

# **Project Report**

## **Online Bus Reservation System**

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## **ABSTRACT**

As the technology around us is growing and evolving rapidly, gone are the days when people had to go to bus stands and wait in long queues to book tickets. With the technology booming, the lifestyle of many people has changed. In this ongoing pandemic, people have become more cautious and wary of going to crowded places such as bus stands, markets and shopping malls. In such situations, online bus reservation platforms have become a boon for the travelling enthusiasts. An online bus reservation platform should have a good User Interface and the users should be able to easily navigate through the different functionalities provided by the web application, thus giving them a good User Experience. My project “Online Bus Reservation Website” provides customers with an easy-to-use and easy-to-understand web application that can be accessed on any device from any remote location.

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# **CHAPTER 1 : INTRODUCTION**

## **1.1 Introduction**

Travelling is considered as a recreational activity by many people. But nowadays, many people feel uncomfortable going to bus stands and also think that it is quite time consuming. Especially during the time of such a pandemic, people are even much more wary of going to the bus stand to book tickets. So, in such a time, online bus reservation systems have come out as a boon for many people, as it saves a lot of time and also prevents the risk of getting infected with COVID. Online bus reservation is a process where users buy bus tickets without going to the bus stand themselves. Users can go to any web site sitting in their homes. Bus reservation system websites are available 24/7 and the only requirement is internet connection. It makes it very convenient for the users to do online bus booking. There are a large number of online bus booking websites that offer a huge number of buses at various locations .

## **1.2 Problem Definition**

In this pandemic, people have been forced to stay inside their homes as

much as they can. In situations like these, one would always like to avoid going to crowded places such as bus stands. Using an online bus reservation platform solves the problems faced by travellers during this pandemic. Online websites make it convenient and easy for the customers to do bus booking just sitting at their homes. In my project, the users can search for various buses based on the from and to location at a low price. Also, the User Interface should be good and customers should have good User Experience while booking and searching for buses from the website. Factors like these are quite important in determining the success of a Bus reservation website.

### **1.3 Project Overview/Specifications**

Ensuring a good User Experience for customers is not always an easy task, the web application needs to keep its User Interface simple and easy to use while providing the maximum functionalities. The goal of this project is to create a simple and easy-to-use web based application or interface that allows users to search for buses based on where they want to go. We have to develop an easy-to-use web based interface where customers can search for different buses, and then book tickets for the bus. A search engine where the user can enter the from and to location that he/she wants to go.

The interface of the application should be interactive through which a user can interact with the different areas of the application easily. The search engine should also provide an easy and convenient way of searching for buses according to the location. It would then list a set of buses based on the input provided by the user. The user can also finally book the ticket for the bus.

# **CHAPTER 2 REQUIREMENT**

## **ANALYSIS**

### **2.1 Requirement Specification**

This section deals with the type of hardware that is used and the software to support the same. Selection and identification of suitable software is also taken into account. The hardware and software requirements are explained below:

#### **2.1.1 Hardware Specifications:**

Hardware selection is an important factor in achieving the goals of the package, such as speed and efficiency. It must be capable enough to carry out all the tasks efficiently, which are required to be done by the proposed system. The hardware on which this project is being run is:

- Laptop running Windows 10
- 512 GB hard disk.
- 8 GB RAM.
- Standard mouse.
- Keyboard

## **2.1.2 Software Specifications:**

The software requirement specification is produced at the culmination of the analysis task. The function and performance allocated to software as part of system engineering are refined by establishing a complete information description, a detailed functional description, a representation of system behavior, an indication of performance requirement and design constraints, appropriate validation criteria, and other information pertinent to requirement. The introduction to software requirement Specification states the goals and objectives of the software, describing it in the context of the computer based system. The information description provides a detailed description of the problem that the software must solve. Information content, flow and structure are documented. A description of each function required to solve the problem is presented in the functional description. Validation criteria are probably the most important and ironically the most often neglected section of the software requirement specification. Software requirement specifications can be used for different purposes.

- HTML
- CSS

- Javascript
- External API
- Visual Studio Code

### 2.4.2.1 Javascript Characteristics

**JavaScript** (often shortened to **JS**) is a lightweight, interpreted, object-oriented language with first-class functions, and is best known as the scripting language for Web pages, but it's used in many non-browser environments as well. It is a prototype-based, multi-paradigm scripting language that is dynamic, and supports object-oriented, imperative, and functional programming styles. There are some indisputable great reasons to work with Javascript.

- **Speed** - JavaScript tends to be very fast because it is often run immediately within the client's browser. So long as it doesn't require outside resources, JavaScript isn't slowed down by calls to a backend server. Also, major browsers all support JIT (just in time) compilation for JavaScript, meaning that there's no need to compile the code before running it.
- **Simplicity** - JavaScript's syntax was inspired by Java's and is relatively

easy to learn compared to other popular languages like C++.

- **Popularity** - JavaScript is everywhere on the web, and with the advent of Node.js, is increasingly used on the backend. There are countless resources to learn JavaScript. Both StackOverflow and GitHub show an increasing amount of projects that use JavaScript, and the traction it's gained in recent years is only expected to increase.
- **Interoperability** - Unlike PHP or other scripting languages, JavaScript can be inserted into any web page. JavaScript can be used in many different kinds of applications because of support in other languages like Pearl and PHP.
- **Server Load** - JavaScript is client-side, so it reduces the demand on servers overall, and simple applications may not need a server at all.
- **Rich interfaces** - JavaScript can be used to create features like drag and drop and components such as sliders, all of which greatly enhance the user interface and experience of a site.
- **Extended Functionality** - Developers can extend the functionality of web pages by writing snippets of JavaScript for third party add-ons like Greasemonkey.
- **Versatility** - There are many ways to use JavaScript through Node.js servers. If you were to bootstrap Node.js with Express, use a document

database like MongoDB, and use JavaScript on the frontend for clients, it is possible to develop an entire JavaScript app from front to back using only JavaScript.

- **Updates** - Since the advent of ECMAScript 5 (the scripting specification that JavaScript relies on), ECMA International has been dedicated to updating JavaScript annually. So far, we have received browser support for ES6 in 2017 and look forward to ES7 being supported in the future.

# CHAPTER 3 : IMPLEMENTATION

## 3.1 Implementation

In this chapter I have explained all the pages with their specification and explained how they are linked with each other. This website has been developed for Bus reservation, where users can search for buses and also book them. The following screenshots are of the overview of the WebPages.

### 3.1 Landing Page

Landing page layout is shown in the below figure 4.1

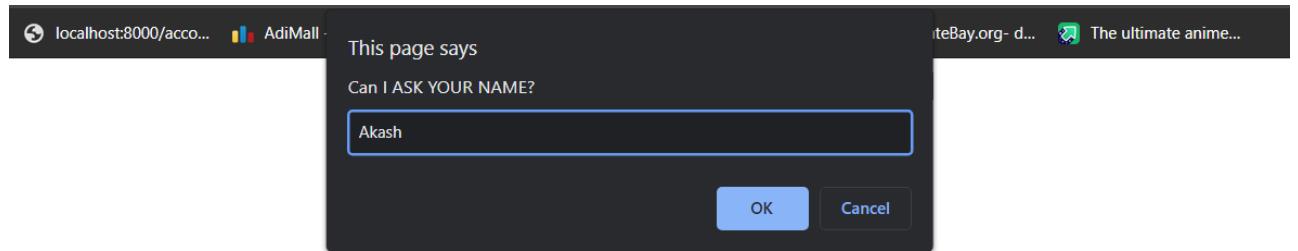
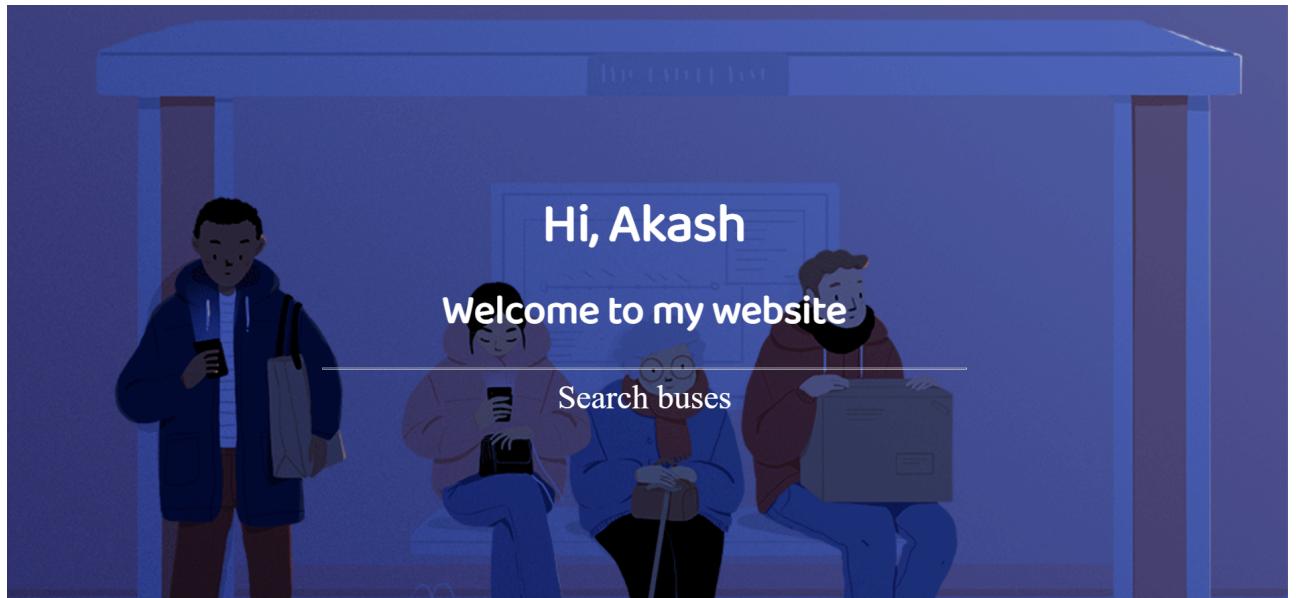


Fig.(4.1) (Landing Page)

This is the outlook of the landing page of the website. The user is asked to enter his/her name. After taking the input, the following page is rendered.



**Fig.(4.1) (Screenshot of rendered page)**

The user can now click on “Search buses” to go to the homepage of my project.

### **3.2 Home Page**

**Home page layout is shown in the below figure 3.3 .**



Fig.(3.3) (Home Page)

This is the layout for the home page. In the homepage, various options have been provided, such as, FAQ page, view All Buses and searching for buses based on user input .The code for the above screenshot is provided below :

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible"
content="IE=edge">
    <meta name="viewport" content="width=device-width,
initial-scale=1.0">
    <title>Bus Reservation</title>
    <link rel="stylesheet" href="10.css">
    <link rel="preconnect"
href="https://fonts.gstatic.com">
<link
href="https://fonts.googleapis.com/css2?family=Mate+SC&d
isplay=swap" rel="stylesheet">
<style>
```

```

.btn a{
    margin-left: -51px;
    margin-top: 24px;
}

```

</style>

</head>

<body>

```

<div class="container">
    <div class="nav"><a href="#"></a>
        <a href="#" id="a">Home>Bus Ticket</a>
        <a href="faq.html" id="faq">Faq</a>
        <a href="11.html" id="buses">ALL Buses</a>

```

```

</div>
<div class="main">
    <div id="box">
        <h1>Online Bus Ticket Booking</h1>
        <div class="from"><input class=
"from-input" type="text" placeholder="FROM"></div>
        <div class="to"><input class =
"to-input" type="text" placeholder="TO"></div>
        <button class="btn
search-btn">search</button>
        <h2>Search for Bus Tickets Online</h2>
        <h3>On the journey to safety we don't
take shortcuts <hr></h3>
    </div>

```

```

<div class = "search-result">

    <h2>Search Results</h2>
    <table>
        <tr>
            <th>Bus Name</th>

```

```
        <th>From</th>
        <th>To</th>
        <th>Arrival</th>
        <th>Departure</th>
        <th>Price</th>
        <th></th>
    </tr>

    </table>
</div>
</div>
</div>
</body>
<script src = "script.js"></script>
</html>
```

### 3.3 FAQ Page

FAQ page layout is shown in the below figure 3.3

**Q: What are the benefits of making a bus booking through onbus?**

A: There are numerous benefits to making a bus booking or bus ticket booking online through onbus such as: 1) Book bus tickets with ease from the comfort of your home or workspace. 2) Quick and easy cancellation and rescheduling options. 3) Exclusive offers and cashback options. 4) M-ticket and e-ticket facilities are available. 4) Wide variety of bus operators, types of buses and routes to choose from. 5) Impeccable customer service. 5) Lower prices. Visit the redBus website or download the app to see the benefits of making a bus ticket booking.

**Q: Can I cancel my bus ticket?**

A: Yes, you can. All you have to do is log in to the onbus website or app and follow the cancellation procedure. You can even call the customer care number of onBus to get your ticket canceled.

**Q: Can I get discount on my bus tickets?**

A: redBus offers discounts on bus tickets on various occasions. You just need to grab the perfect deal at the right time. Keep a check on onbus' Offer page and grab amazing discounts and deals on your bus ticket booking.

**Q: Do I need a print out of my bus ticket to board a bus?**

A: No, you do not. You can present your M-ticket or e-ticket on your mobile device before boarding the bus. It is advisable to carry a government-issued ID to verify your identity before boarding the bus.

**Fig.(3.3) (FAQ Page)**

This is the layout for the FAQ page. The user can see some frequently asked questions that others customers have asked. The HTML code for the above screenshot has been provided below :

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible"
content="IE=edge">
    <meta name="viewport" content="width=device-width,
initial-scale=1.0">
    <title>Faq</title>
    <style>
        h3{
            font-size: 30px;
            font-family: sans-serif;
        }
        p{
            font-size: 20px;
        }
    </style>

```

```
        font-family:Verdana, Geneva, Tahoma,
sans-serif
    }
</style>
</head>
<body>
    <div class="container">
        <div class="q1">
            <h3>Q: What are the benefits of making a bus booking through onbus?</h3>
            <p>A: There are numerous benefits to making a bus booking or bus ticket booking online through onbus such as: 1) Book bus tickets with ease from the comfort of your home or workspace. 2) Quick and easy cancellation and rescheduling options. 3) Exclusive offers and cashback options. 4) M-ticket and e-ticket facilities are available. 4) Wide variety of bus operators, types of buses and routes to choose from. 5) Impeccable customer service. 5) Lower prices. Visit the redBus website or download the app to see the benefits of making a bus ticket booking.</p>
        </div>
        <div class="q2">
            <h3>Q: Can I cancel my bus ticket?</h3>
            <p>A: Yes, you can. All you have to do is log in to the onbus website or app and follow the cancellation procedure. You can even call the customer care number of onBus to get your ticket canceled.</p>
        </div>
        <div class="q3">
            <h3>Q: Can I get discount on my bus tickets?</h3>
            <p>A: redBus offers discounts on bus tickets on various occasions. You just need to grab the perfect deal at the right time. Keep a check on onbus' Offer
```

page and grab amazing discounts and deals on your bus ticket booking.</p>

</div>

<div class="q4">

<h3>Q: Do I need a print out of my bus ticket to board a bus?</h3>

<p>A: No, you do not. You can present your M-ticket or e-ticket on your mobile device before boarding the bus. It is advisable to carry a government-issued ID to verify your identity before boarding the bus.</p>

</div>

<div class="q5">

<h3>Q: How do I book a Volvo bus?</h3>

<p>A: Booking a Volvo bus on onBus is extremely easy. You just have to select the desired route and filter out Volvo buses from the list of buses available. Choose a suitable AC Volvo bus on redBus and head to the payment section for purchasing your ticket.</p>

</div>

<div class="q6">

<h3>Q: What does a PNR number on my bus ticket mean?</h3>

<p>A: PNR stands for 'Passenger Name Record.' This is generally represented as a 10-digit number on your M-ticket or E-ticket.</p>

</div>

<div class="q7">

<h3>Q: Is it safe to travel by bus during the COVID-19 pandemic?</h3>

<p>A: onBus, along with bus operators under the onBus banner, have been doing a lot when it comes to upholding the safety standards that have been set by the Government of India and the MoHFW. Passengers can make

their bus booking through the redBus platform and travel safely with redBus.</p>

</div>

<div class="q8">

<h3>Q: What is Safety+, and what does it have to do with onbus?</h3>

<p>A: Safety+ is a new feature that customers can look for when making a bus ticket booking on the onBus platform. Bus operators follow strict safety procedures such as sanitizing buses after every trip, staff with masks, temperate check of both passengers and bus staff before boarding the bus, and much more. Scroll up to learn more about Safety+. Look for the Safety+ icon, which is denoted by a shield with a "plus" sign in the middle when you book your bus tickets online with onBus.</p>

</div>

<div class="q9">

<h3>Q: Is it safer to travel by bus or by plane during COVID-19?</h3>

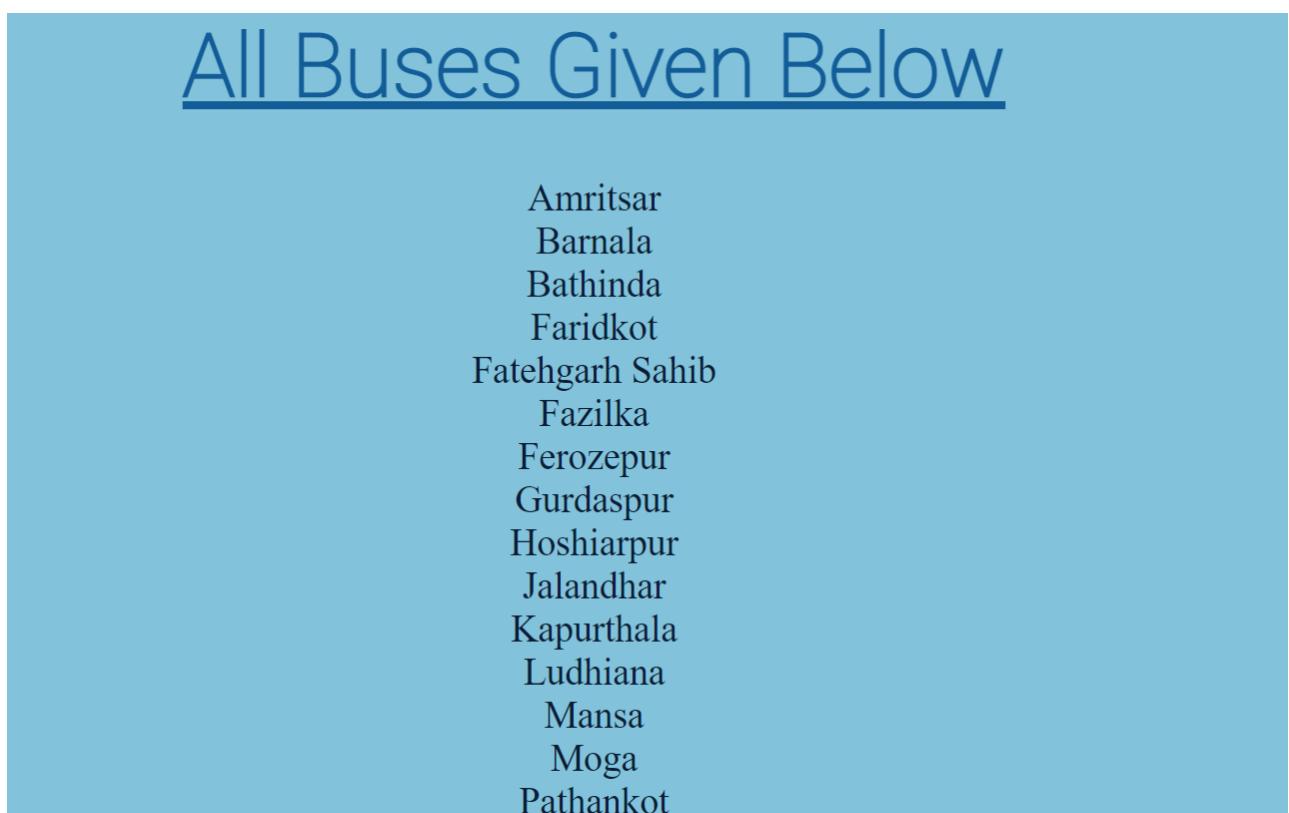
<p>A: Though a flight might save some travel time as it does go from Point A to Point B a lot faster than a bus, it is advisable to travel by bus instead. If a passenger wishes to travel via airplane, they would have to get to the terminal early and wait for a long time before boarding a flight. There is a risk of infection as the air in the plane is circulated within the sealed tube and could pose a danger if an asymptomatic passenger does carry the virus onboard. With a bus, the passenger can wait in their vehicle before boarding the bus, and therefore, crowding at a boarding point is significantly reduced. Passengers can even keep their windows open to ensure that fresh air is circulated in the bus. Measures followed on Safety+ buses considerably minimize the chance of contracting

```
the virus on a bus than an airplane.</p>
</div>

</div>
</body>
</html>
```

### 3.4 All Buses Page

All Buses page layout is shown in the below figure 4.4



**Fig.(4.4) (Shipping Details Page)**

This is the layout for the All Buses Page. Here, the user can view all the buses available in our database . The HTML code for the above screenshot is given

below :

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible"
content="IE=edge">
    <meta name="viewport" content="width=device-width,
initial-scale=1.0">
    <title>All buses</title>
    <link rel="preconnect"
href="https://fonts.gstatic.com">
<link
href="https://fonts.googleapis.com/css2?family=Roboto:wght@100&display=swap" rel="stylesheet">
    <style>
        a{
            display: block;
            font-size: 30px;
            text-decoration: none;
            color: #0a1d37;
        }
        .container{
            text-align: center;
        }
        h1{
            font-family: 'Roboto', sans-serif;
            font-size: 70px;
            color: #125d98;
        }
        body{
            background-color: #82c2db;
        }
        a:hover{
```

```

        color: blue;
    }
</style>
</head>
<body>
    <div class="container">
        <h1><u>All Buses Given Below</u> </h1>
        <a href="1.html">Amritsar</a>
        <a href="3.html">Barnala</a>
        <a href="2.html">Bathinda</a>
        <a href="12.html">Faridkot</a>
        <a href="4.html">Fatehgarh Sahib</a>
        <a href="5.html">Fazilka</a>
        <a href="6.html">Ferozepur</a>
        <a href="7.html">Gurdaspur</a>
        <a href="8.html">Hoshiarpur</a>
        <a href="10.html">Jalandhar</a>
        <a href="13.html">Kapurthala</a>
        <a href="14.html">Ludhiana</a>
        <a href="15.html">Mansa </a>
        <a href="16.html">Moga</a>
        <a href="17.html">Pathankot</a>
        <a href="18.html">Patiala</a>
    </div>
</body>
</html>

```

### 3.5 Search Results

Search results layout is shown in the below figure 4.4

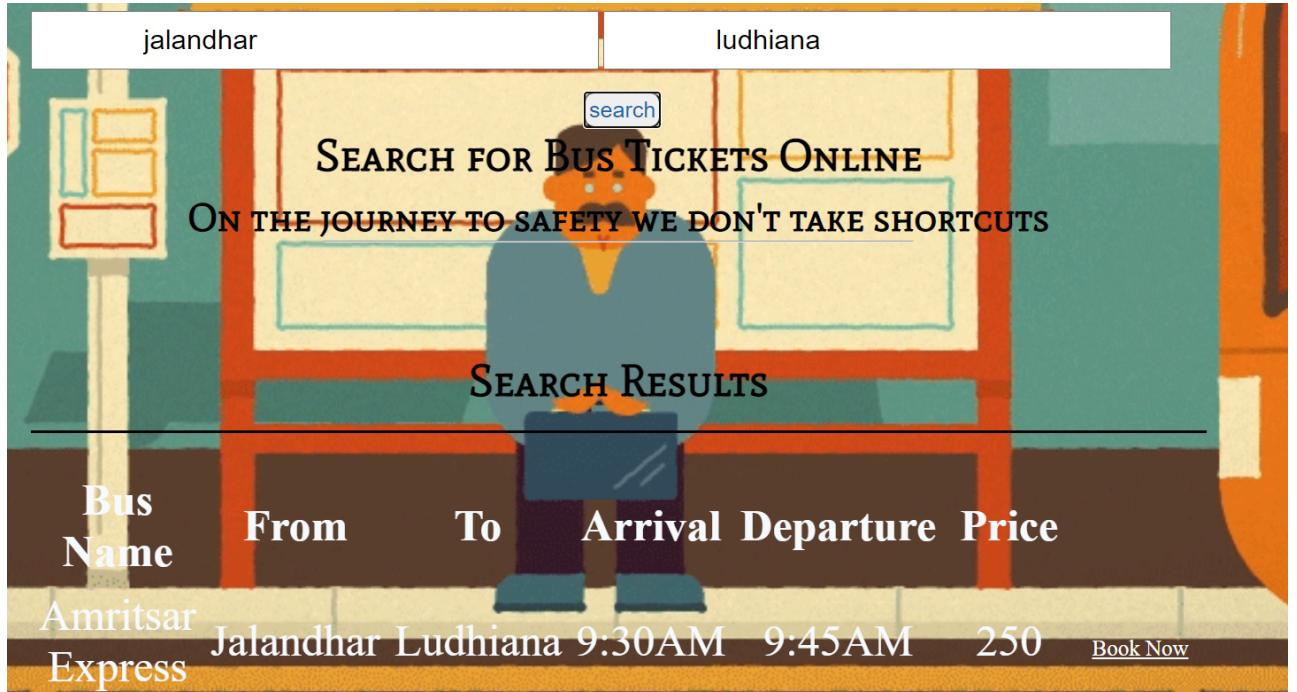
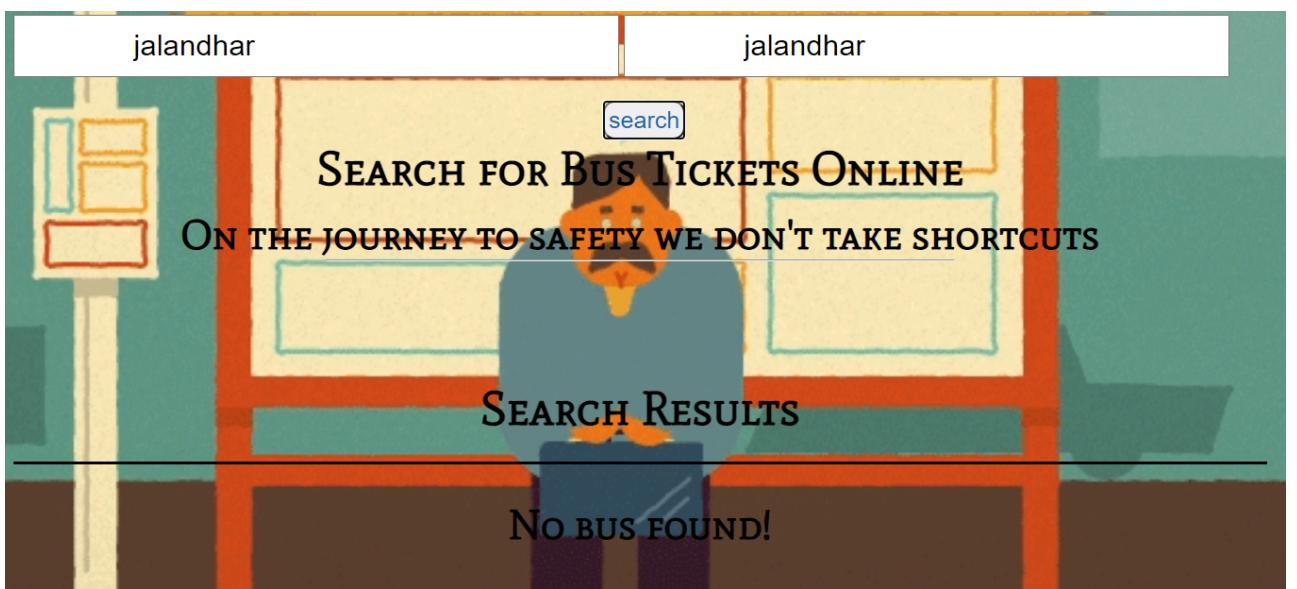


Fig.(4.4) (Shipping Details Page)

This is the output when a user searches for any bus and if the bus is available.

If no buses are found, then the following result is shown.



The Javascript code for the above screenshot is given below :

```

let searchBtnElement = document.querySelector('.search-btn');
let fromInputElement = document.querySelector('.from-input');
let toInputElement = document.querySelector('.to-input');
let tableElement = document.querySelector('.search-result table')
let searchDivElement = document.querySelector('.search-result')

let availableBusElements

searchBtnElement.addEventListener('click', function()
{
    fromPlace = fromInputElement.value;//if we want to get only values then we
use .value after selecting
    toPlace = toInputElement.value;//if we want to get only values then we use
.value after selecting if we don't this we wont select value but whole input box.

    if(fromPlace !== "" && toPlace !== "")
    {
        availableBusElements = document.querySelectorAll('.available-bus')
        for(let i = 0; i < availableBusElements.length; i++)
        {
            tableElement.style.display = 'none';
            availableBusElements[i].remove();
        }
        let found = false;
        busesData.forEach(function(bus)
        {
            if(bus.to.toLowerCase() === toPlace.toLowerCase() &&
bus.from.toLowerCase() === fromPlace.toLowerCase())
            {
                tableElement.style.display = 'inline-block';
                found = true;
                console.log('matched')
                let template =
                    <tr class = "available-bus">
                        <td>${bus.name}</td>
                        <td>${bus.from}</td>
                        <td>${bus.to}</td>
                        <td>${bus.arrival}</td>
                        <td>${bus.departure}</td>
                        <td>${bus.price}</td>
                        <td><a class = "btn" href = "form.html">Book Now</a></td>
                    </tr>
                    `

                tableElement.insertAdjacentHTML('beforeend', template)
            }
        })
        if(!found)
        {
            let template =
`
```

```

        <h3 class = "available-bus">
            No bus found!
        </h3>
        `

        searchDivElement.insertAdjacentHTML('beforeend', template)
    }
}
)

```

### 3.6 Booking Form Page

**Booking Form layout is shown in the below figure 3.4**

The screenshot shows a booking form page with a purple header and footer. The main content area has a light blue background. It is divided into three sections: 'Passenger Details' at the top, 'Passenger Information' in the middle, and 'Contact Details' at the bottom. The 'Passenger Information' section contains fields for Name (text input), Gender (radio buttons for Male and Female), and Age (text input). The 'Contact Details' section contains a field for Email (text input).

Passenger Details	
Passenger Information	
Name :	<input type="text"/>
Gender:	<input type="radio"/> Male <input type="radio"/> Female
Age :	<input type="text"/>
Contact Details	
Email :	<input type="text"/>

**Fig.(4.4) (Booking Form Page)**

This is the booking page, where the user can enter the details in the form and book his/her ticket.

The HTML code for the above screenshot is given below :

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible"
content="IE=edge">
    <meta name="viewport" content="width=device-width,
initial-scale=1.0">
    <title>Document</title>
    <style>
        body{
            background-image : url('bk.jpg');
            background-size: cover;
            text-align: center;
        }
        h1{
            font-size: 50px;
            color: rgb(15, 15, 70);
        }
        h2{
            font-size: 60px;
            color: rgb(15, 15, 70);
        }
        input{
            font-size: 30px;
            color: rgb(15, 15, 70);
        }
        .info{
            display: inline-block;
        }
    </style>
```

```

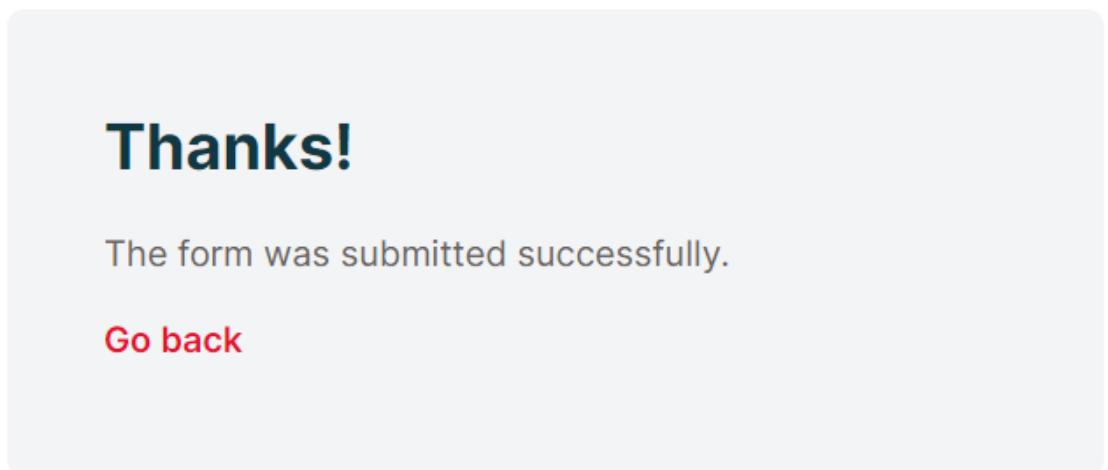
</head>
<body>
    <h1>Passenger Details</h1>
    <div class="info">
        <h2>Passenger Information</h2>
        <form action="https://formspre.io/f/xyyljrly"
method="POST">
            Name : <input type="text" name="" id=""><br><br>
            Gender:
                <INPUT TYPE="Radio" Name="Gender"
Value="Male">Male
                <INPUT TYPE="Radio" Name="Gender"
Value="Female">Female <br><br>
            Age : <input type="number" name="" id="">
        </div>
        <div class="info2">
            <h2>Contact Details</h2>
            Email : <input type="email" name="" id="">
<br><br>
            Phone Number : <input type="tel" name=""
id="" >
                <br>
        </div>
        <div class="info3">
            <h2>Bus Information</h2>
            Location : <input type="text"> <br><br>
            Bus Name : <input type="text"> <br><br>
            From : <input type="text"> <br><br>
            To : <input type="text"> <br><br>
            <button>Submit</button>
        </div>
    </form>
</body>

```

```
</html>
```

### 3.7 Use of external API to store form data

After form submission, the user will see the following page



I have used an external API formspree.io to store the submitted form data, and the submitted responses are also sent as an email to the admin through this API.

## **CHAPTER 4 : CONCLUSION**

My project “**Online Bus Reservation System**” provides people who do not want to go outside for booking tickets, a simple web based platform that provides an easy viewing, searching and booking of buses. The search engine allows a customer to search any bus easily using the to and from location as input. The customer can also easily see the complete description of any bus.

I hereby conclude that this software can be useful for helping people book buses easily without going to the bus stand themselves.