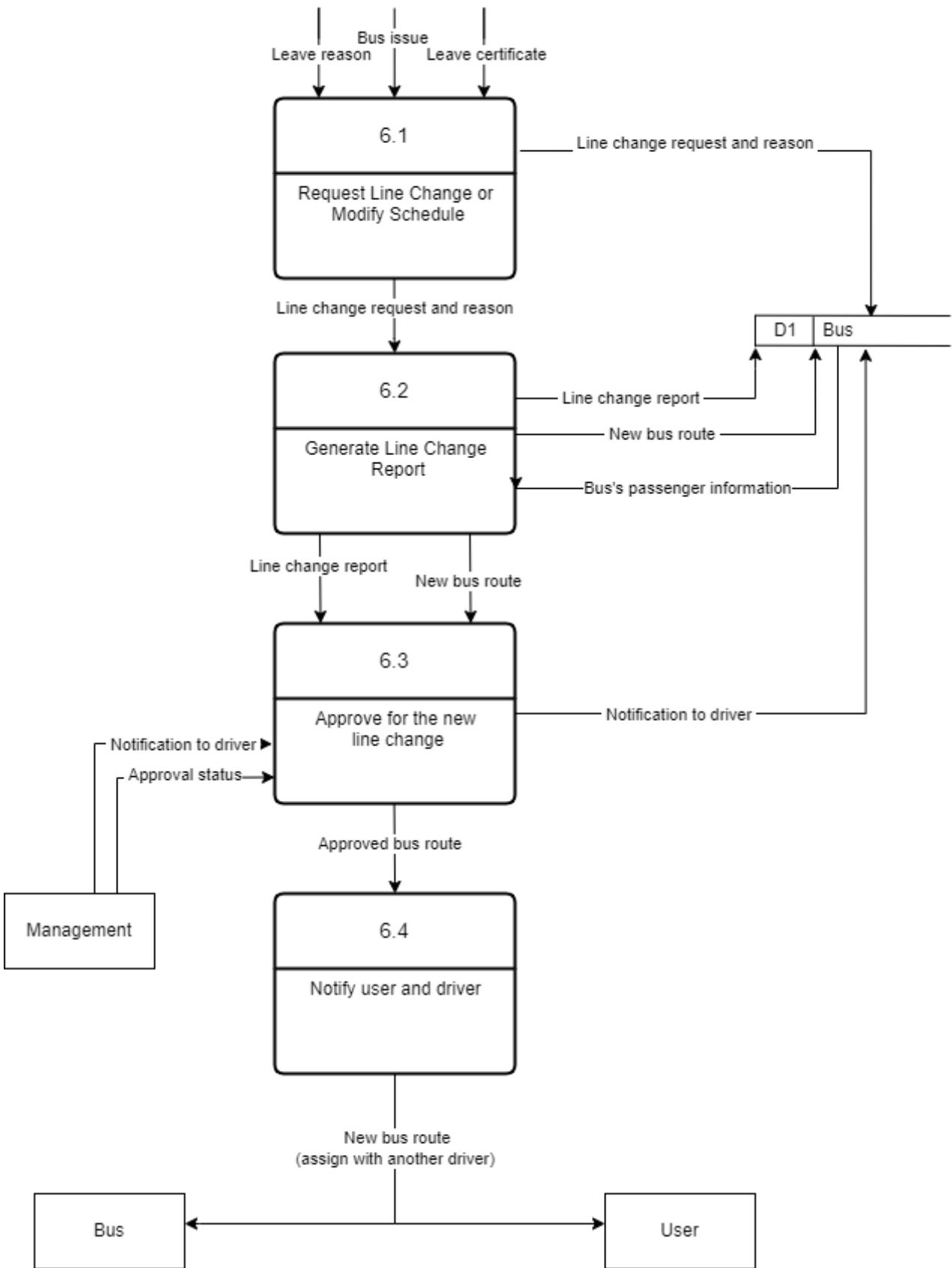


Level 1 diagram
6.1.3 Process 3: Check Line Change



Level 1 diagram
6.1.4 Process 4: Rate and Feedback





Level 1 Diagram
6.1.6 Process 6: Update Schedule

6.2 Process Specification (based on Logical DFD TO-BE)

Structured English is used to illustrate the process specification based on Logical DFD TO-BE

6.2.1 Check bus status

DO

 Get bus's information

 THEN get available bus

 PERFORM generation of bus's list

 BEGIN IF

 IF user's input bus code is in bus's list

 Display bus's estimated arrival time

 Display bus's location

 Display bus's available seat

 ELSE continue

 END IF

6.2.2 Book a bus

DO

Get bus's information

THEN get available bus

PERFORM generation of bus's list

BEGIN IF

IF user's input bus code is in bus's list

 Display bus's available seat

 IF user select a seat that is available

 READ user's information

 Get booking request

 Update latest bus's available seat

 Update user's ride history

 THEN

 Display bus's estimated arrival time

 Display bus's location

 Display booking information

 ELSE continue

ELSE continue

END IF

6.2.3 Check line change

```
DO  
    READ user's location  
    THEN update user's location  
    PERFORM generation of bus's list  
    BEGIN IF  
        IF user's input bus code is in bus's list  
            READ bus's updated information  
            THEN Display bus's updated information  
        ELSE continue  
    END IF
```

6.2.4 Rate and feedback

```
DO  
    READ user's information  
    READ user's ride history  
    THEN  
        READ ride code  
        READ bus's current rating  
        THEN  
            READ user's rating and feedback  
            Update bus's rating and feedback  
        THEN  
            READ bus's updated rating and feedback  
            READ bus's previous rating  
            READ user's weekly report  
            PERFORM generation of weekly report
```

6.2.5 Trigger emergency button

DO

READ user's information

READ ride code

Get bus's code

THEN

READ bus's location

READ bus's passenger information

THEN Generate emergency report

THEN Get user's phone number

THEN

Send user's phone number to management

Send emergency report to management

THEN Get emergency call from management

PERFORM emergency call to user

6.2.6 Update schedule

DO

READ leave reason

READ bus issue

READ leave certificate

THEN Update line change request and reason

PERFORM Generate line change report

Send line change report to database

Update new bus route

THEN

READ notification to driver

READ approval status

THEN Send notification to driver

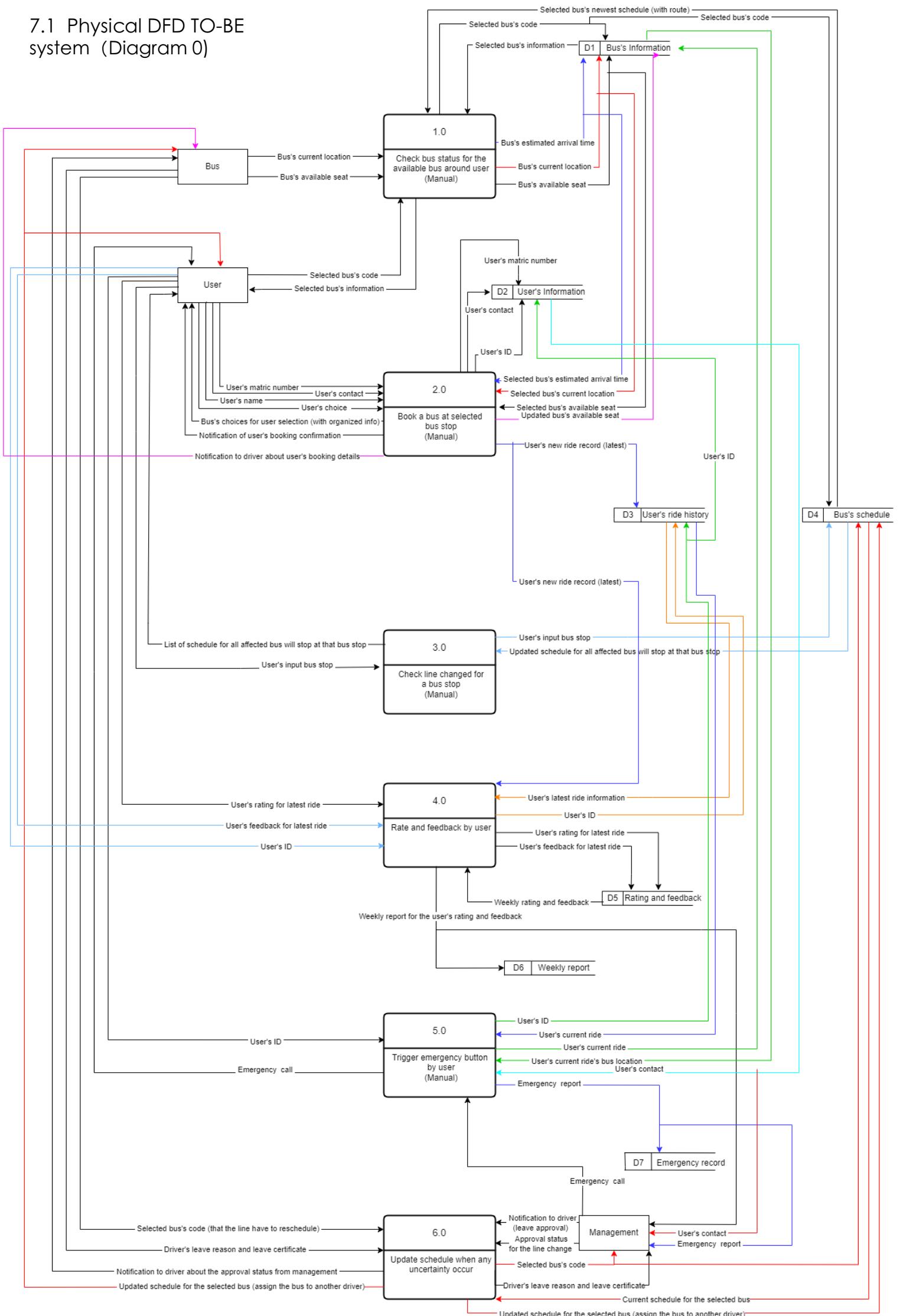
Generate approved bus route

THEN

Send new bus route to bus driver via notification

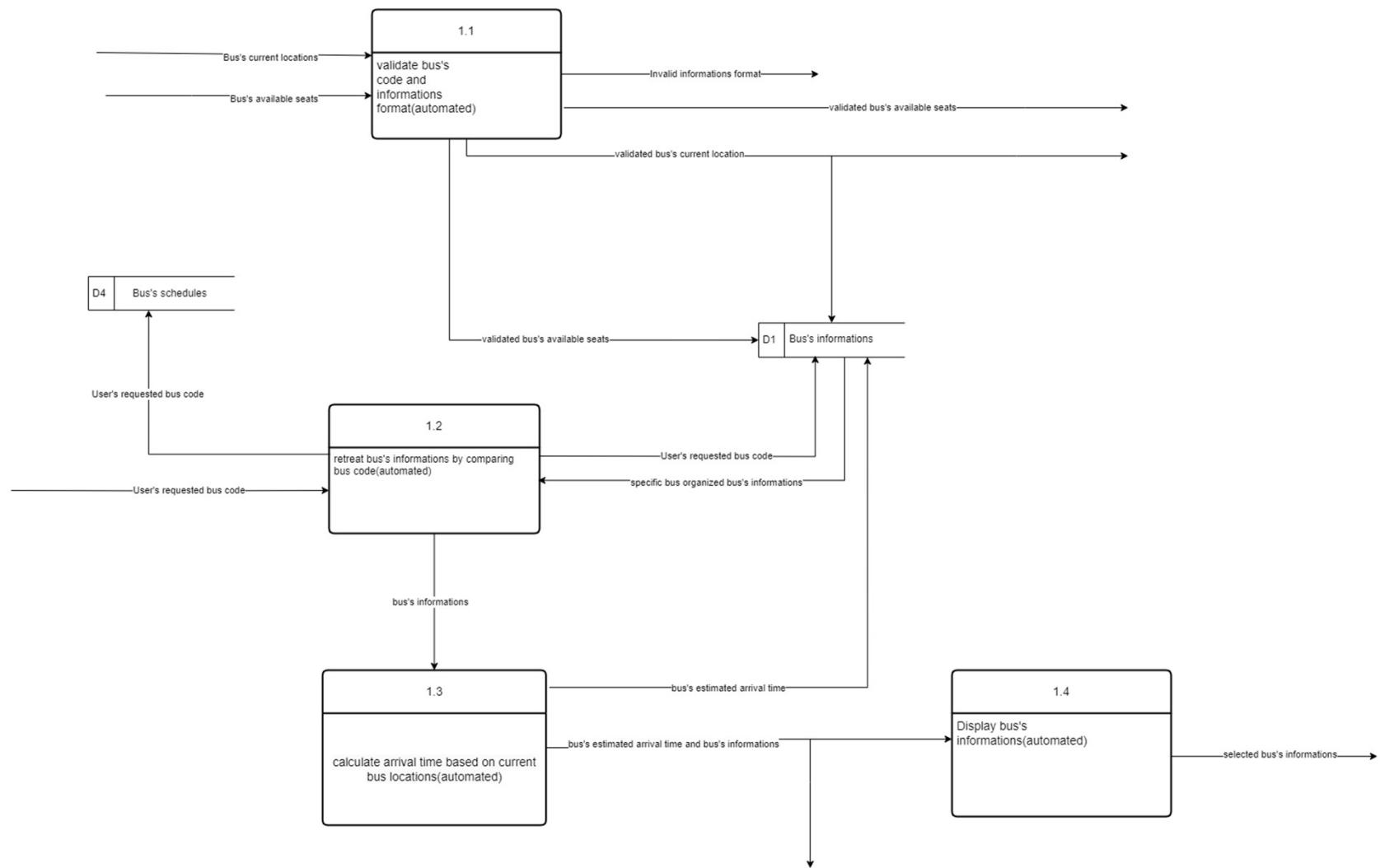
Send new bus route to user via notification

7.1 Physical DFD TO-BE system (Diagram 0)



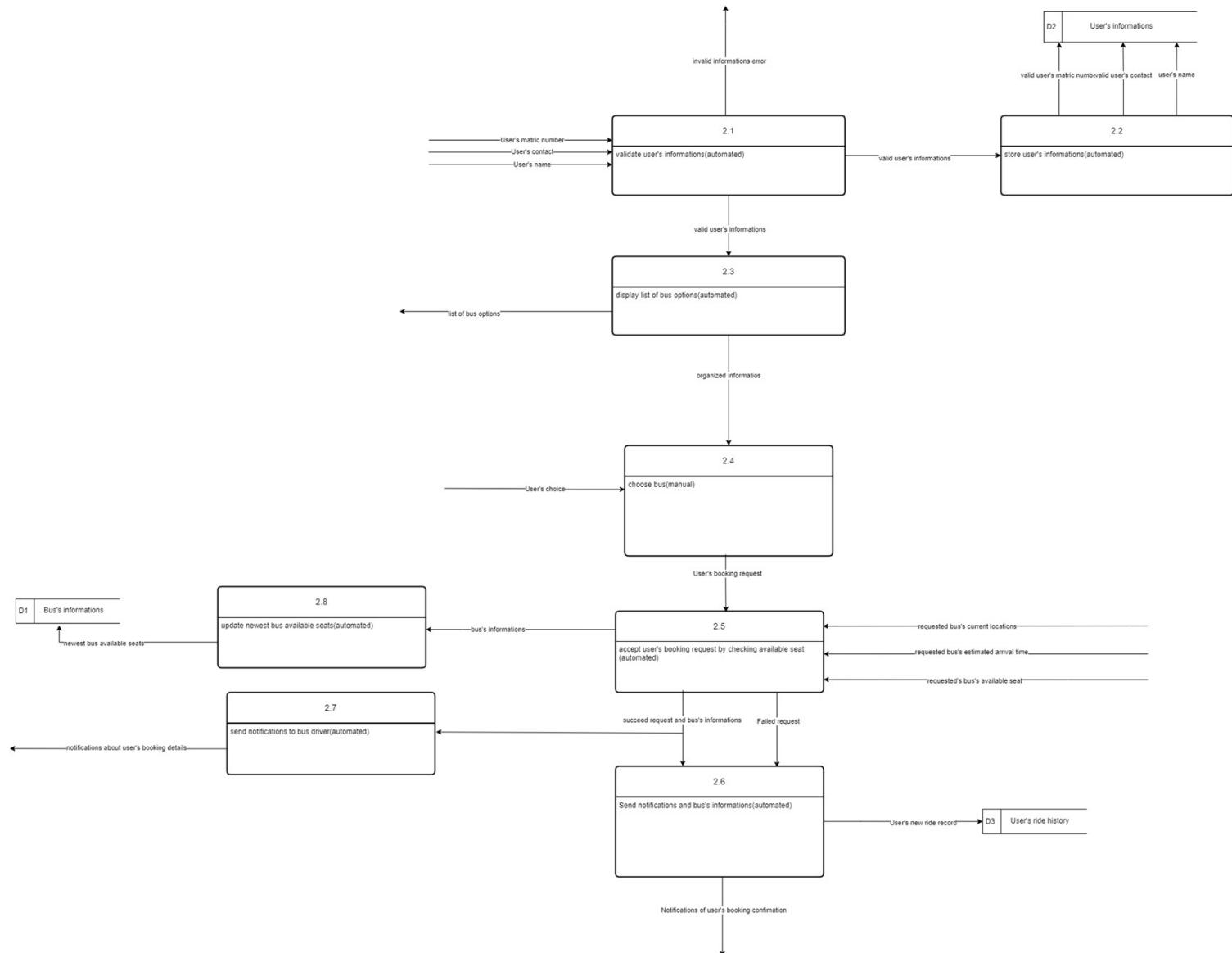
7.1 Physical DFD TO-BE system(Child Diagram)

Process 1(check bus status)



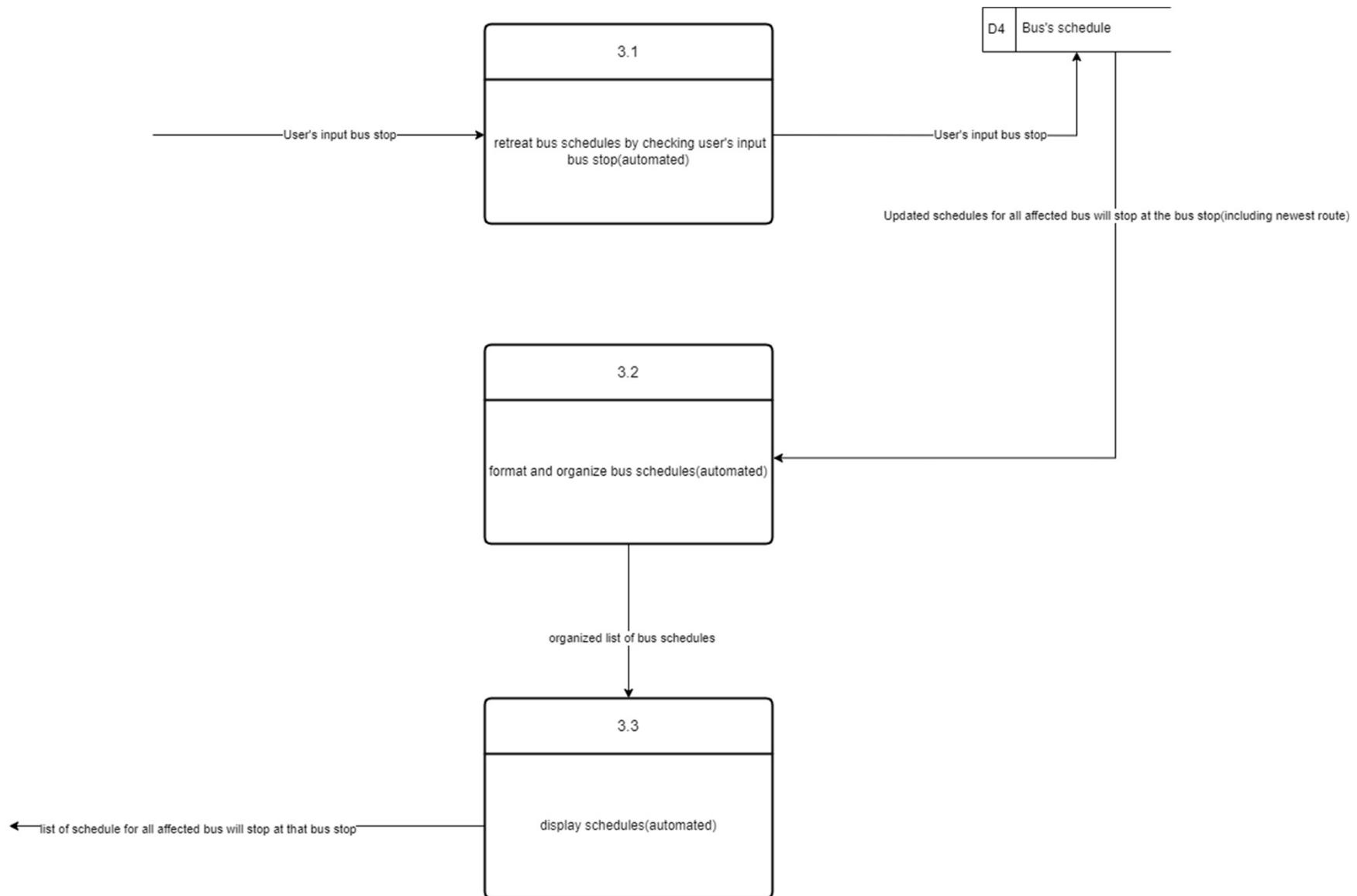
7.1 Physical DFD TO-BE system(Child Diagram)

Process 2(Book a bus)



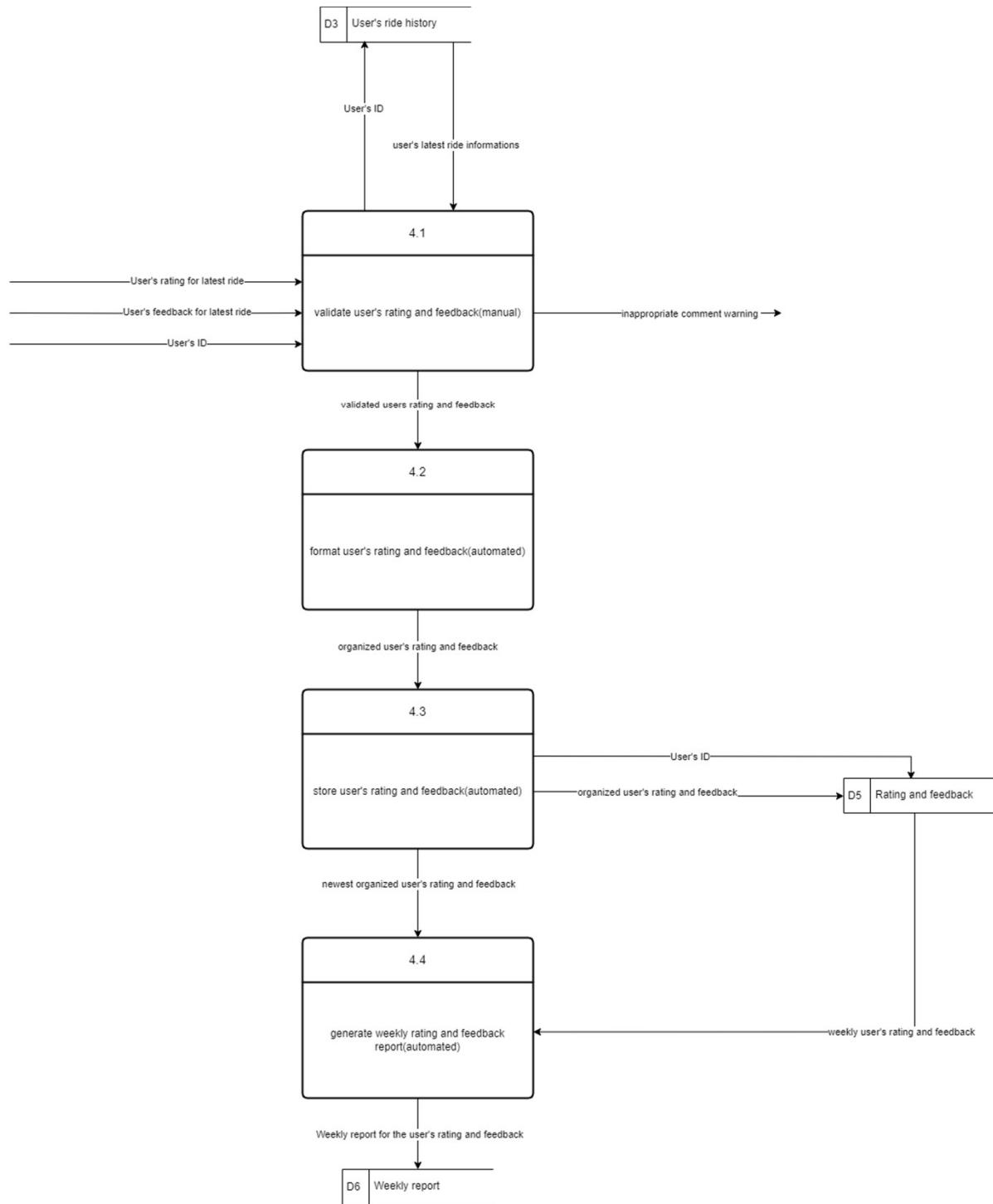
7.1 Physical DFD TO-BE system(Child Diagram)

Process 3(check line changed)



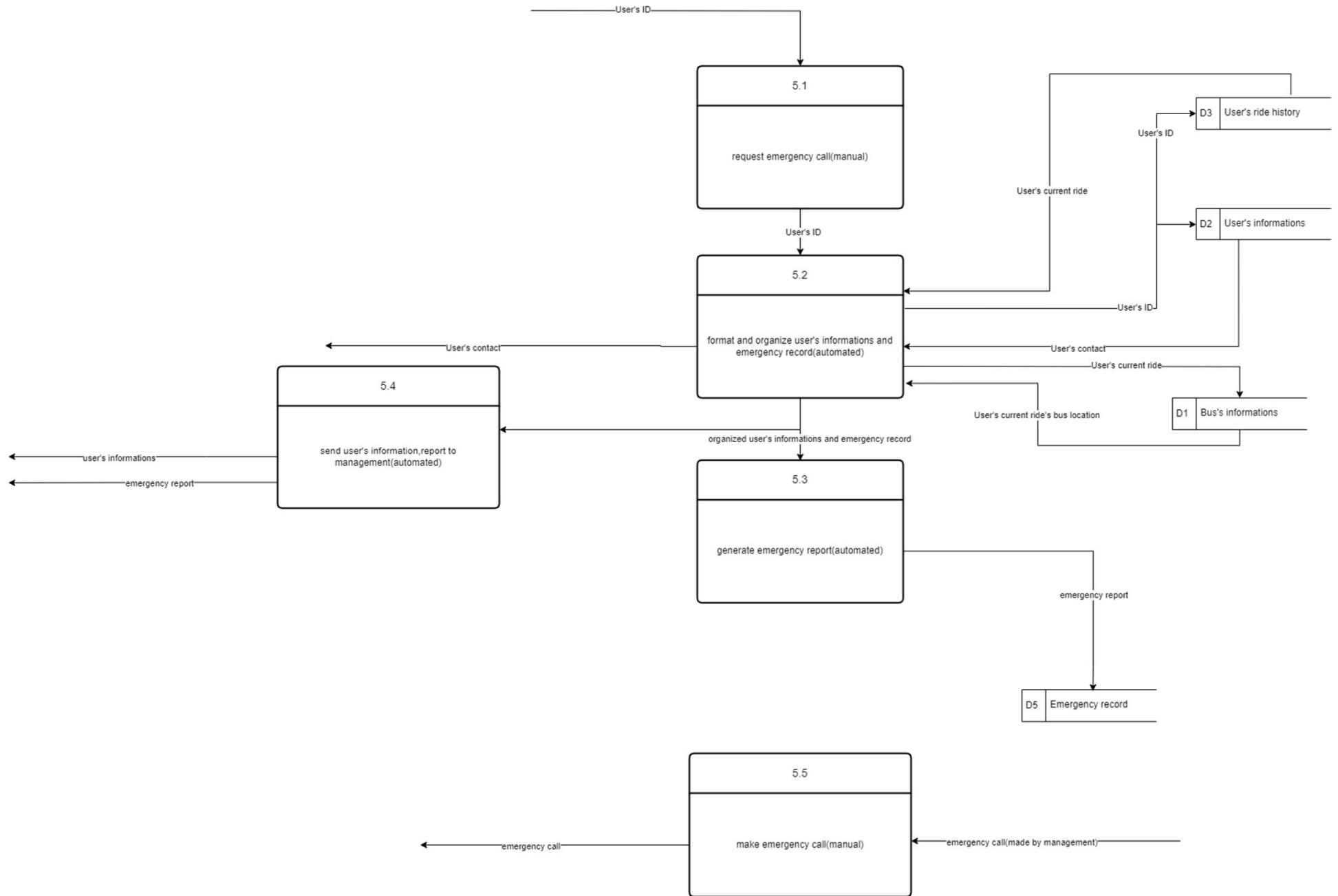
7.1 Physical DFD TO-BE system(Child Diagram)

Process 4(rate and feedback)



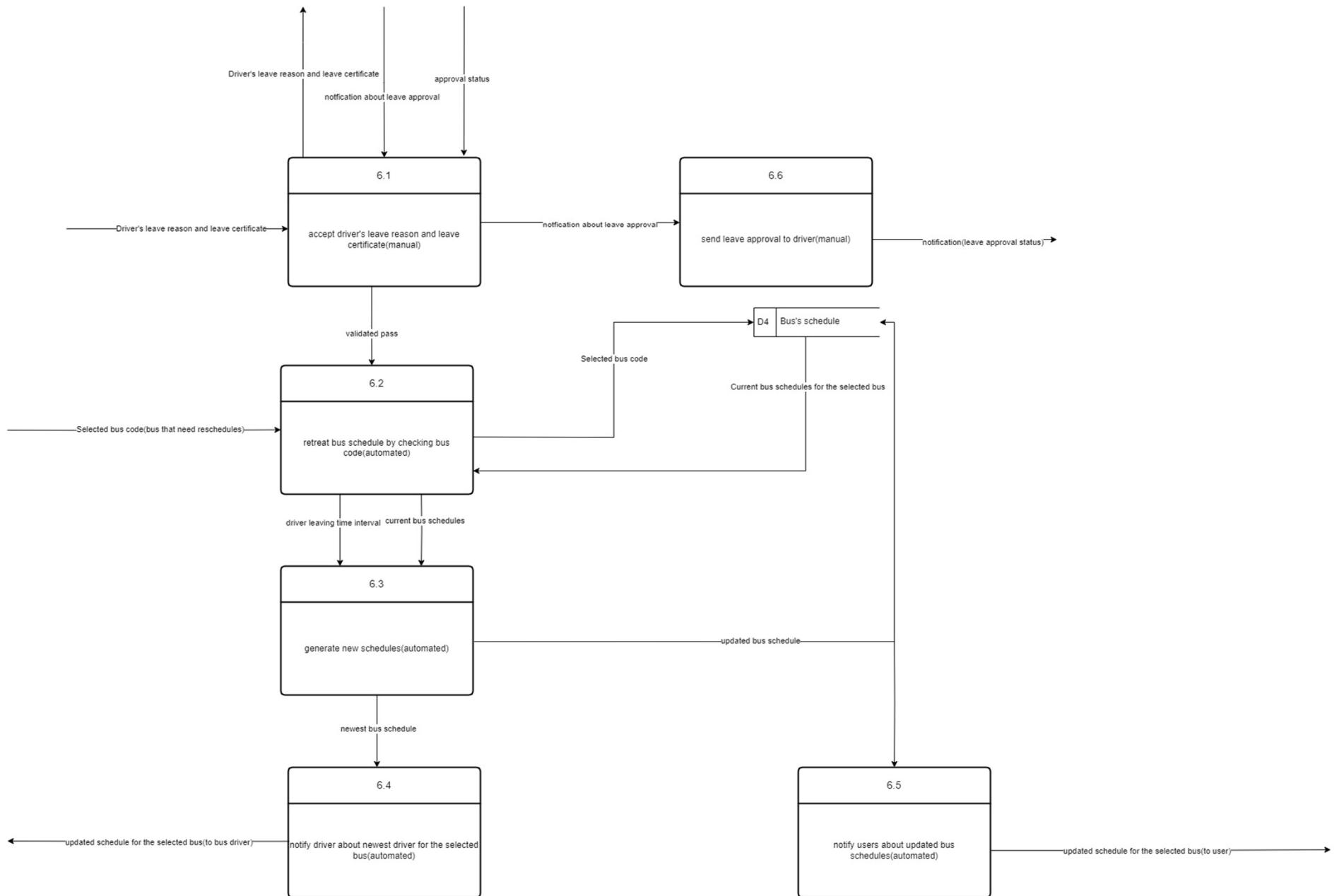
7.1 Physical DFD TO-BE system(Child Diagram)

Process 5(trigger emergency button)



7.1 Physical DFD TO-BE system(Child Diagram)

Process 6(update schedule when uncertainty occur)



7.1 PHYSICAL SYSTEM DESIGN

PARTITIONING

1. PARTITION 1 : Bus Status Checking,Booking system and User Feedback

Involve : Process 1.0 , 2.0 and 4.0

Check the status for the available bus and booking the bus at the selected area. Both processes directly involve user interaction for checking bus status and making bookings. The data required for both processes, such as bus information, user information, and ride history, are related. User feedback and ratings, which is a distinct functionality from booking or schedule management. Rating from the user can be done after the user books the bus.

2. PARTITION 2 : Line changes for the bus stop

Involve : Process 3.0

Check the changed bus schedule and update schedule when bus unavailability occurs. The process deals specifically with bus line changes to them and this process involves management actions to update and verify schedules, making them distinct from user interactions.

3. PARTITION 3 : Emergency Handling

Involve : Process 5.0

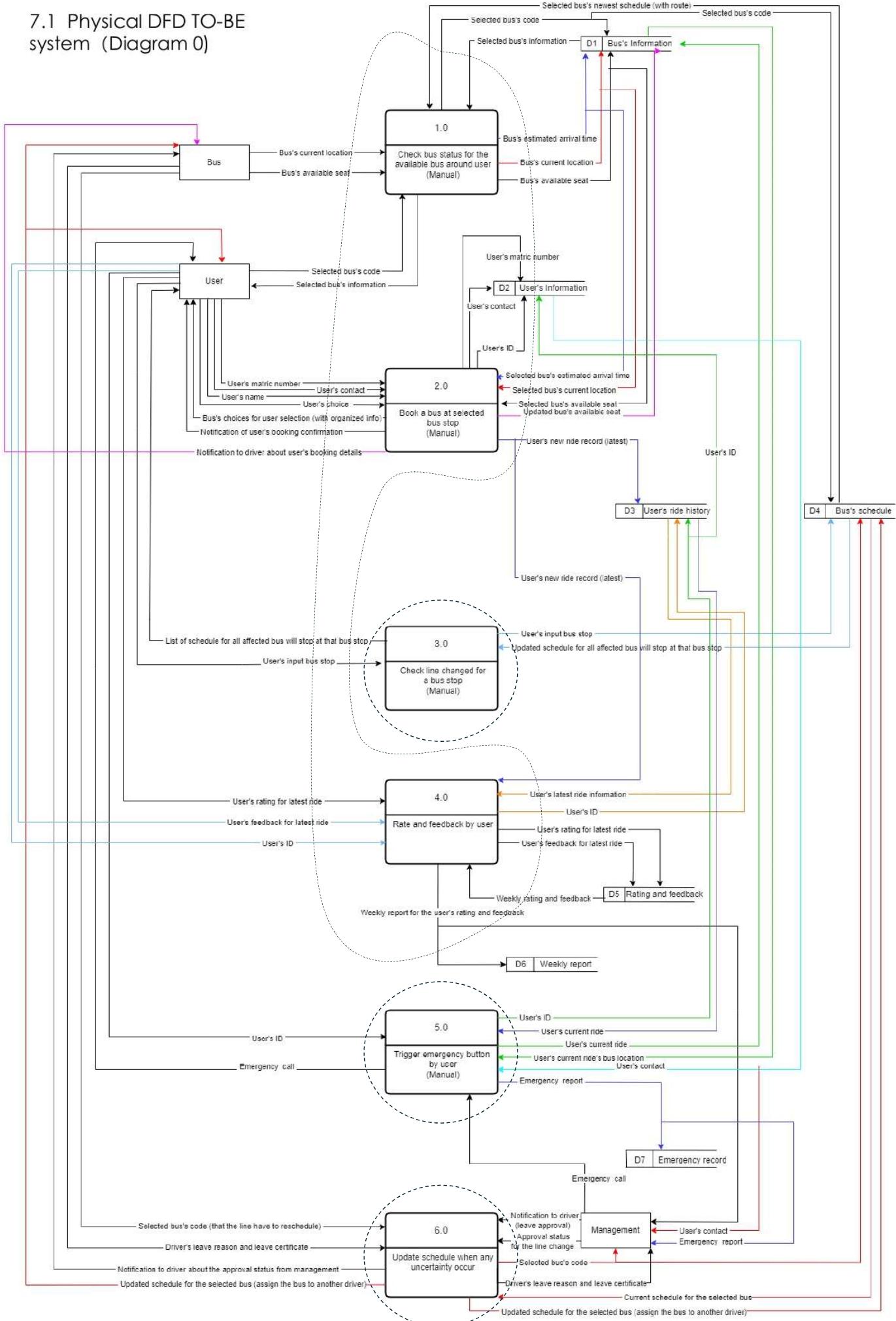
Trigger Emergency Button. Emergency handling is a critical and specialised functionality that requires immediate attention and action. The process of triggering an emergency and managing it is distinct from regular operational processes. Separating this functionality ensures that it is secure and prioritised appropriately, allowing for swift responses. Emergency records and related data need to be managed separately to maintain clarity and focus during emergencies.

4. PARTITION 4 : Update the schedule when emergency occurs

Involve : Process 6.0

Schedule of the bus will be updated when something unplanned occurs. The driver will receive the notification first about the line changes. Then waiting for the approval from the manager whether the changes are approved or not. After that, the bus schedule will be updated based on the instruction from the manager department.

7.1 Physical DFD TO-BE system (Diagram 0)



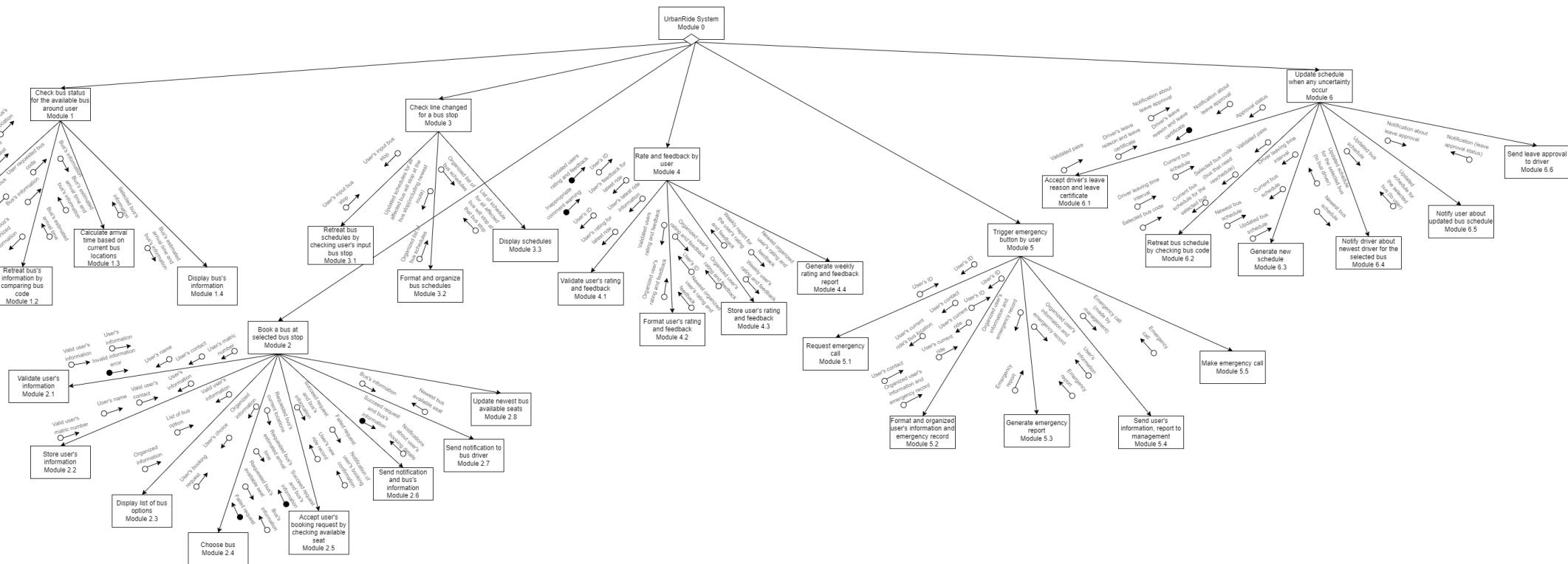
7.1 Physical DFD TO-BE system(CRUD Matrix)

Activity	Bus's information	User's information	User's ride history	Bus's schedules	Rating and feedback	Weekly report	Emergency record
Check bus status for the available bus around user	RCU			R			
Book a bus at selected bus stop	U	RCU	CU				
Check line changed for a bus stop				R			
Rate and feedback by user			R		CRU	CU	
Trigger emergency button by user	R	R	R				CU
Update schedule when any uncertainty occur	R			CRUD			

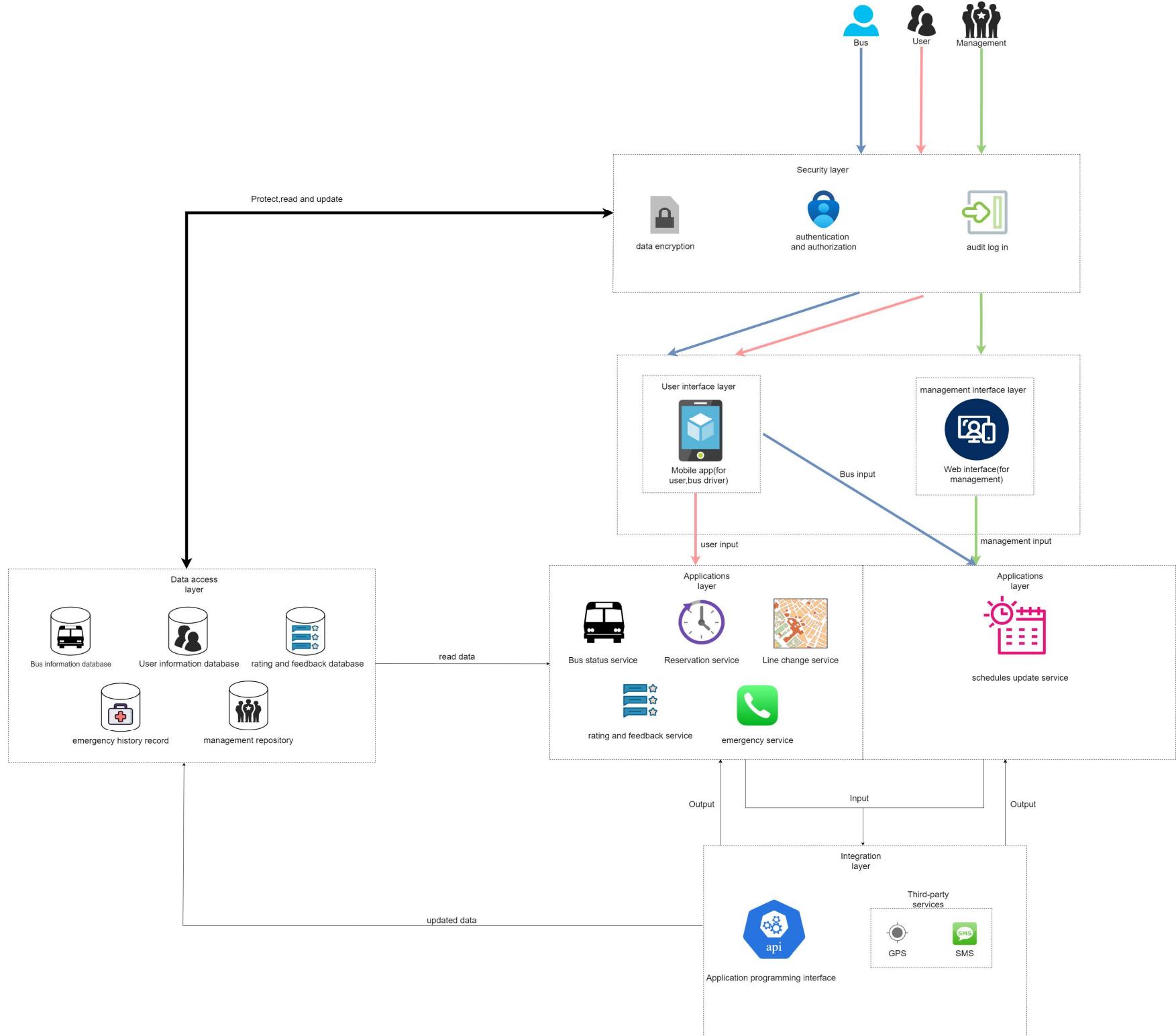
7.1 Physical DFD TO-BE system(Event Response table)

Event	Source	Trigger	Activity	Response	Destination
View bus status	User	Selected bus's code	Bus live update it's status,view bus status by accessing bus status based on specific bus's code in database	Selected bus's informations	User
Book a bus at specific bus stop	User	User's choice, User's matric number, User's name, User's contact	Choose current available bus,send notifications on succeed reservation to user and bus driver	Notification of user's booking confirmations Notification about user's booking details	User, Bus
View line changed for specific bus stop	User	User's input bus stop	Access to newest bus schedules,display bus schedules(including routes)	List of schedules for all affected bus	User
Give rating and feedback	User	User's rating and feedback for latest ride, User's ID	Check if the feedback is inappropriate,store rating and feedback into rate and feedback database, Generate weekly rating and feedback report	Weekly report for the user's rating and feedback	
Trigger emergency button	User	User's ID	Generate emergency report,send user's informations and report to management,management make emergency call	Emergency report Emergency call	Management User
Update schedules if uncertainty occur	Bus	Driver's leave reason and leave certificate Selected bus's code	Accept driver's leave,retreat current schedules,generate new schedules, Notify driver and users about newest schedules, Notify about leave approval status	Updated schedules for selected bus Notifications about leave approval status	Users Bus

7.1 Physical DFD TO-BE system (Structure Chart)



7.1 physical DFD TO-BE system(system architecture)



8.0 System wireframe

Input design

1 Users view

1.1.1 Login page (input design)

Welcome

Username

Password

[Forgot Password?](#)

LOG IN

OR

Don't have an account?
[Create new account](#)



Description: The first page users will see is the login page. Before accessing all features, they must log in here. If they do not have an account, they can click "Create New Account" to sign up. If a user has forgotten their password, they can click "Forgot Password" to reset it.

1.1.2 sign up page (input design)

←

Sign up an account

Mobile number

Username

Password

Confirm password

SIGN UP



Description: New users should enter their mobile number, username, and password to sign up.



OTP Verification

Enter the verification code we just sent on your email address.

5	1	0	
---	---	---	--

Verify



Description: After entering all the information and clicking "Sign Up," the user will receive an OTP number for verification.



Account sign up



Sign up successfully!

Your account has been created successfully.

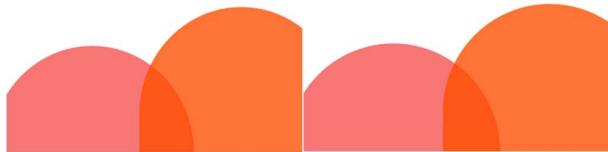
Go to Menu



Description: If the OTP is entered correctly, the user will sign up successfully. Clicking "Go to Menu" will take the user to the menu page.

1.1.3 forgot password (input design)

The image shows two separate input forms side-by-side. The left form is titled "Enter phone number" and contains a "Mobile number" input field and a "CONFIRM" button. The right form is titled "Enter password" and contains "Password" and "Confirm password" input fields, along with a "CONFIRM & SEND OTP" button. Both forms have a back arrow icon at the top.



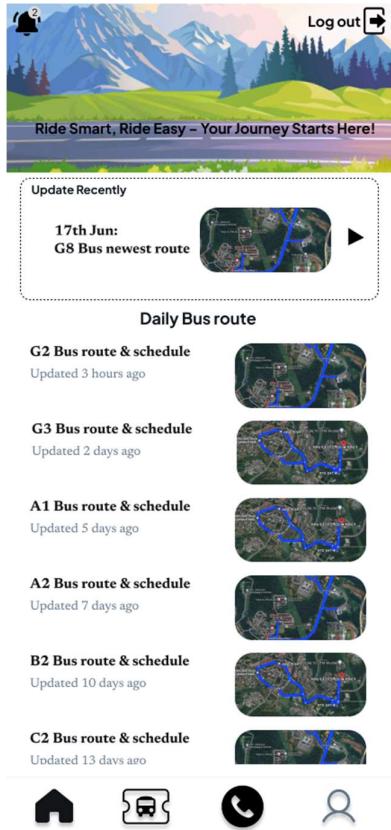
Description: If a user forgets their password, they must enter their mobile phone number and a new password.

The image displays two forms. The left form is titled "OTP Verification" and includes a numeric input field with digits 5, 1, 0, and a blank field, followed by a "Verify" button. The right form is titled "Renew password" and features a green checkmark icon, the text "Password Changed!", and the message "Your password has been changed successfully.", with a "Back to login" button below.



Description: If the OTP is entered correctly, the user will successfully reset their password. They can then click "Back to Login" to re-enter their username and new password.

1.2 menu include view update recently) (output design)



Description: At the main menu, users can directly see recent updates. There is a notification icon in the upper left corner. It is used to see how many updates have been released recently, click it to see more detail about update recently.Below the recent updates section is the daily bus route section. By clicking on any of the bus routes, users will be taken to a page where they can view the route on a map and see the latest schedules. At the bottom, there are four buttons: the first button is for the main menu page, the second button is for booking a bus, the third button is for emergency reports, and the last button is for the profile page.

1.2.1 check recent updates on menu

Recent Update

G2 Bus route update due to accident Updated 3 hours ago	
G3 Bus route & schedule update due to road block Updated 2 days ago	
A1 Bus route & schedule update due to accident Updated 5 days ago	
A2 Bus route & schedule update due to road block Updated 7 days ago	
B2 Bus route & schedule update due to road block Updated 10 days ago	
C2 Bus route & schedule update due to road block Updated 13 days ago	
G2 Bus route & schedule update due to road block Updated 14 days ago	
F1 Bus route & schedule update due to road block Updated 15 days ago	

Description:This is page that will show recent updates,you can see the update due to what reasons and click it to check the newest route and schedules.

1.3 view line change (output design)

← Newest route & schedules

← Newest route & schedules

← Newest route & schedules

Bus route & schedules

Bus B1: KP-K9/K10-T02-T08-K9/K10-KP

From K9/K10	To T02
07:10	07:25
07:40	07:55
08:10	08:25
08:40	08:55
09:10	09:25
09:40	09:55
11:05	11:25
11:45	12:05
12:25	12:45

Bus route & schedules

Bus B1: KP-K9/K10-T02-T08-K9/K10-KP

From K9/K10	To T02
KP	07:25
T08	07:55
08:10	08:25
08:40	08:55
09:10	09:25
09:40	09:55
11:05	11:25
11:45	12:05
12:25	12:45

Bus route & schedules

Bus B1: KP-K9/K10-T02-T08-K9/K10-KP

From KP	To T02
07:10	07:25
07:40	07:55
08:10	08:25
08:40	08:55
09:10	09:25
09:40	09:55
11:05	11:25
11:45	12:05
12:25	12:45

Home
Bus
Call
User
Home
Bus
Call
User
Home
Bus
Call
User

Description: After the user clicks on any of the bus routes, they will be taken to a page where the bus route map and schedules are displayed. If the user clicks on the destination or starting point of the bus route, a list box will appear, allowing them to choose any location to view the arrival and departure times.

← Newest route & schedules

Bus route & schedules

Bus C1

Bus C2

Bus B1: KP-K9/K10-T02-T08-K9/K10-KP

From	To
KP	T02
07:10	07:25
07:40	07:55
08:10	08:25
08:40	08:55
09:10	09:25
09:40	09:55
11:05	11:25
11:45	12:05
12:25	12:45

← Newest route & schedules

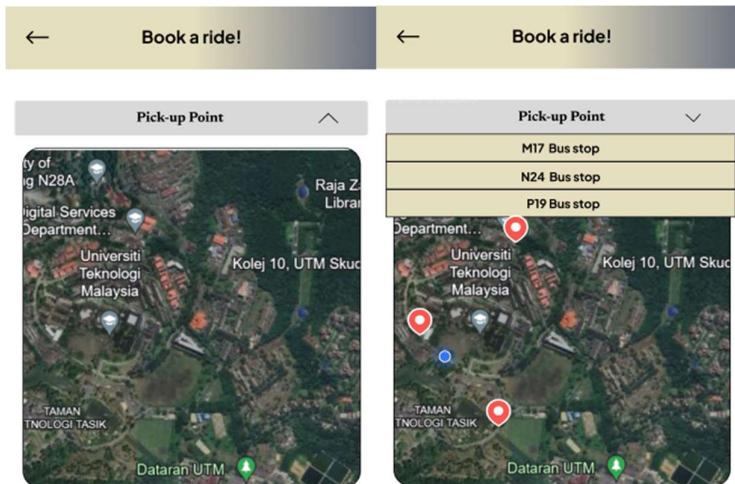
Bus route & schedules

Bus C1: K9/K10-KTC-JLN AMAL-KTC-K9/K10

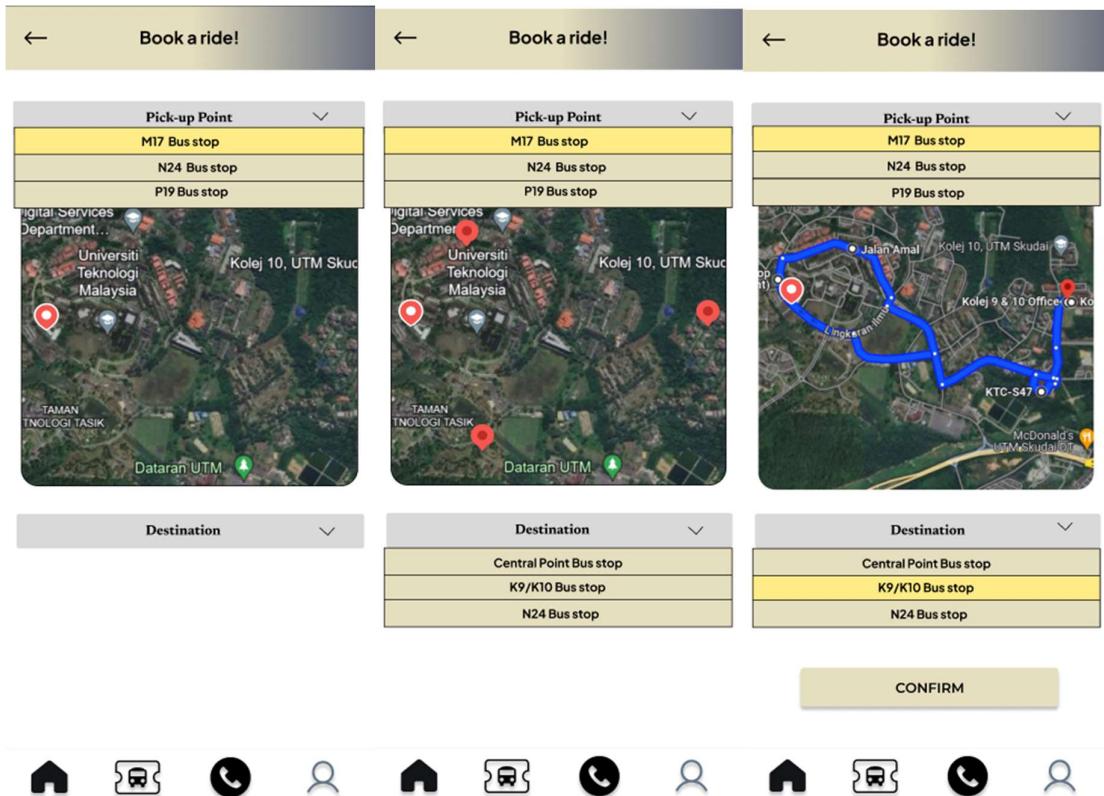
From	To
K9/K10	Centre Point
07:10	07:25
07:40	07:55
08:10	08:25
08:40	08:55
09:10	09:25
09:40	09:55
11:05	11:25
11:45	12:05
12:25	12:45

Description: If the user clicks on "Bus Route & Schedules," a list box will appear, allowing them to choose any bus to view its specific route and schedule.

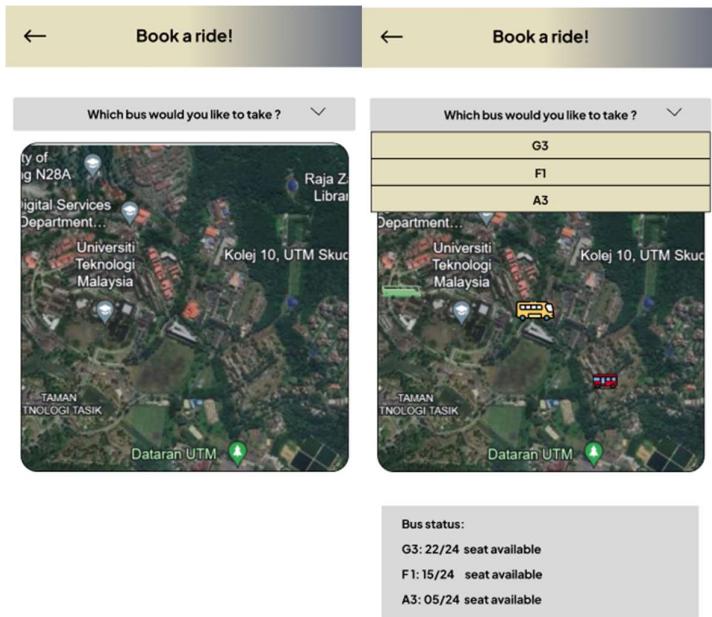
1.4.1 Book a Bus (input design)



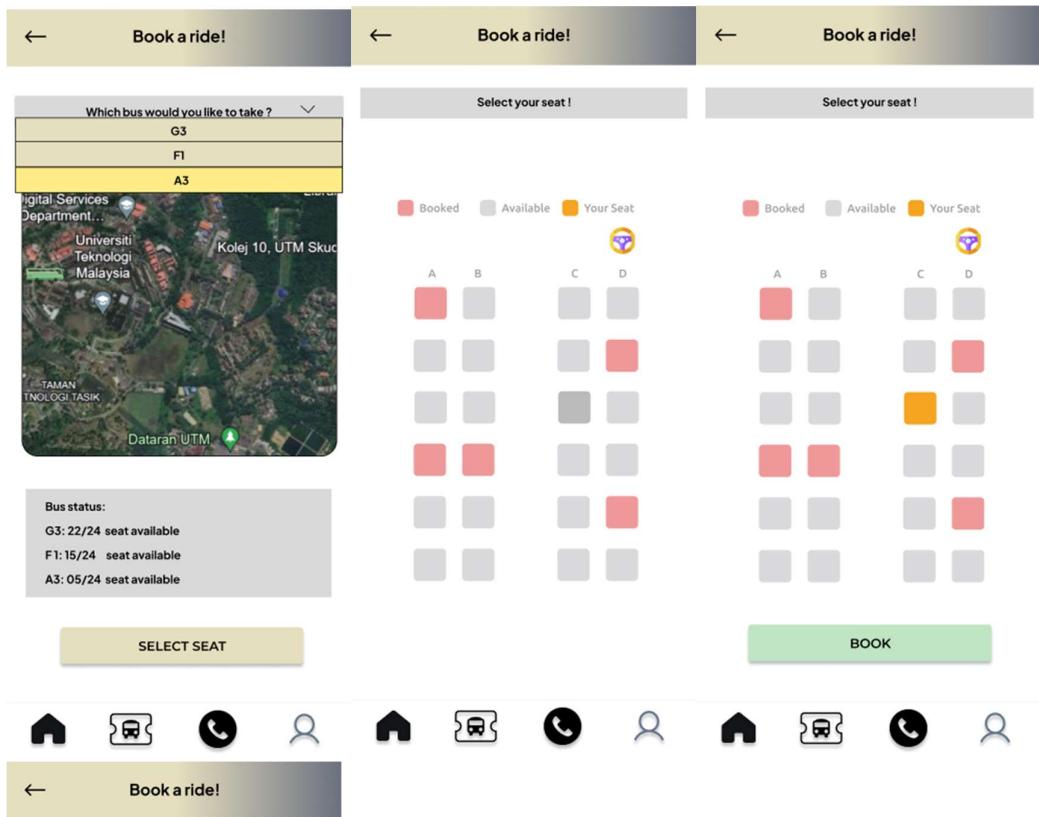
Description: First of all, our user need to select their desired pick-up point, this help us to notify our driver then they know our users are waiting for their bus at which specific bus stop.



Description: After selecting their pick-up point, they need to select their destination and the route from their pick-up point to destination will be shown.



Description: At this stage, our user can select which bus they want to take refer to its availability.



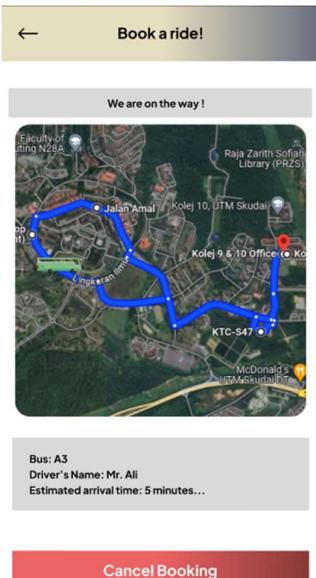
Booking Successful

We have notify our driver to stop at the pick-up point that you selected

[Proceed](#)

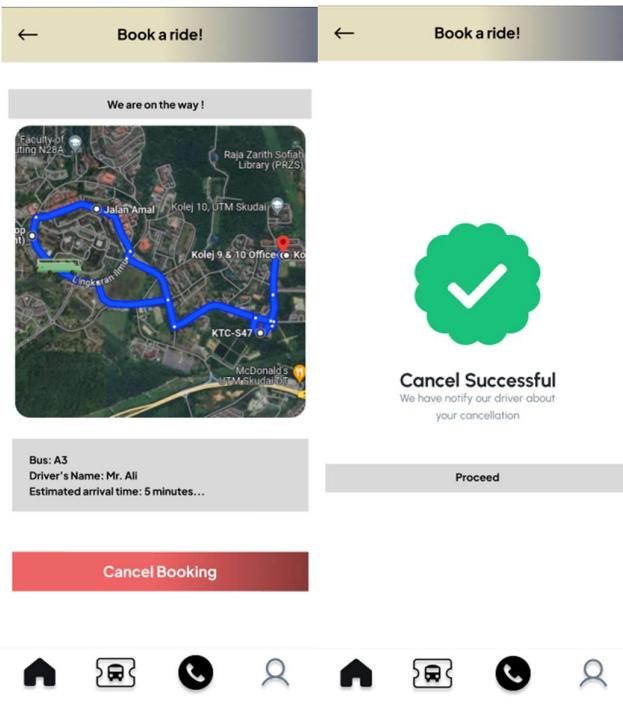


Description: After they select the bus, they can select any available seat in the bus. This will help to reserve a seat for our user. After they select a seat, they will be notified for their successful booking.



Description: Our user will be redirecting to this page after they successfully book a bus. They can see a lot of information from here such as bus name, driver's name and also the estimated arrival time that update time by time.

1.4.2 Cancel booking (input design)



Description: If our user change their mind and wish to cancel the booking, they can just click the ‘Cancel Booking’ icon. Then, they will be notified if their cancellation is successful.

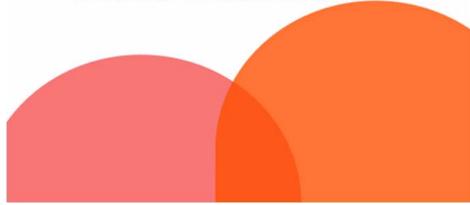
1.5 Emergency report page (input design)



After pressing SOS button,you will be called by the nearest hospital,your informations will be directly deliver to that hospital and utm transportation department

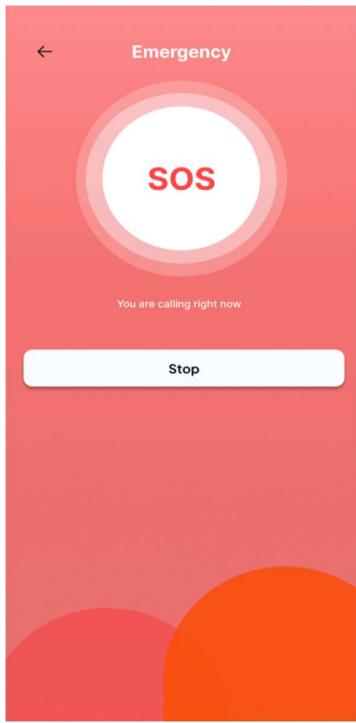


After pressing REPORT button,you will be called by UTM transportation department,your informations will be directly deliver utm transportation department.



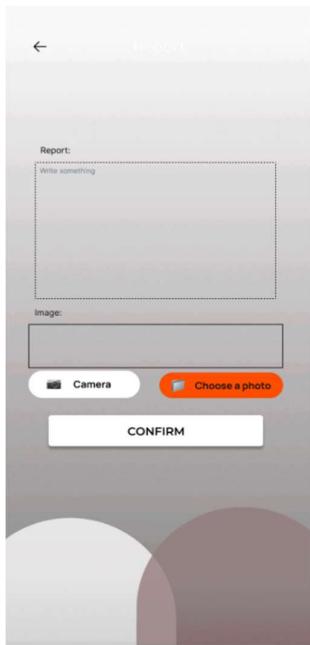
Description: This is the emergency report page. If the user clicks the top button, they will be taken to a page for emergency calls. If the user clicks the bottom button, they will be taken to a page for emergency reports. This report is used to report accidents or any unexpected incidents to UTM transportation management.

1.5.1 emergency call (input design)

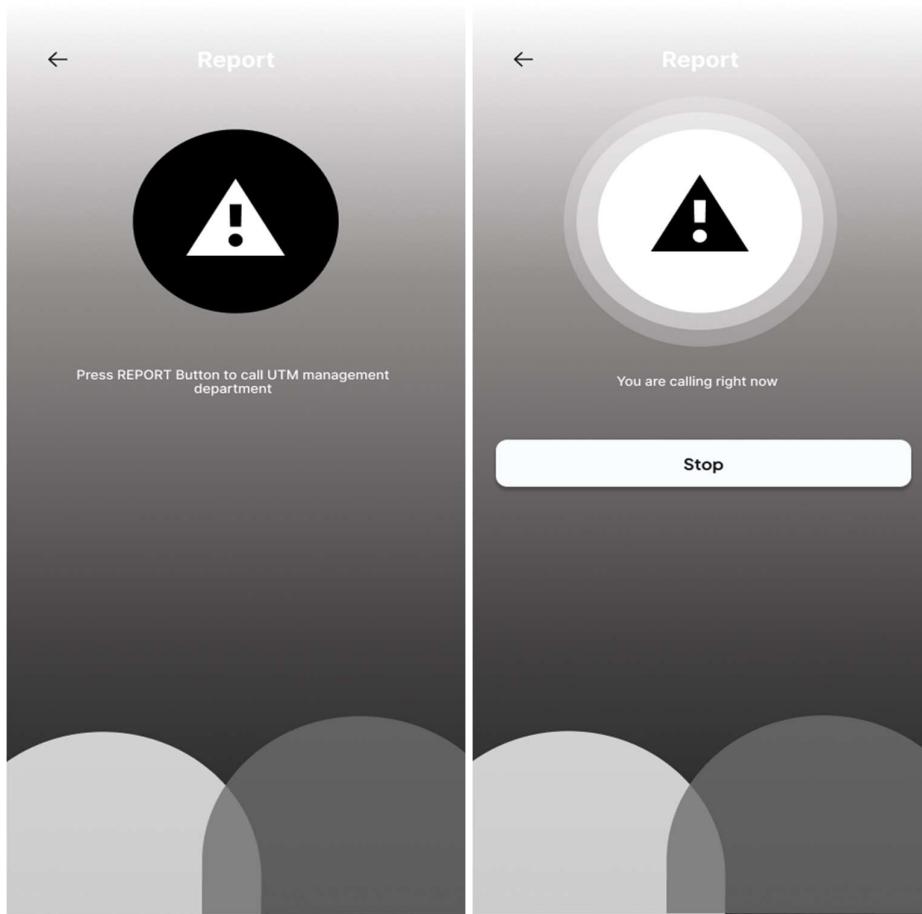


Description: After pressing the emergency call button, the user will be contacted by the nearest hospital. Their information will be directly transmitted to that hospital and the UTM transportation department. To end the call, click the stop button.

1.5.2 emergency report (input design)

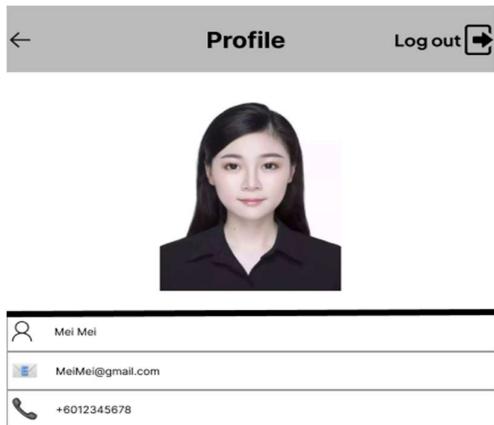


Description: After pressing the emergency report button, users can create a report and submit images as evidence to UTM transportation management.



Description: After confirming the submission of the report, users can press a button to call the UTM management department for further consultation. If they do not wish to make a call, they can simply press the arrow button at the top left.

1.6 profile page(output design)



Description: After pressing the profile page button, users can view their own account information.

2 Bus driver view

2.1 login page

2.1.1 login (input design)



Welcome

Driver ID

Password
 

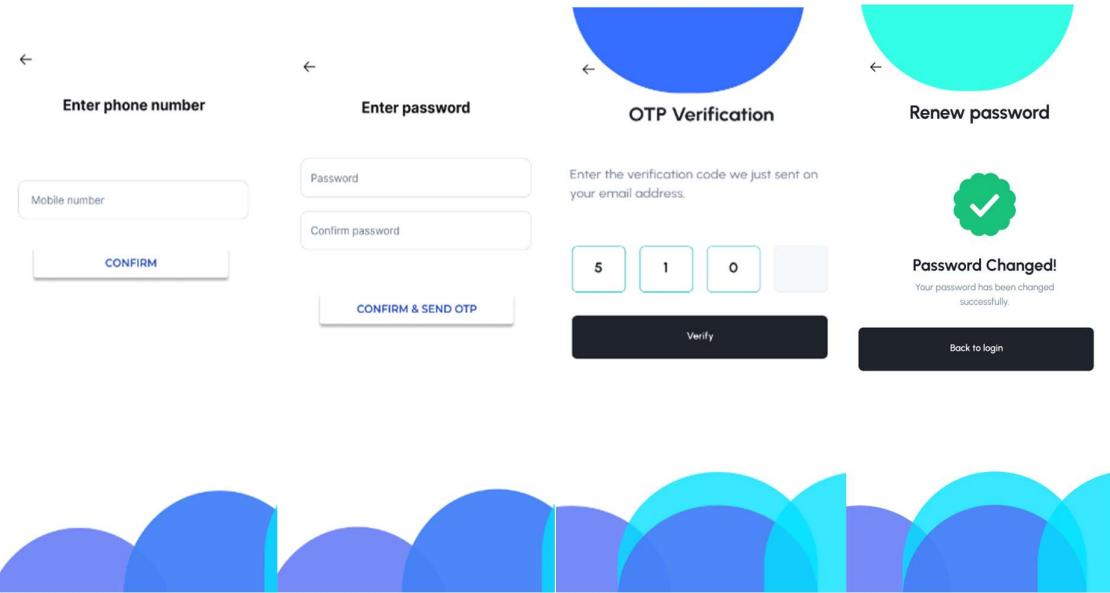
[Forgot Password?](#)

LOG IN



Description: This is the login page for bus drivers. If they forget their password, they can simply press "Forgot Password" to reset it, just like regular users.

2.1.2 forgot password (input design)



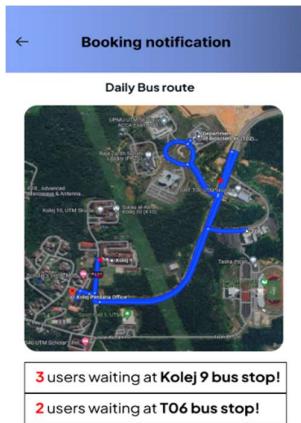
Description: This is the page you will go through to reset your password. After clicking "Back to Login," you will need to re-enter your password and username to log in.

2.2 menu page(output design)



Description: After logging in, drivers will reach this page, which looks similar to the user menu page, with one difference: the second button at the bottom of the page is a "Check Announcement" button. This button allows drivers to see how many users have booked a ride and their locations. The last button is the profile page button, which, when pressed, allows drivers to view their information and submit leave requests.

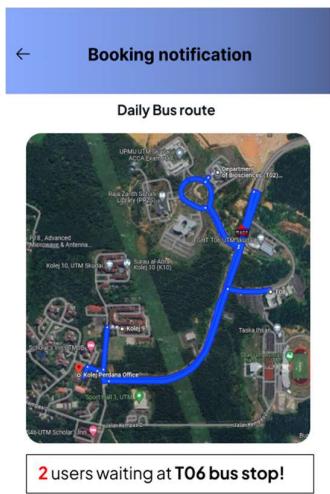
2.3 booking notification(output design)



Description: After pressing the notification button, drivers can see how many users have booked at a certain bus stop.

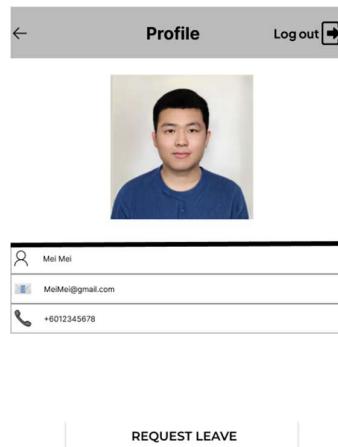


Description: When the users are in the bus, then it will shows users is on board.



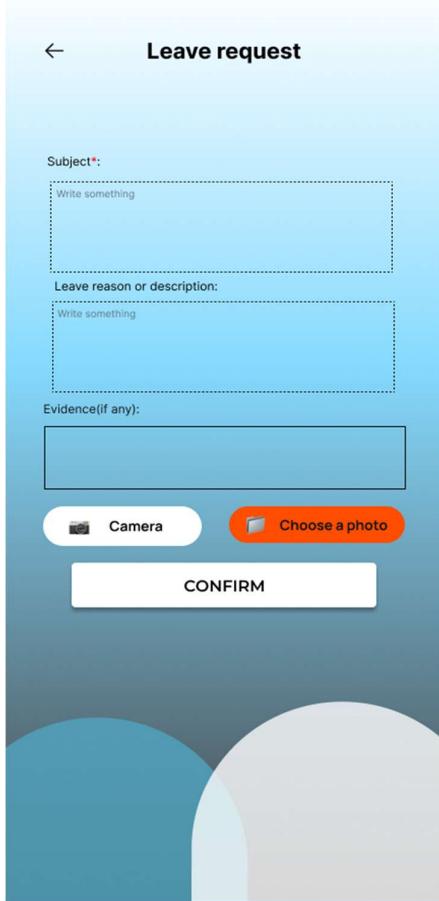
Description: After users gets off the bus, the notification will be deleted automatically.

2.4 profile and leave request page(output design)



Description: This is the profile page. Below the information, there is a "Request Leave" button. After the driver presses it, they can request to take leave.

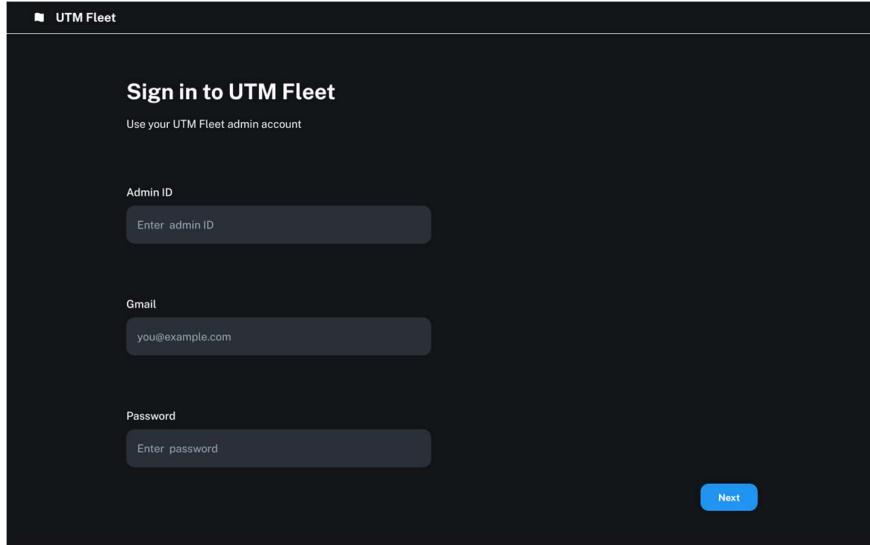
2.4.1 leave request page(input design)



Description: This is the leave request page. Drivers can write subject and a reason or description for their leave and provide evidence as proof. They can then submit it by pressing the "Confirm" button. After pressing "Confirm," the data will be delivered to the management.

3 Management view

3.1 login page(input design)



The image shows a dark-themed login interface for 'UTM Fleet'. At the top, it says 'Sign in to UTM Fleet' and 'Use your UTM Fleet admin account'. There are three input fields: 'Admin ID' with placeholder 'Enter admin ID', 'Gmail' with placeholder 'you@example.com', and 'Password' with placeholder 'Enter password'. A blue 'Next' button is located at the bottom right.

Description: This is the login page for management administrators. After entering all their information and pressing "Next," they will be taken to a page where they can see leave requests from drivers.

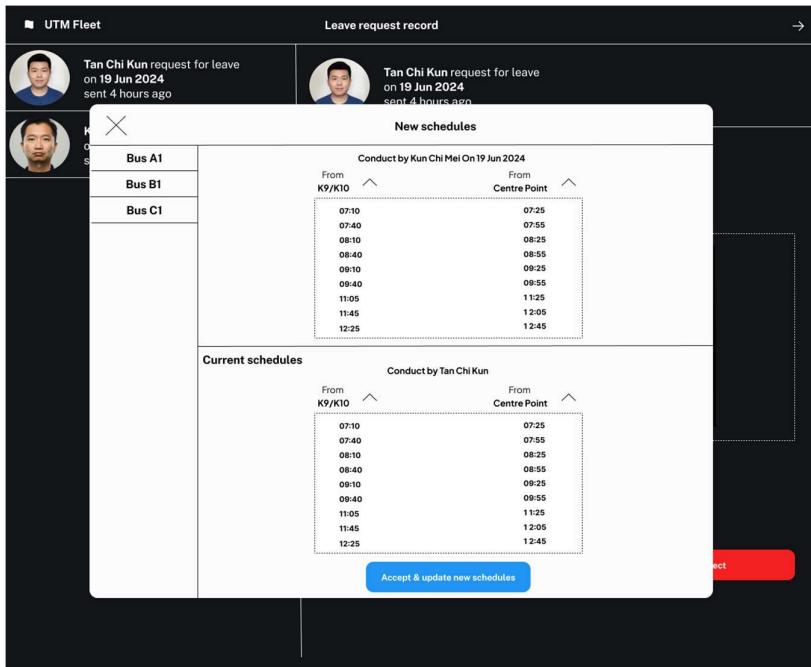
3.2 leave request record(output design)

Leave request record	
	Tan Chi Kun request for leave on 19 Jun 2024 sent 4 hours ago
	Kun Chi Mei request for leave on 20 Jun 2024 sent 4 hours ago

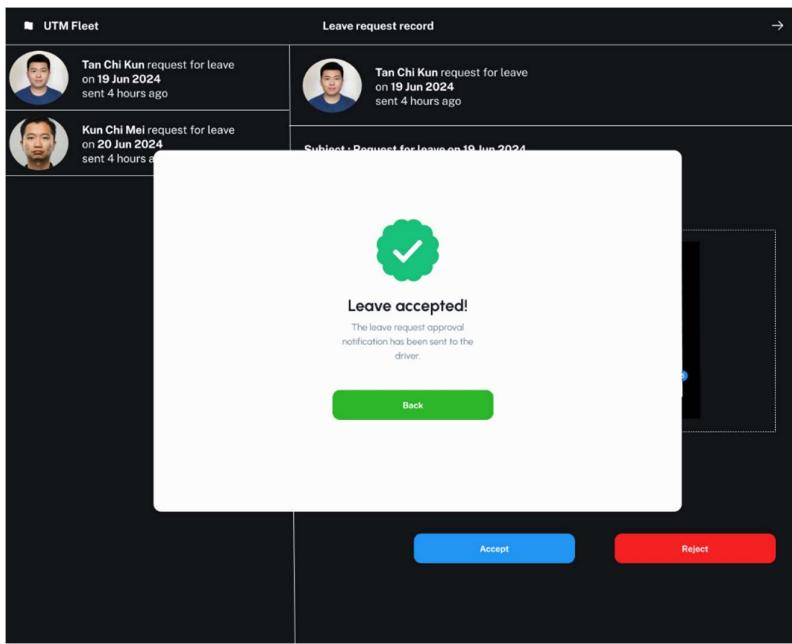
Description: This page is used to view information about driver leave requests. On the left side of the page, administrators can see the driver's name, the date they sent the leave request, and how long ago they sent it. By clicking on any of these entries, administrators can view more details such as evidence and descriptions of the leave request.

UTM Fleet	Leave request record
 Tan Chi Kun request for leave on 19 Jun 2024 sent 4 hours ago	 Tan Chi Kun request for leave on 19 Jun 2024 sent 4 hours ago
 Kun Chi Mei request for leave on 20 Jun 2024 sent 4 hours ago	<p>Subject : Request for leave on 19 Jun 2024</p> <p>Reason : Fever</p> <p>Evidence:</p> <div style="border: 1px solid #ccc; padding: 10px; width: fit-content; margin: auto;"></div> <p>Generate new timetable</p> <p>Accept Reject</p>

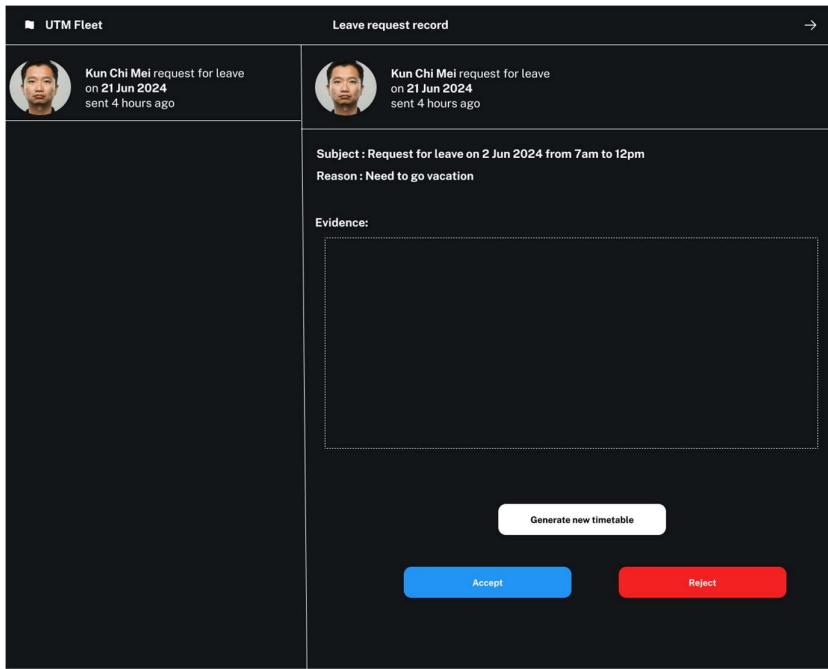
Description: After clicking on any section on the left side, administrators can view the descriptions/reasons for the leave request and the evidence. Below this information, there are three buttons: The first button is to generate a new timetable. For example, if Tan Chi Kun asks for leave on 20 June 2024, the computer will calculate a new bus timetable that avoids any time conflicts based on the given situation. Administrators can directly click the "Accept" button to accept the leave request. The leave request approval notification will then be sent to the driver. If the administrator wants to reject the leave request, they can click the "Reject" button. The leave request rejection notification will then be sent to the driver.



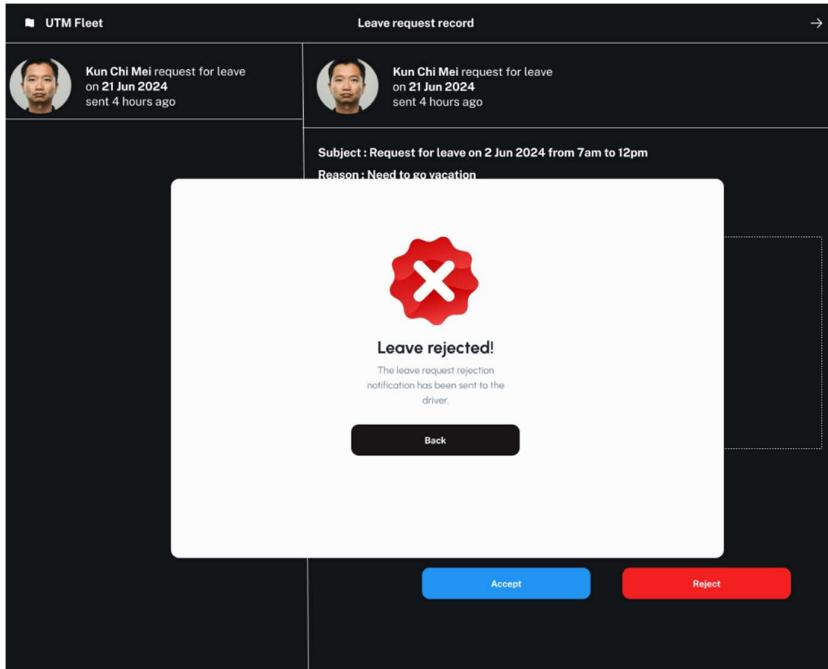
Description: After pressing "Generate New Timetable," if the administrator accepts the new schedules, they can click the "Accept & Update New Schedules" button. The leave request approval notification will then be sent to the driver.



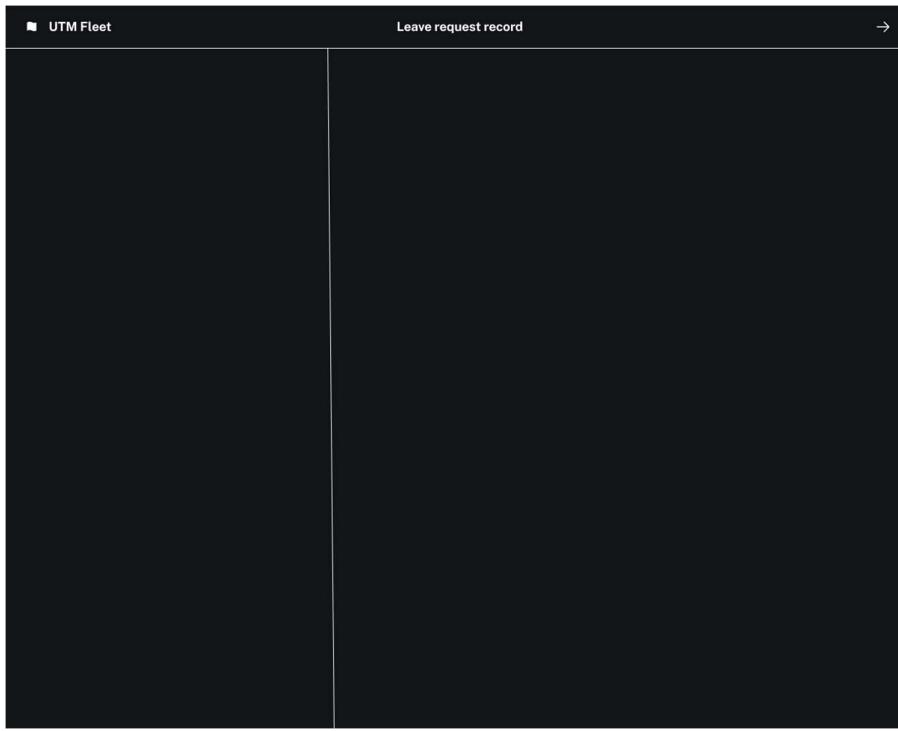
Description: After clicking the "Accept" or "Accept & Update New Schedules" button, a pop-up message will appear to inform the administrator that the leave has been accepted. They can click the "Back" button to return to the main page, and this leave request will be deleted automatically.



Description: After clicking the "Back" button, the previous leave request is deleted.



Description: If the administrator clicks the "Reject" button, a pop-up message will appear to inform them that the leave has been rejected. They can click the "Back" button to return to the main page, and this leave request will be deleted automatically.

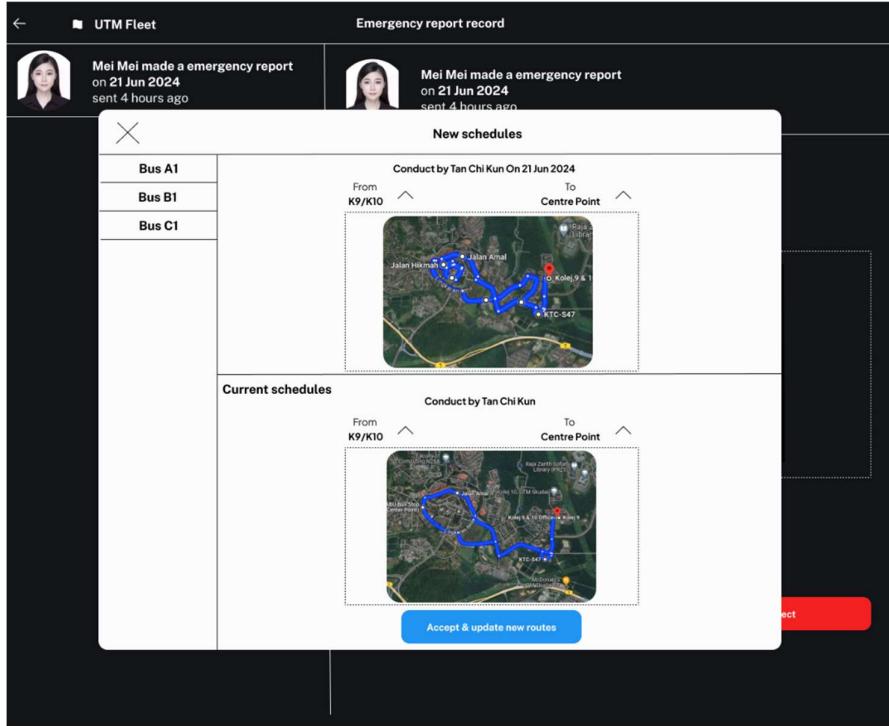


Description: This is the next page of the website if the admin presses the arrow button at the top right corner. This is the emergency report record page.

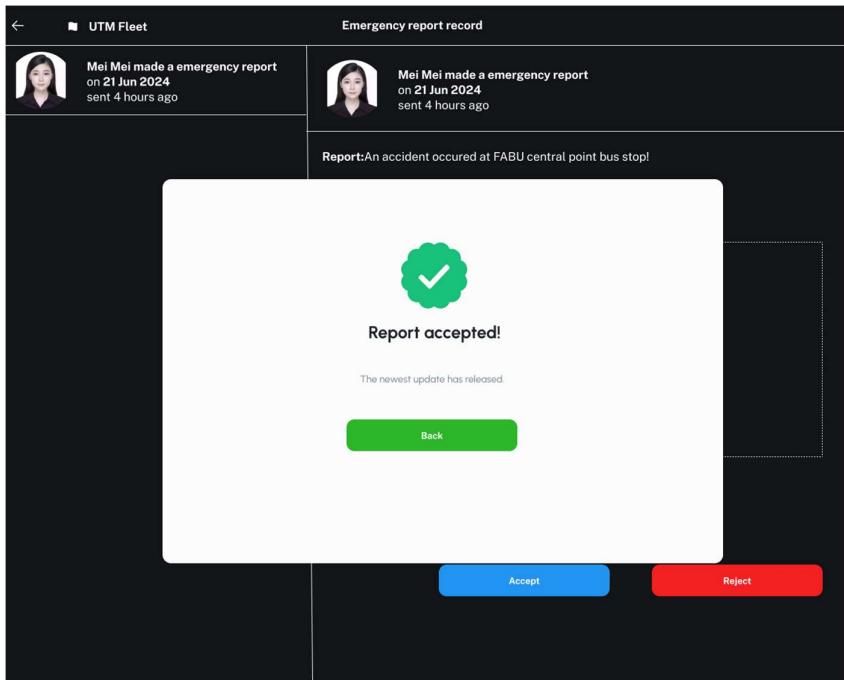
3.3 Emergency report record page(output design)

Description: On the left side, you can see who made a report and on what date, as well as how long ago it was sent. On the right side, there are details of the report, including the report

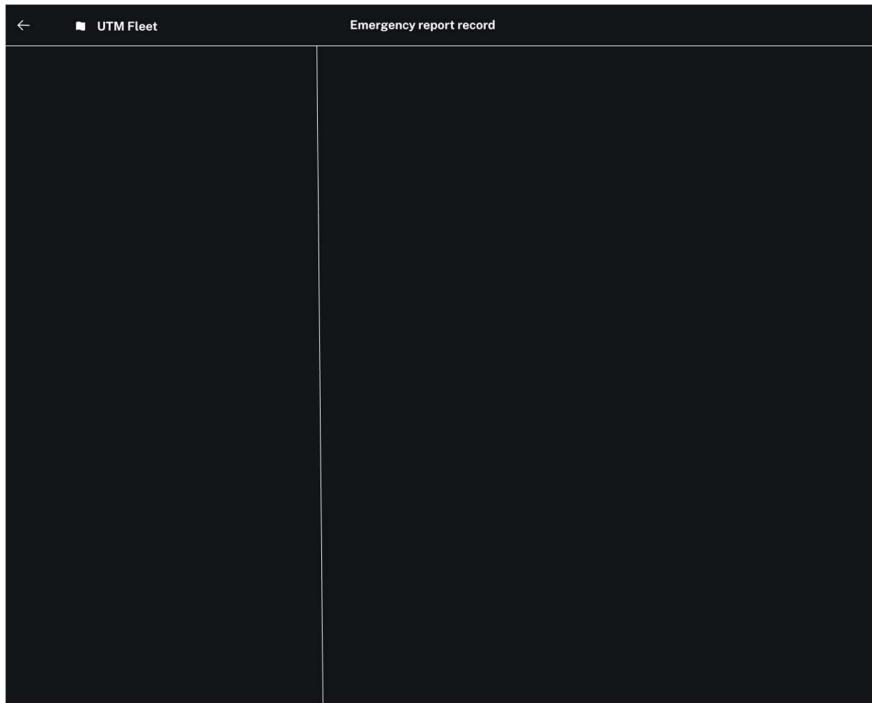
description and the evidence. At the bottom, there are three buttons. The "Generate New Route" button allows the administrator to let the computer generate a new route based on the situation given. The "Accept" and "Reject" buttons are used to simply approve or reject the report.



Description: After the admin presses the "Generate New Route" button, they can view the new route generated by the computer. They can check if it is acceptable, and if so, they can click "Accept & Update New Routes" to update the routes.



Description: After pressing the "Accept & Update New Routes" or "Accept" button, a window will pop up to inform the administrator that the report has been accepted and the new update has been released.



Description: After approval or rejection of a report, the record will be deleted.

Prototype link: <https://www.figma.com/design/rteK9kJbBGfiRVEVLqEgz/sad?node-id=0-1&t=uPmMRavtg2DVgexX-1>

Demonstration video youtube link: <https://www.youtube.com/watch?v=l3oC58JzYtU>

9.0 SUMMARY OF THE PROPOSED SOLUTION

The current system is commonly used by manual and it is very inconvenient for both parties, drivers and users. They have their own website which is called Vehicle Reservation Management System, however there are some comments about them and mostly from students who are regular customers in this situation. Therefore, some features can be added to improve the quality of the system:

- Live tracking and updating current location.
- Notification about something unanticipated happening.
- Database to store personal information of users and drivers.
- Sortation of the buses according to their zone (zone 1 - zone 8).
- Automated update the availability of the seat of all buses.
- Rating and Feedback section.
- Booking system for users inside UTM.
- Emergency button.
- Display the driver's name and contact information according to the buses.

Incorporating these features will transform UTM's transportation system into one that is more efficient, reliable, and user-friendly. The enhancements will significantly benefit not only the users and drivers but will also bolster UTM's reputation. Users will experience a seamless and more transparent booking process, while drivers will have a better-managed schedule, leading to an overall smoother operation.

Furthermore, the introduction of such advanced features will allow the department to confidently promote their service to outsiders. The unique capabilities and superior user experience provided by this system will set it apart from others, making it an attractive option for potential users. By offering a transportation system that combines convenience, safety, and reliability, UTM can ensure satisfaction across the board and establish a strong, competitive edge in the market.