



AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH (AIUB)

FACULTY OF SCIENCE & TECHNOLOGY

Object Oriented Programming 2

Fall 2023-2024

Section: L

Project Name

Bus Management System (Vovo)

Supervised By

Jahid Hassan

Submitted By

Name	ID	Contribution
1. Basharul Alam Mazu	22-47903-2	Admin
2. Shraboni Biswas Naboni	22-47701-2	Customer
3. Md. Tanjim Rahman	22-47647-2	Employee

Date of Submission: 31st December, 2023

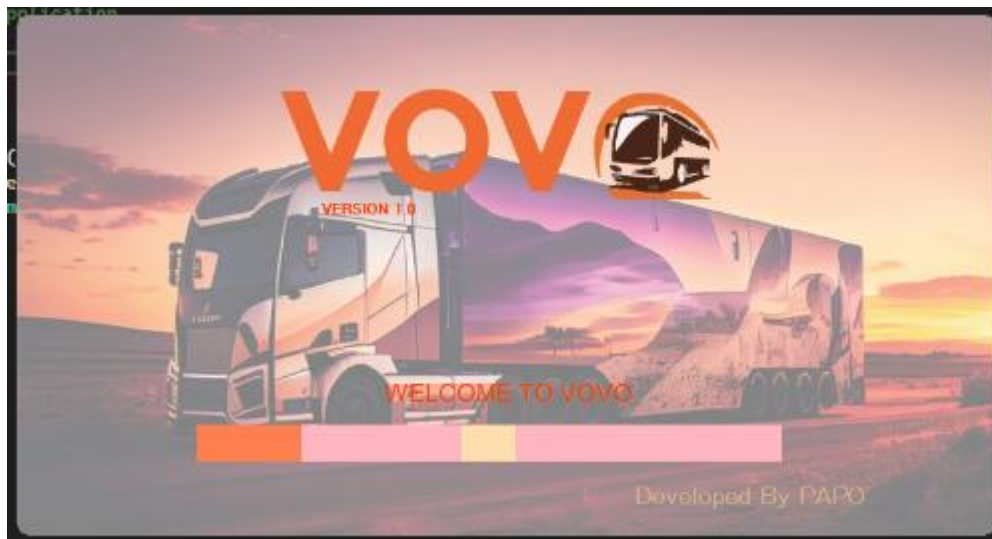
User Scenario

Vovo- The project is about a Bus management system. In this Bus management system, There are three types of users: admin, employee, and customer. User type has user information. User type consists of ID and type. User information includes ID, name, email, address, phone number, gender, nationality, date of birth. A user type can have multiple users. A user can have only one user type. User Info's are collected by an employee. Employee includes ID, name, and joining date. There are different types of functional categories. Each category is divided into various subcategories such as driver, conductor, and supervisors. Every subcategory includes ID, name, and their own unique attributes.

Employees can handle some categories and subcategories. A subcategory can have one or many functionalities. Employees can manage routes, boarding points purchase tickets. A customer can create, edit, update their profile and also verify their phone number and email with functional benefits. Admin can handle further categories and subcategories as well as recruit and manage every category of employees along with the customers.

Form Images

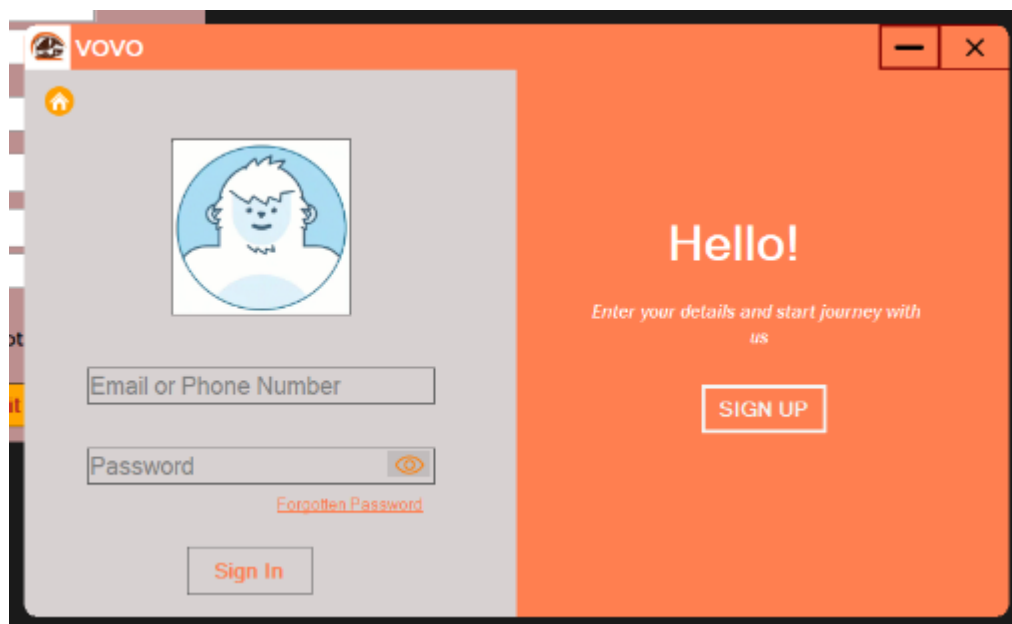
Loading form:



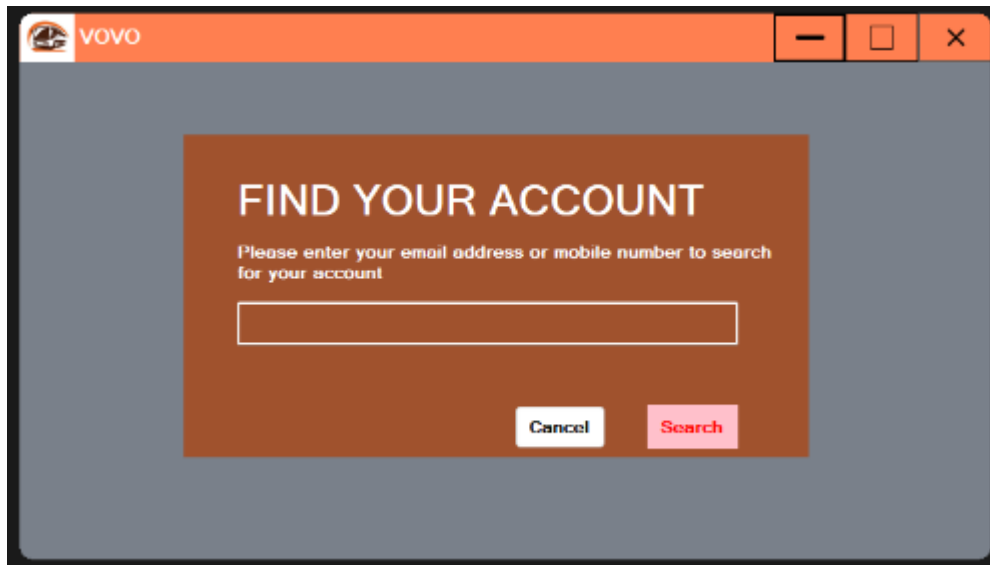
Home form:



Customer Sign in form:

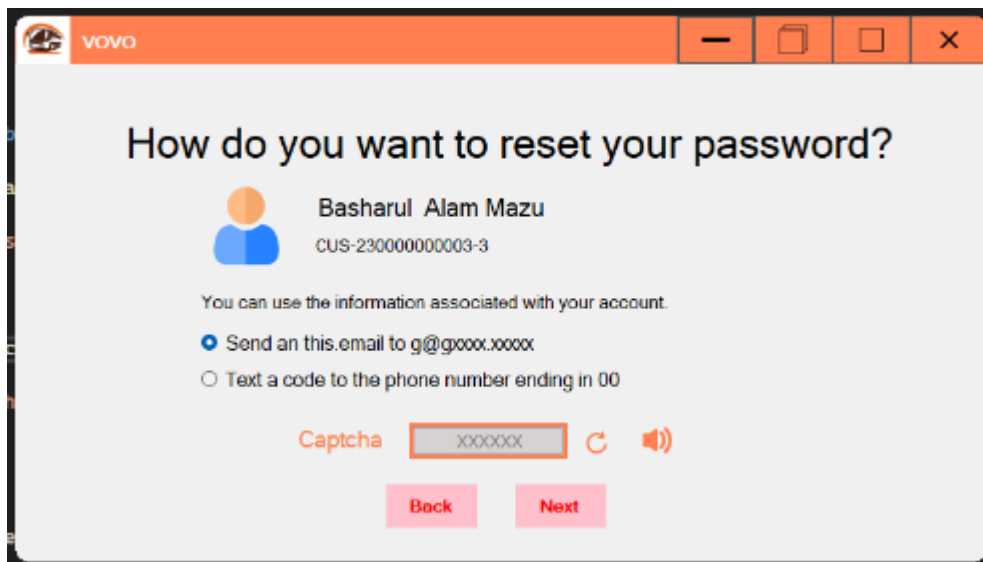
A screenshot of the Customer Sign in form. The window has an orange title bar with the VOVO logo and standard window controls. The form is divided into two main sections. On the left, a grey panel contains a home icon, a circular profile picture placeholder with a cartoon character, and two input fields: "Email or Phone Number" and "Password". Below the password field is a "Forgotten Password" link and a "Sign In" button. On the right, an orange panel displays the text "Hello!" followed by the instruction "Enter your details and start journey with us" and a "SIGN UP" button.

Customer forgot password form:



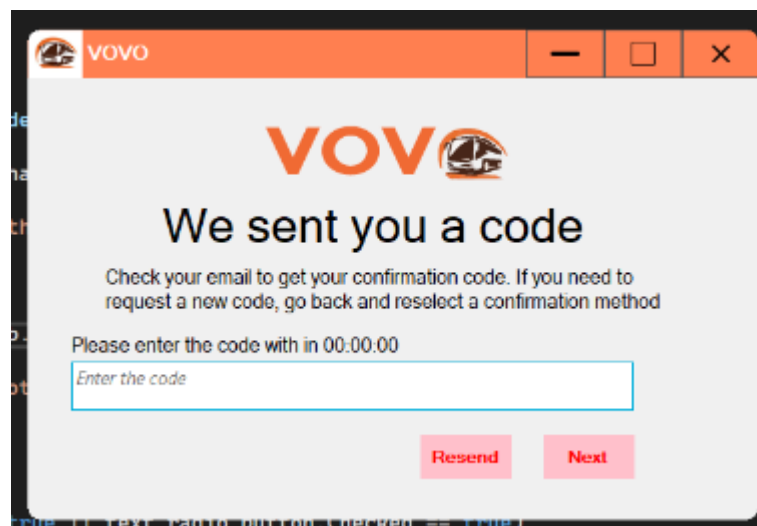
The screenshot shows a web browser window with the VOVO logo in the top left corner. The main content area has a dark blue background. In the center, there is a white rectangular box with the title "FIND YOUR ACCOUNT" in bold black text. Below the title, it says "Please enter your email address or mobile number to search for your account". There is a single-line text input field. At the bottom of the box, there are two buttons: "Cancel" and "Search".

Customer resend verification for password:



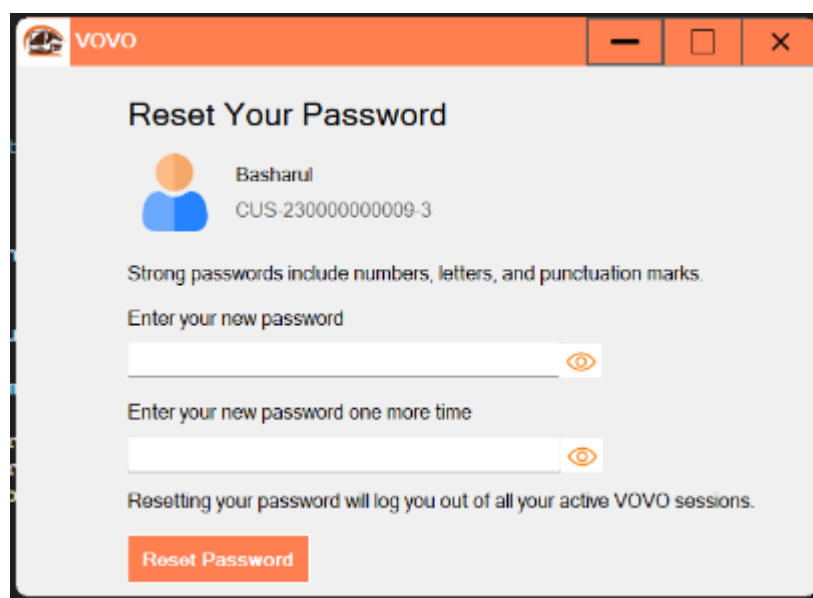
The screenshot shows a web browser window with the VOVO logo in the top left corner. The main content area has a light gray background. The title "How do you want to reset your password?" is at the top. Below it, there is a user profile section with a blue and orange circular avatar, the name "Basharul Alam Mazu", and the ID "CUS-230000000003-3". Below the profile, it says "You can use the information associated with your account." There are two radio button options: "Send an this.email to g@gxxx.xxxx" (which is selected) and "Text a code to the phone number ending in 00". Below the options, there is a "Captcha" label, a text input field containing "xxxxxx", a refresh icon, and a speaker icon. At the bottom, there are two buttons: "Back" and "Next".

Customer verification OTP for password:



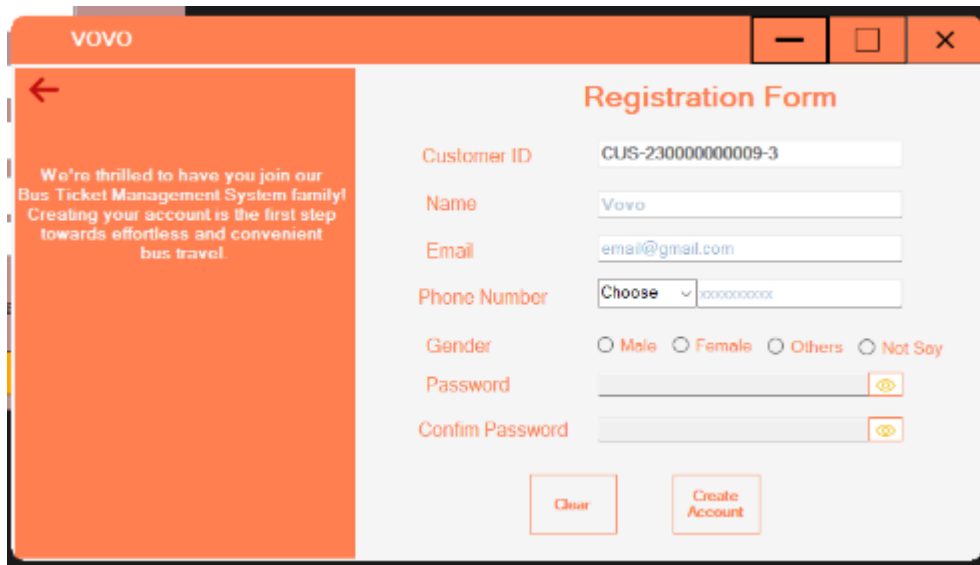
A screenshot of a web browser window displaying the VOVO login interface. The browser's title bar shows the VOVO logo and standard window controls. The page has a light gray background. At the top, the VOVO logo is centered. Below it, the heading "We sent you a code" is displayed in a large, bold, black font. Underneath the heading, a message states: "Check your email to get your confirmation code. If you need to request a new code, go back and reselect a confirmation method". A timer indicates "Please enter the code with in 00:00:00". Below the timer is a text input field with the placeholder text "Enter the code". At the bottom right of the form area, there are two red buttons: "Resend" and "Next".

Customer Reset password form:



A screenshot of a web browser window displaying the VOVO "Reset Your Password" form. The browser's title bar shows the VOVO logo and standard window controls. The page has a light gray background. At the top, the heading "Reset Your Password" is displayed in a bold, black font. Below the heading is a user profile section showing a blue and orange circular avatar, the name "Basharul", and the user ID "CUS-230000000009-3". A message states: "Strong passwords include numbers, letters, and punctuation marks." Below this is a text input field with the placeholder text "Enter your new password" and an eye icon to the right. Below the first input field is another text input field with the placeholder text "Enter your new password one more time" and an eye icon to the right. At the bottom of the form area, there is a red button labeled "Reset Password".

Customer Sign up from:

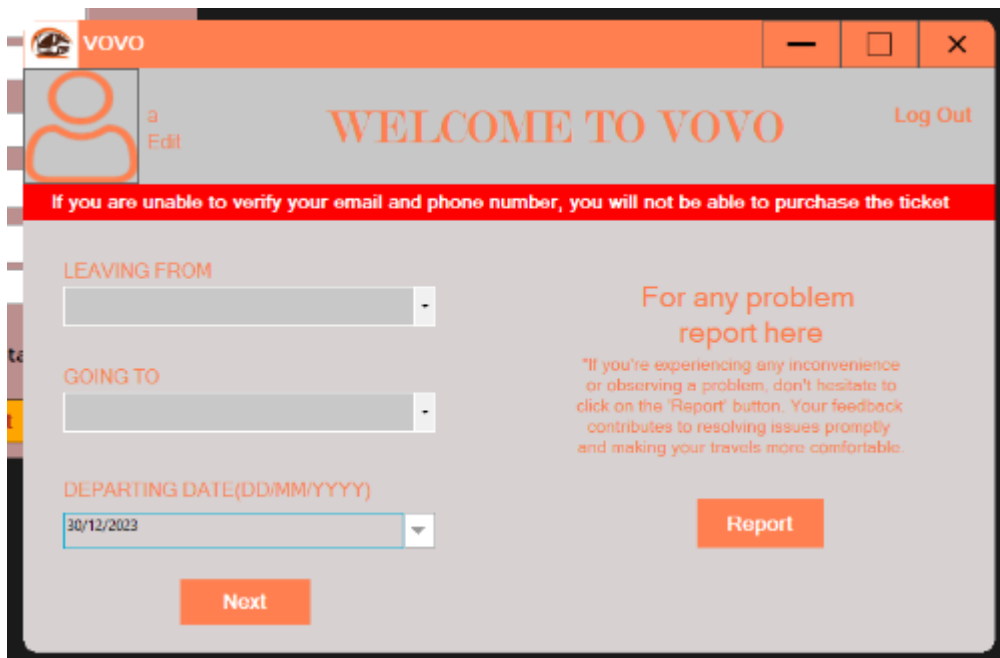


The registration form is displayed in a window titled "VOVO". On the left, a blue sidebar contains a welcome message: "We're thrilled to have you join our Bus Ticket Management System family! Creating your account is the first step towards effortless and convenient bus travel." The main area is titled "Registration Form" and contains the following fields:

- Customer ID: CUS-230000000009-3
- Name: Vovo
- Email: email@gmail.com
- Phone Number: Choose (dropdown) followed by a masked input field (xxxxxxxx)
- Gender: Radio buttons for Male, Female, Others, and Not Say
- Password: Input field with a visibility toggle (eye icon)
- Confirm Password: Input field with a visibility toggle (eye icon)

At the bottom right, there are two buttons: "Clear" and "Create Account".

Customer Dashboard form:

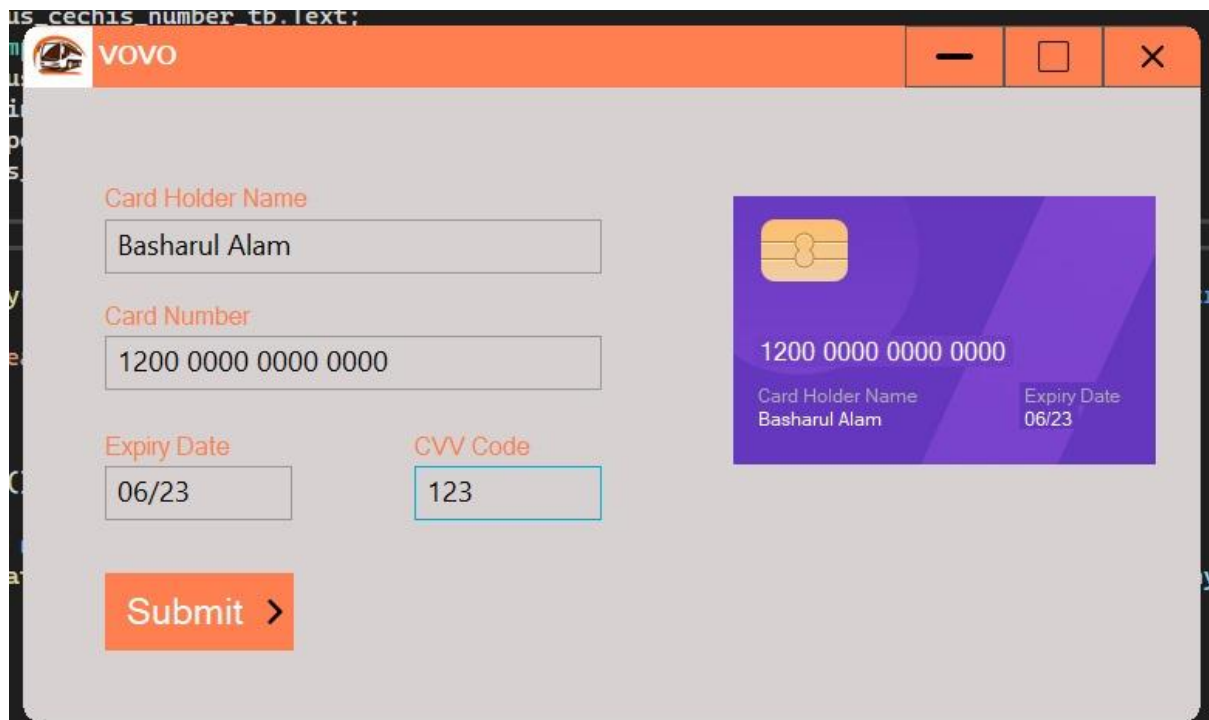


The customer dashboard is displayed in a window titled "VOVO". It features a user profile icon and "a Edit" link on the left, and a "Log Out" link on the right. The main heading is "WELCOME TO VOVO". A red banner below the heading reads: "If you are unable to verify your email and phone number, you will not be able to purchase the ticket".

The dashboard includes the following sections:

- LEAVING FROM:** A dropdown menu.
- GOING TO:** A dropdown menu.
- DEPARTING DATE(DD/MM/YYYY):** A date picker showing 30/12/2023.
- For any problem report here:** A section with a message: "If you're experiencing any inconvenience or observing a problem, don't hesitate to click on the 'Report' button. Your feedback contributes to resolving issues promptly and making your travels more comfortable." Below this is a "Report" button.
- Next:** A button at the bottom left.

Customer Updating their card info:



The screenshot shows a web browser window titled "VOVO" with a form for updating card information. The form includes input fields for Card Holder Name (Basharul Alam), Card Number (1200 0000 0000 0000), Expiry Date (06/23), and CVV Code (123). A "Submit" button with a right arrow is at the bottom left. On the right side, there is a visual representation of a purple credit card with the same details: Card Number 1200 0000 0000 0000, Card Holder Name Basharul Alam, and Expiry Date 06/23.

is_cechis_number_tb.text:

VOVO

Card Holder Name
Basharul Alam

Card Number
1200 0000 0000 0000

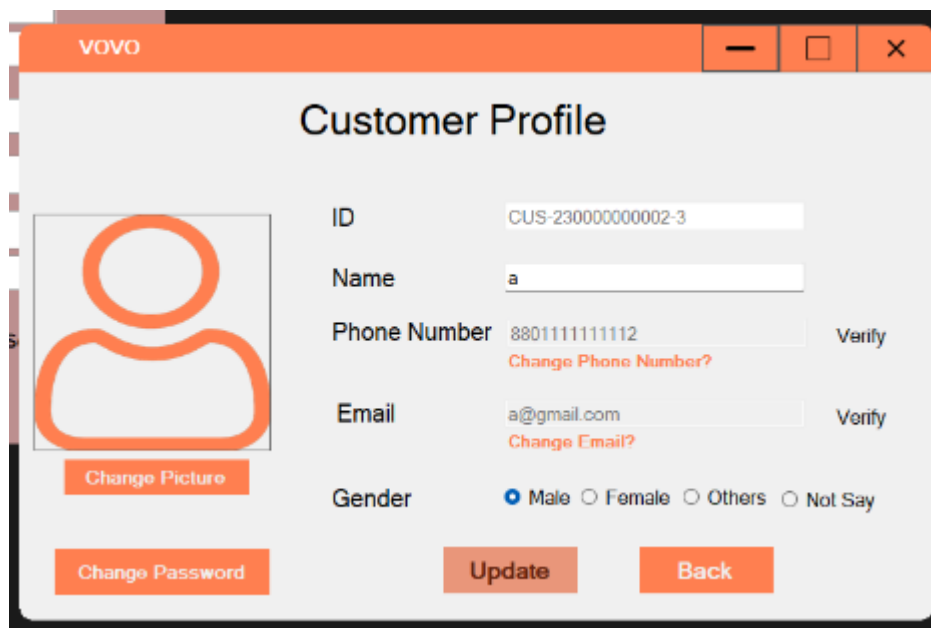
Expiry Date
06/23

CVV Code
123

Submit >

1200 0000 0000 0000
Card Holder Name
Basharul Alam
Expiry Date
06/23


Customer profile update form:



The screenshot shows a web browser window titled "VOVO" with a "Customer Profile" form. The form includes a profile picture placeholder with a "Change Picture" button below it. The profile details are as follows: ID (CUS-2300000000002-3), Name (a), Phone Number (8801111111112) with a "Verify" link and "Change Phone Number?" link, Email (a@gmail.com) with a "Verify" link and "Change Email?" link, and Gender (Male selected, with options for Female, Others, and Not Say). At the bottom, there are buttons for "Change Password", "Update", and "Back".

VOVO

Customer Profile


Change Picture

ID CUS-2300000000002-3

Name a

Phone Number 8801111111112 Verify
Change Phone Number?

Email a@gmail.com Verify
Change Email?

Gender ☒ Male ☐ Female ☐ Others ☐ Not Say

Change Password Update Back

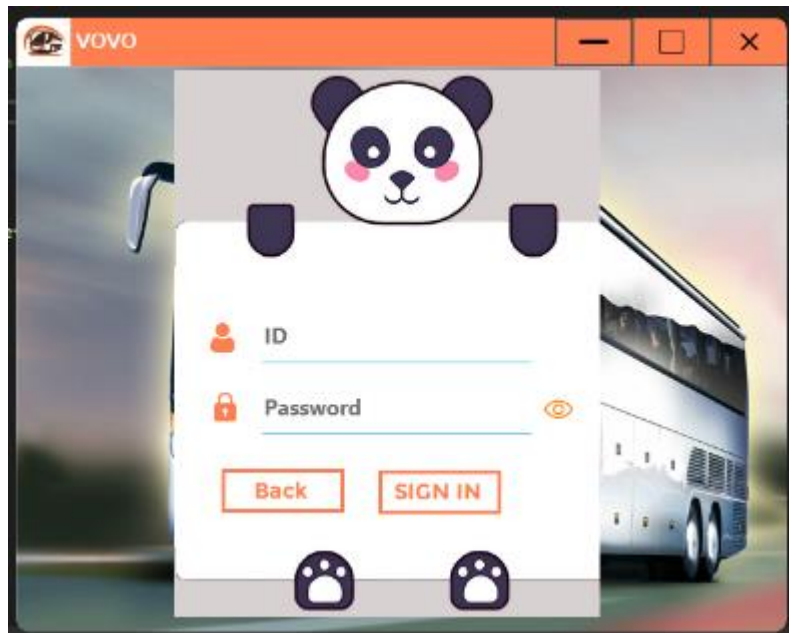
Customer verifying contact information:

The screenshot shows a web browser window with the VOVO logo in the top left corner. The main content area is titled "Customer Profile". A modal dialog box is open in the center, titled "Enter your confirmation code". The modal contains the following text: "We sent a SMS with your confirmation code to +880 1813890622" and "You can request verification code within 01:26 minutes". Below this text is a text input field labeled "Enter conformation code" (note the typo in the label). To the right of the input field are two buttons: "Next" and "Resend". At the bottom of the modal are two buttons: "Change Password" and "Update". At the bottom of the main page are three buttons: "Change Password", "Update", and "Back". On the right side of the page, there are three links: "Verified", "Verify", and "Not Say".

Customer change password:

The screenshot shows a web browser window with the VOVO logo in the top left corner. The main content area is titled "Customer Profile". A modal dialog box is open in the center, titled "Change password". The modal contains the following text: "Your password must be at least 6 characters and should include a combination of numbers, letters and special characters (!\$@%)". Below this text are three text input fields: "Current password", "New password", and "Re-type password". Each input field has a toggle icon (an eye) to the right of it. To the right of the input fields are two buttons: "Next" and "Resend". At the bottom of the modal are two buttons: "Change Password" and "Update". At the bottom of the main page are three buttons: "Change Password", "Update", and "Back". On the right side of the page, there are three links: "Verified", "Verify", and "Not Say".

Employee login form:



Admin MetroForm:

Quiz

Date Of Birth
yyyy-MM-dd

Phone Number
[Dropdown] [Input]

Address
[Input]

Gender
☐ Male ☐ Female ☐ Others

Nationality
[Dropdown]

NID Number
[Input]

ID	Name	Date Of Birth	Address	PH	NU
ADM-230001-3	a		1		
ADM-230001-2	Admin		Dhaka		

Admin MetroForm:

The Admin MetroForm interface consists of a main registration form and a modal dialog.

Main Form Fields:

- Gender: ☒ Male ☐ Female ☐ Others
- Nationality: BAN
- NID Number: 78451221
- Experiences: 1
- Company Name: (dropdown menu)

Buttons: Search, New, Refresh, Back (highlighted in orange), Register, Delete.

Modal Dialog: Enter Admin ID. It contains a text input field and a Search button.

Table:

ID	Name	Date Of Birth	Address	Phone Number
1			Dhaka	

Employee MetroForm:

The Employee MetroForm interface is divided into two main sections: Information and Actions.

Information Section:

- ID:** (highlighted in green)
- Name:** (text input)
- Email:** (text input)
- Date Of Birth:** (text input)
- Phone Number:** (text input with a dropdown menu)
- Address:** (text input)
- Gender:** ☐ Male ☐ Female ☐ Others

Actions Section:

- Search:** (text input with a search icon)
- Actions:** (+, Add, Delete, Refresh icons)

Table:

ID	Name	Email	Phone Number	NID	Experience
EMP-230003-3	1	a@gmail.com	1813890622		
EMP-230002-3	1	b@gmail.com	1813890622		
EMP-230001-3	1	b@gmail.com	1813890622		

Customer MetroForm:

Customer Manager View

ID

CUS-230000000012-3

Name

Name

Email

Enter Your Email

Phone Number

Chose

Enter phone number

Password

Entre your Password

Gender

☐ Male ☐ Female ☐ Others ☐ Not say

ADD

Delete

Back

SHEARCH

Refresh

ID	Name	Email
CUS-230000000001-3	Basharul	b@gmail.com
CUS-230000000002-3	Basharul Alam	a@gmail.com
CUS-230000000003-3	d1	g@gmail.com
CUS-230000000004-3	admin	admin@gmail.com
CUS-230000000005-3	adcus	adcus@gmail.com
CUS-230000000006-3	vovo	vovo@gmail.com
CUS-230000000007-3	VOVO	VOVO@gmail.com
CUS-230000000008-3	v	v@gmail.com
CUS-230000000009-3	Basharul	basharulalam6@g...
CUS-230000000010-3	Basharul	basharulalam6@g...
CUS-230000000011-3	rezwan	rezwan123@gmail...

Customer MetroForm:

Customer Manager View

ID

ID

Email OR Phone

Enter Email or Phone Number

Find

ADD

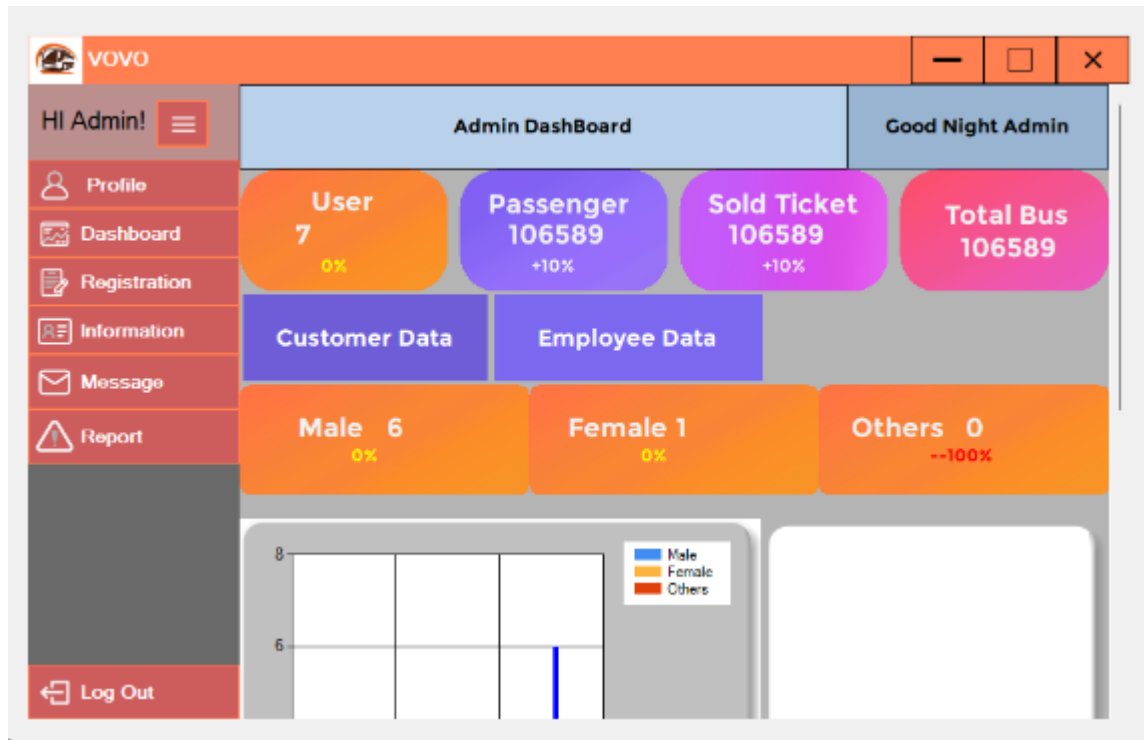
Delete

Back

SHEARCH

Refresh

Admin Dashboard:



Admin Profile form:

The Admin Profile form for VOVO displays the following information:

- Admin Profile:** Name: Admin, ID: ADM-230001-2, and a "Change Password" button.
- Personal Information:** DOB: 15/01/1990, Email: admin@gmail.com, Phone Number: 1813890622, Gender: 1, and Nationality: BAN.
- Sidebar Menu:** Profile, Dashboard, Registration, Information, Message, and Report.
- Log Out** button at the bottom of the sidebar.

Admin update password form:

The screenshot shows the VOVO Admin interface. On the left is a sidebar with a menu: Profile, Dashboard, Registration, Information, Message, Report, and Log Out. The main content area displays a 'Change password' modal window. The modal has a title bar with the VOVO logo and a close button. The title is 'Change password'. Below the title is a note: 'Your password must be at least 6 characters and should include a combination of numbers, letters and special characters (!\$@%).'. There are three input fields: 'Current Password', 'New Password', and 'Re-type Password'. Each field has a toggle icon to the right. At the bottom of the modal are two buttons: 'Cancel' and 'Search'.

VOVO

Hi Admin!

Profile

Dashboard

Registration

Information

Message

Report

Log Out

VOVO

Change password

Your password must be at least 6 characters and should include a combination of numbers, letters and special characters (!\$@%).

Current Password

New Password

Re-type Password

Cancel Search

Admin registering an employee form:

The screenshot shows the VOVO Admin interface. On the left is a sidebar with a menu: Profile, Dashboard, Registration, Conductor, Customer, Company, Bus, Employee, Admin, Office, Driver, Supervisor, and Information. The main content area displays the 'Conductor Personal Information' form. The form has a title bar with the VOVO logo and a close button. The title is 'Conductor Personal Information'. There are several input fields: 'ID (Auto)' with a value of 'CON-230002-3', 'Name', 'Email' with a value of 'yourmail@gmail.com', 'Phone Number' with a dropdown menu and a value of '1XXXXXXXXXX', 'Address' with a value of '135/6 South Banasree, Dhaka', 'Gender' with radio buttons for 'Male', 'Female', and 'Others', 'DOB' with a value of 'dd/mm/yyyy', 'Nationality' with a value of 'Bangladeshi', 'NID Number' with a value of 'xxxxxxxxxx', and 'Experience' with a value of '10'. There is a 'Choose a picture' button next to the 'Phone Number' field. At the bottom of the form are two buttons: 'Clear' and 'Next'.

VOVO

Hi Admin!

Profile

Dashboard

Registration

Conductor

Customer

Company

Bus

Employee

Admin

Office

Driver

Supervisor

Information

Conductor Personal Information

ID (Auto) - CON-230002-3

Name

Email yourmail@gmail.com

Phone Number 1XXXXXXXXXX

Address 135/6 South Banasree, Dhaka

Gender ☐ Male ☐ Female ☐ Others

DOB dd/mm/yyyy

Nationality Bangladeshi

NID Number xxxxxxxxxxxx

Experience 10

Choose a picture

Clear Next

Admin recruiting employee:

The screenshot shows the VOVO Admin interface. On the left is a sidebar menu with options: Profile, Dashboard, Registration, Conductor, Customer, Company, Bus, Employee, Admin, Office, Driver, Supervisor, and Information. The main area is titled "Registration Information" and contains a "Personal Information" section. The form fields are as follows:

Field	Value
Name	Basharul Alam
Gender	<input checked="" type="radio"/> Male <input type="radio"/> Female <input type="radio"/> Others
Email	basharulalam6@gmail.
DOB	06/01/2002
Phone Number	1813890522
Nationality	Bangladeshi
Address	Dhaka, Bangladesh
NID Number	451304512
Experience	1

Below the form is a "Change Picture" button and a small profile picture of a person. At the bottom are "Back" and "Next" buttons.

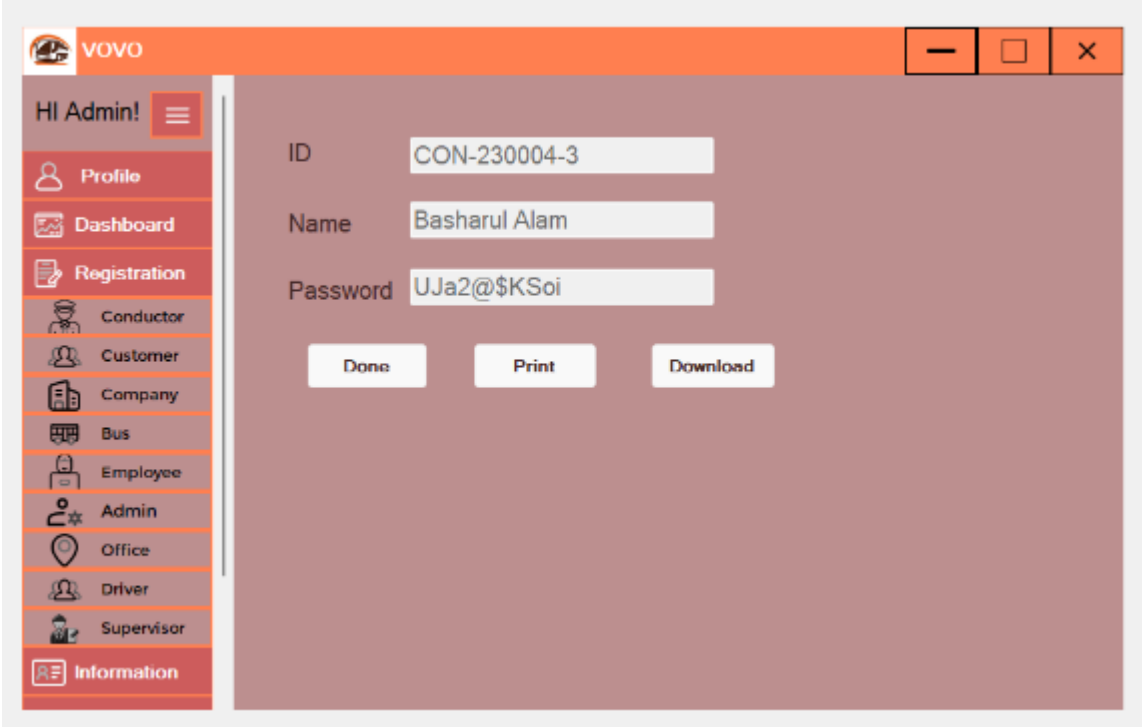
Admin registering educational qualification:

The screenshot shows the VOVO Admin interface. On the left is a sidebar menu with options: Profile, Dashboard, Registration, Conductor, Customer, Company, Bus, Employee, Admin, Office, Driver, Supervisor, and Information. The main area is titled "Educational Qualification" and contains a form for registering educational qualifications. The form fields are as follows:

Field	Value
SSC/Dakhil/Equivalent	
HSC/Alim/Equivalent	
BSc/Diploma/Equivalent	
Institution Name	University
Institution ID/Roll Number	XXXXXX
Degree Name	Bsc
Subject	Computer Science and Engineering
CGPA	4.00

At the bottom are "Back" and "Next" buttons.

Recruited employee information for work:

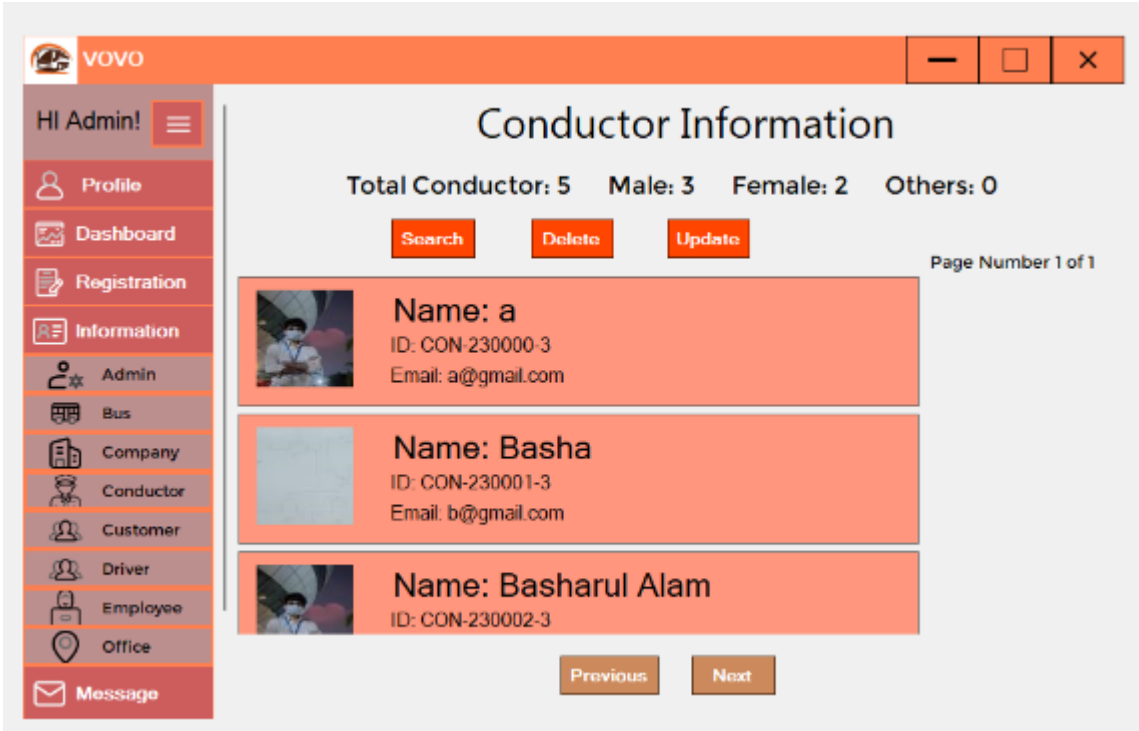


The screenshot shows a web application window titled "VOVO". On the left is a sidebar menu with the user "HI Admin!" and a list of roles: Profile, Dashboard, Registration, Conductor, Customer, Company, Bus, Employee, Admin, Office, Driver, Supervisor, and Information. The main area displays the registration details for an employee:




- ID: CON-230004-3
- Name: Basharul Alam
- Password: UJa2@\$KSoi

Below the fields are three buttons: "Done", "Print", and "Download".

Admin checking Conductor information:



The screenshot shows the "Conductor Information" page in the VOVO system. The sidebar menu is similar to the previous one, but includes a "Message" option at the bottom. The main area displays the title "Conductor Information" and a summary: "Total Conductor: 5 Male: 3 Female: 2 Others: 0". Below this are three buttons: "Search", "Delete", and "Update". The page is labeled "Page Number 1 of 1". A list of conductor information is shown in three rows, each with a profile picture, name, ID, and email:

Profile Picture	Name	ID	Email
	Name: a	ID: CON-230000-3	Email: a@gmail.com
	Name: Basha	ID: CON-230001-3	Email: b@gmail.com
	Name: Basharul Alam	ID: CON-230002-3	

At the bottom of the list are two buttons: "Previous" and "Next".

Admin checking Customer information:

VOVO

HI Admin!

Profile

Dashboard

Registration

Information

Admin

Bus

Company

Conductor

Customer

Driver

Employee

Office

Message

Customer Information

Total Customer: 8 Male: 6 Female: 1 Others: 1

Search Delete Update

Page Number 1 of 1

	Name: Basharul Phone Number: 880 1740717087 Email: b@gmail.com
	Name: a Phone Number: 880 1111111112 Email: a@gmail.com
	Name: d1 Phone Number: 880 1000000000

Previous Next

Admin checking Employee information:

VOVO

HI Admin!

Profile

Dashboard

Registration

Information

Admin

Bus

Company

Conductor

Customer

Driver

Employee

Office

Message

Employee Information

Total Employee: 4 Male: 4 Female: 0 Others: 0

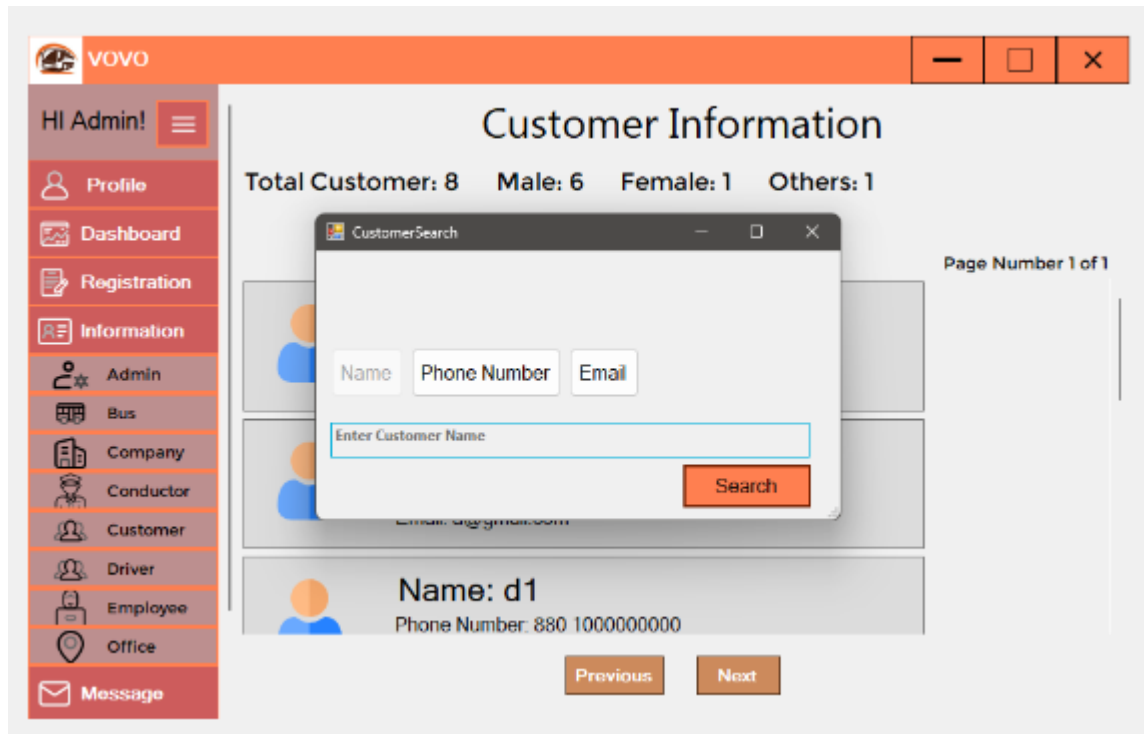
Search Delete Update

Page Number 1 of 1

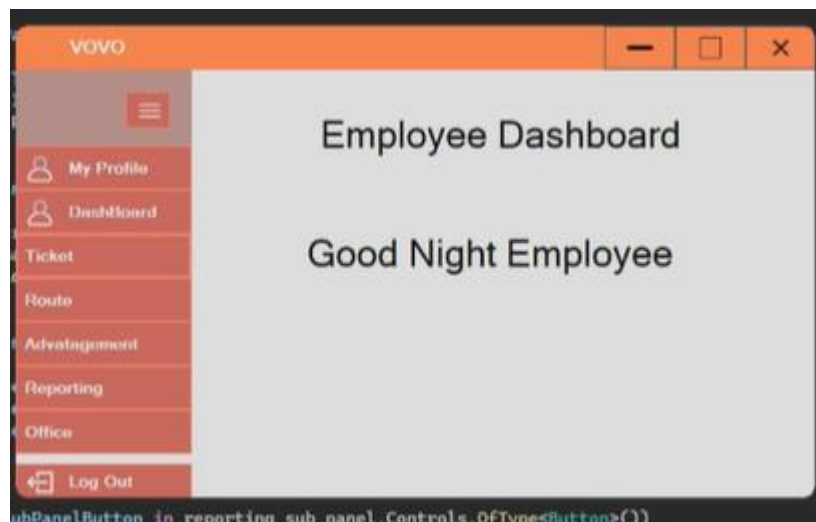
	Name: 1 ID: EMP-230001-3 Email: b@gmail.com
	Name: 1 ID: EMP-230002-3 Email: b@gmail.com
	Name: 1 ID: EMP-230003-3

Previous Next

Admin searching for Customer information:



Employee Dashboard:



Employee Profile:

VOVO

GOOD MORNING

My Profile

Ticket

Route

Advatagement

Reporting

Office

Log Out



Name: 1
ID: EMP-230003-3
[Change Password](#)

DOB: 11/11/1990
 Email: a@gmail.com
 Phone Number: 1813890622
 Gender: 1
 Nationality: 1

Employee booking for a ticket:

VOVO

GOOD MORNING

My Profile

Ticket

Now

Update

Delete

Route

Advatagement

Reporting

Office

label1

Ticket ID

Bus

Date(DD/MM/YYYY)

Boarding Time

Route

Ticket Price

Employee Registering for a Route:

VOVO

GOOD MORNING

My Profile

Ticket

Route

New

Update

Delete

Advatagement

Reporting

Office

Route Registration

Route ID

From

To

Total Boarding Point

Total Arival Point


Employee Reporting for a bus:

The screenshot shows the VOVO application interface. On the left is a sidebar with a red header 'GOOD MORNING' and a menu icon. The sidebar contains the following items: 'My Profile' (with a person icon), 'Ticket', 'Route', 'Advatagement', 'Reporting', 'Bus' (highlighted in grey), 'Office', and 'Log Out' (with a back icon). The main content area is titled 'Bus Reporting' and contains the following fields: 'Reporting ID' (text input with value 'BRP-230000001-3'), 'Ticket ID' (dropdown menu), 'Bus Number' (text input), 'Supervisor ID' (text input), 'Driver ID' (text input), and 'Conductor ID' (text input, partially visible).

Employee creating a new Office:

The screenshot shows the VOVO application interface for creating a new office. On the left is a sidebar with a red header 'GOOD MORNING' and a menu icon. The sidebar contains the following items: 'My Profile' (with a person icon), 'Ticket', 'Route', 'Advatagement', 'Reporting', 'Office' (highlighted in grey), 'New' (with a plus icon), 'Delete' (with a trash icon), and 'Log Out' (with a back icon). The main content area is titled 'NEW OFFICE' and contains the following fields: 'ID' (text input with value 'OFF-2300002-3'), 'Name' (text input), 'Email' (text input), 'Phone Number' (dropdown menu), and 'Address' (text input).

Employee confirming booking details:

VOVO

X

Booking Details

Passenger Details

Name

Basharul Alam

Email

basharulalam6@gmail.com

Phone Number

+880 183890622

☒ I have read, acknowledged and agree to the [Terms and Condition](#) and [Cancellation Policy](#) of Paribhan.com

Journey Details

Departure	Dhaka
Bus	VOVO

Schema Design:

