Bangladesh University of Business and Technology

A PROJECT REPORT
ON

"TICKET PURCHASING SYSTEM"

Submitted In Partial Fulfillment of the Requirements for the Award of

BACHELOR OF SCIENCE

IN

COMPUTER SCIENCE & ENGINEERING

Submitted By:

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ABSTRACT

In this project the basic public facility like MRT station and a public space for amenity like a cultural space were introduced and the possible opportunity it might bring together with the impact was explored.

Twenty million people will live in Dhaka in 2030 if present growth trends to continue. Unhindered informal/unplanned and formal/planned growth on its fragile ecology makes it one of the most vulnerable/unlivable cities on the planet in the face of climate change and other natural calamities. The present traffic scenario is connected with this explosive urban growth and has to be treated accordingly.

Dhaka city's transport network awaits a big change, as the government plans seven metro-rail and bus rapid transit routes under an integrated mass traffic system. Government officials said the state-run Dhaka Transport Coordination Authority (DTCA) and the Roads and Highways Department (RHD) would construct three Mass Rapid Transit (MRT) and four Bus Rapid Transit (BRT) lines to ease traffic snarls in the busy metropolis.

CANDIDATE'S DECLARATION

We declare that 11th semester report entitled Ticket Purchasing System is OUR own work conducted under the supervision of the external guide Md. Abdullah Al Ahasan from Department of CSE, BUBT.

We further declare that to the best of my knowledge the report for B.Sc. 11th semester does not contain part of the work which has been submitted for the award of B.Sc. either in this or any other university without proper citation.

Samin Sakif

Rabiul Allam ashik

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Mirppur-2, Dhaka 1216

CERTIFICATE

This is to certify that this is an authentic record of the project presented by ***Samin Sakif & Rabiul Allam Ashik*** *during the semester, Fall 2020-2021 in partial fulfilment of the requirements of the degree of Bachelor of Science in Computer Science and Engineering.*

Samin Sakif

Rabiul Allam Ashik

Project Supervisor
Md. Abdullah Al Ahasan
Lecturer,
Dept. of CSE, BUBT.

DEDICATION

Dedicated to our parents for all their love and inspiration .

&

Also dedicated to our beloved teachers for whom we have come so far.

Acknowledgements

It is a great a pleasure to present this report on the project named Ticket Purchasing System (DMRT) undertaken by me as part of my B.Sc. in (CSE) curriculum.

It is pleasure that we find ourselves penning down these lines to express my sincere thanks to the people who helped me along the way in completing our project. We find inadequate words to express my sincere gratitude towards them.

First and fore most we would like to express my gratitude towards my training guide **Md. Abdullah Al Ahasan** for placing complete faith and confidence in our ability to carry out this project and for providing me his time, inspiration, encouragement, help, valuable guidance. without the sincere and honest guidance of our respect project guide we would have not been to reach the present stage.

We would like to express my sincere thanks to our chairman of the Department Prof. Dr. M. Ameer Ali and our internal guide who gave us an opportunity to undertake such a great challenging and innovative work. We are grateful to them for their guidance, encouragement, understanding and insightful in the development process. We are also thankful to entire staff of BUBT for their constant encouragement, suggestions and moral support throughout the duration of my project.

Last but not the least we would like to mention here that we are greatly indebted to each and everybody who has been associated with my project at any stage but whose name does not find a place in this acknowledgement.

Best Regards,

Samin Sakif (ID: 16173103077).

Rabiul Allam Ashik (ID: 16173103084).

APPROVAL

The project **Ticket Purchasing System (DMRT)**, submitted by Samin Sakif (ID: 16173103077) & Rabiul Allam Ashik (ID: 16173103084) dept. of CSE, BUBT under the supervision of Md. Abdullah Al Ahasan, Lecturer, dept. of CSE, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in CSE.

Approved By

_____

Md. Abdullah Al Ahasan
Lecturer,
Department of CSE, BUBT

Abbreviations

* DMRT- Dhaka Mass Rapid Transit.
* DTCA- Dhaka Transport Coordination Authority.
* BRT- Bus Rapid Transit.
* RHD- Roads and Highways Department.
* GoB- Government of Bangladesh.
* DTCB- Dhaka Transport Coordination Boar.
* JICA- Japan International Cooperation Agency.
* IDE- Integrated Development Environment.

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1. Introduction

In today's World, the way of functioning and Managing the system has been totally changed. there is a sudden and abrupt changes in the Structure, maintenance and Modification, handling, leaving inside every system without managing system through computer application and programming, the development of infrastructures are unfinished. There are many errors and drawbacks without use of computer programming and applications.

Dhaka, the capital city of Bangladesh with current population of 17 million has been growing at astonishing levels since the independence. Its metropolitan area is home to almost 15 million people in an area of 1,528 km (about 17 million in the Greater Dhaka). By 2020, the megacity population is expected to rise to 20 million people. It is also one of the most densely populated cities in the world, with more than 45,000 people per square meter in the core area (ADB, 2011). Per l income averages around US 900 per year, and around 30 percent of the population lives in miserable conditions, with very poor access to transport services (Ministry of Finance, GoB, 2012) [5].

The rapid urbanization process, high vehicular population growth and that of the mobility, inadequate transportation facilities and policies, varied traffic mix with over concentration of non-motorized vehicles, absence of dependable public transport system and inadequate traffic management practices have created a significant worsening of traffic and environmental problems in the metropolitan Dhaka. Road traffic congestion continues to remain a major problem and indeed is deteriorating rapidly resulting in massive losses. The greater challenge thus for transportation professionals is to develop a system of urban transport that meet the basic mobility needs for all urban dwellers at desirable safety and avoiding the unacceptable level of congestion and its consequent overwhelming adverse environmental effects.

Various projects around the world have indicated that MRT [4] is an effective for congested cities at a relatively low construction and operation cost. It is urged that Mass Rapid Transit (MRT) has been seen as a "creative, emerging public transit solution" which can be cost-effective in addressing urban congestion (Currie, 2006, Levinson et al. 2003, U.S. General Accounting Office, 2001) [6]. The purpose of this paper is to introduce the key transport and traffic characteristics in metro Dhaka and to discuss the potential of introducing MRT in Dhaka metro city and restructuring of existing bus network to cater for ever increasing public transport demand towards alleviation of congestion level and achieving a sustainable urban public transport system [7].

As we know that, "necessity is the mother of the invention", so in today's challenging world, every system is developed and launched by the use of computer software and programming. Our project is about "Metro Rail Ticket Purchasing System (Dhaka). this software is Useful to interface between User and Authority. Authority can see all of things report, mange Tickets. Dhaka City is biggest problem traffic Jam, for this problem govt. give a step to Metro railway project. It is very helpful in our country, it is very effective for our Country, now can transport 60,000 people per hour. Huge people can buy his/her ticket from booth.

1.1. Motivation

The motivation for this project comes from my keen to learn different technologies. We don't have enough experience working on PHP, AJAX platform until now and through this project we have gained a good learning experience by exposing ourselves to various technologies.

1.2. Study of the system

This has been designed keeping the customers in mind and the main purpose is to provide users an easy, simple and efficient manner of confirming the launch tickets. The user interfaces that are developed in this website help the customers with different transactional states like entering the personal information. The addition of this mechanism will make users feel comfortable while using the website/software. Though it only can be accessed only by the users of the authority but customers will be able to access this when there will be another customer log in form then they will be able to buy tickets but cancellation of tickets is on the hand of authority/authorized users. Here customers only can give their personal information.

2. Tools and Technologies

We basically use HTML, CSS, Bootstrap, AJAX and PHP.

2.1. HTML

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and applications. Each page contains a series of connections to other pages called hyperlinks. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document. HTML elements are delineated by tags, written using angle brackets. Tags such as <img> and <input/> introduce content into the page directly. Others such as …. surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page. HTML code ensures the proper formatting of text and images so that your Internet browser may display them as they are intended to look. Without HTML, a browser would not know how to display text as elements or load images or other elements. HTML also provides a basic structure of the page, upon which Cascading Style Sheets are overlaid to change its appearance.

2.2. CSS

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language. CSS is designed primarily to enable the separation of presentation and content, including aspects such as the layout, colors, and fonts This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple HTML pages to share formatting by specifying the relevant CSS in a separate .css file, and reduce complexity and repetition in the structural content.

2.3. Bootstrap

Bootstrap is a free front-end framework for faster and easier web development. Bootstrap includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins. Bootstrap also gives us the ability to easily create responsive designs

2.4. AJAX

AJAX is an acronym for Asynchronous JavaScript and XML. It is a group of inter-related technologies like JavaScript, DOM, XML, HTML/XHTML, CSS. AJAX allows us to send and receive data asynchronously without reloading the web page. So it is fast. AJAX allows us to send only important information to the server not the entire page. So only valuable data from the client side is routed to the server side. It makes your application interactive and faster.

2.5. PHP

PHP is a widely used open source general purpose scripting language that is especially suites for web development and can be embedded into html basically, a server-side scripting language designed primarily for web development but also used as a general-purpose programming language. PHP code may be embedded into HTML or HTML5 markup, or it can be used in combination with various web template systems, web content management systems and web frameworks. PHP code is usually processed by a PHP interpreter implemented as a module in the web server or as a Common Gateway Interface (CGI) executable. The web server software combines the results of the interpreted and executed PHP code, which may be any type of data, including images, with the generated web page. PHP code may also be executed with a command-line interface (CLI) and can be used to implement standalone graphical applications.

3. The Project Brief

The urban transportation system is not well coordinated and does not provide people with ease to access and mobility to different places. Hence traffic pressure could be eased by connecting transportation linkages with surrounding urban areas and facility. [3]

The mass transport facility in Dhaka is composed of individual private sector operators with almost complete dependency on small capacity minibuses, the exception being some standard single deckers and double deckers operating on a minority of routes.

With due consideration of this rapid urbanization situation in Dhaka, the Government of Bangladesh (GOB), through Dhaka Transport Coordination Board (DTCB) as the implementing agency, Japan International Cooperation Agency (JICA), formulated a preparatory survey on Dhaka Urban Transport Network Development Study recommended a series of urban transport network development projects and programs [6]. MRT Line 6 [7] project was selected in the as the high priority project
[2].

4. Objectives and Goals

The main purpose of this study is to automate the manual procedures of reserving a metro rail train ticket for any journey made through a website. This system is said to be an automatic system and customers can select seats by themselves. Specifically, objectives of this project will consist of :

- Providing a web-based metro rail ticket purchasing function where a customer can buy bus ticket through the online system without a need to queue up at the counter to purchase a metro rail ticket.
- Enabling customers to check the availability and types of coaches online. Customer can check the time departure for every coaches through the system.
- Easing metro rail ticket payment by obtaining a bank pin after payment is made to the various designated banks.
- Ability of customers to cancel their Purchasing.
- Admin user privileges in updating and canceling Purchasing, route and vehicle records.

5. Overview

The transport system in Dhaka includes many different modes of travel - both motorized and non-motorized. These diverse modes often use the same road space, resulting in a high level of operational disorder. The city's transport environment and system are unique among cities of comparable size in the world, being predominantly road based with a substantial share of non-motorized transport[5]. Buses and minibuses, the cheapest mode available as mass transit, are constrained by poor service conditions: long waiting, delay on plying, overloading and long walking distance from the residence/work place to bus stoppages are some of the problems that users confront daily. This situation has resulted in deterioration in accessibility, level of service, safety, comfort and operational efficiency, causing increased costs, loss of time, air pollution and psychological strain, and posing a serious risk to the economic viability of the city and the sustainability of its environment. The purpose of this project to make metro rail ticket purchasing system more efficient and effective. To provide a user friendly environment where user can be serviced better[2]. Make function of metro rail ticket system.

6. Features & Requirements

➢ Features

- User Registration and Login
- Buy his/her Ticket Very easily.
- Users can see their trip distance in KM.
- Users can see total costs.
- Route details.
- Users can see available seats and booked seats from an iconic image of a coach.
- User can make payments.
- User can also print tickets directly from website.

➢ Requirements

- XAMPP Server.
- Web Browser.

7. Implementation

- account.php: the main page of the website after login
- book.php: for booking seats
- goforcancellation.php, cancel.php: for cancelling seats
- changepassword.php, changepasswordfinal.php: for changing passwords
- dblink.php: for establishing link with the database
- findTrains.php: finding trains between station
- footer.php: general footer code for all PHP files
- generate.php: generating test data and some tables
- getAvailability: getting availability of seats
- header.js: Javascript functions to assist the website on client side
- header.php: general header code for most PHP files
- index.php: main page of the website when not logged in logout.php: Logs the user out
- Railways.sql: contains SQL code for generating tables and sequences
- register.php: registers new users into the website
- triggers.sql: triggers for checking wherther validity constraints are satisfied
- updateprofile.php, updateprofilefinal.php: User profile updation
- datagencodes: Python and Bash codes for generating and importing realistic data

7.1. Flow Chart

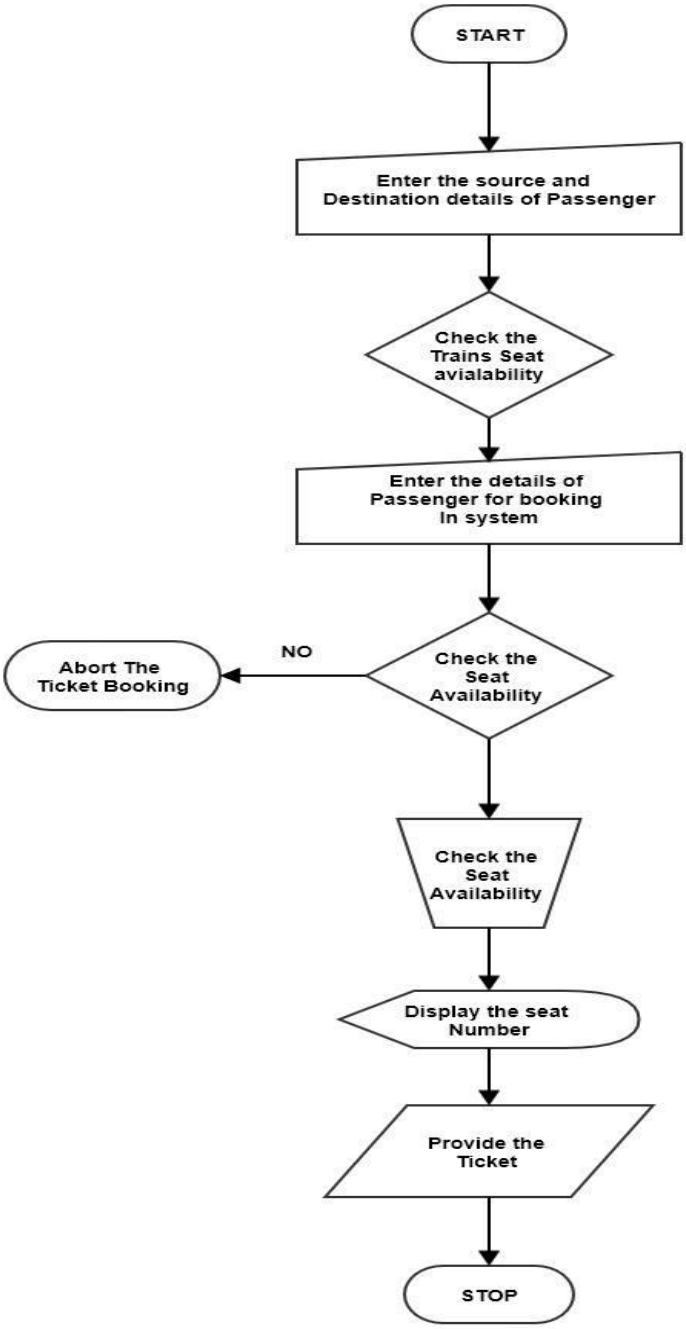


Figure 7.1: Flow Chart.

7.2. E-R Diagram:

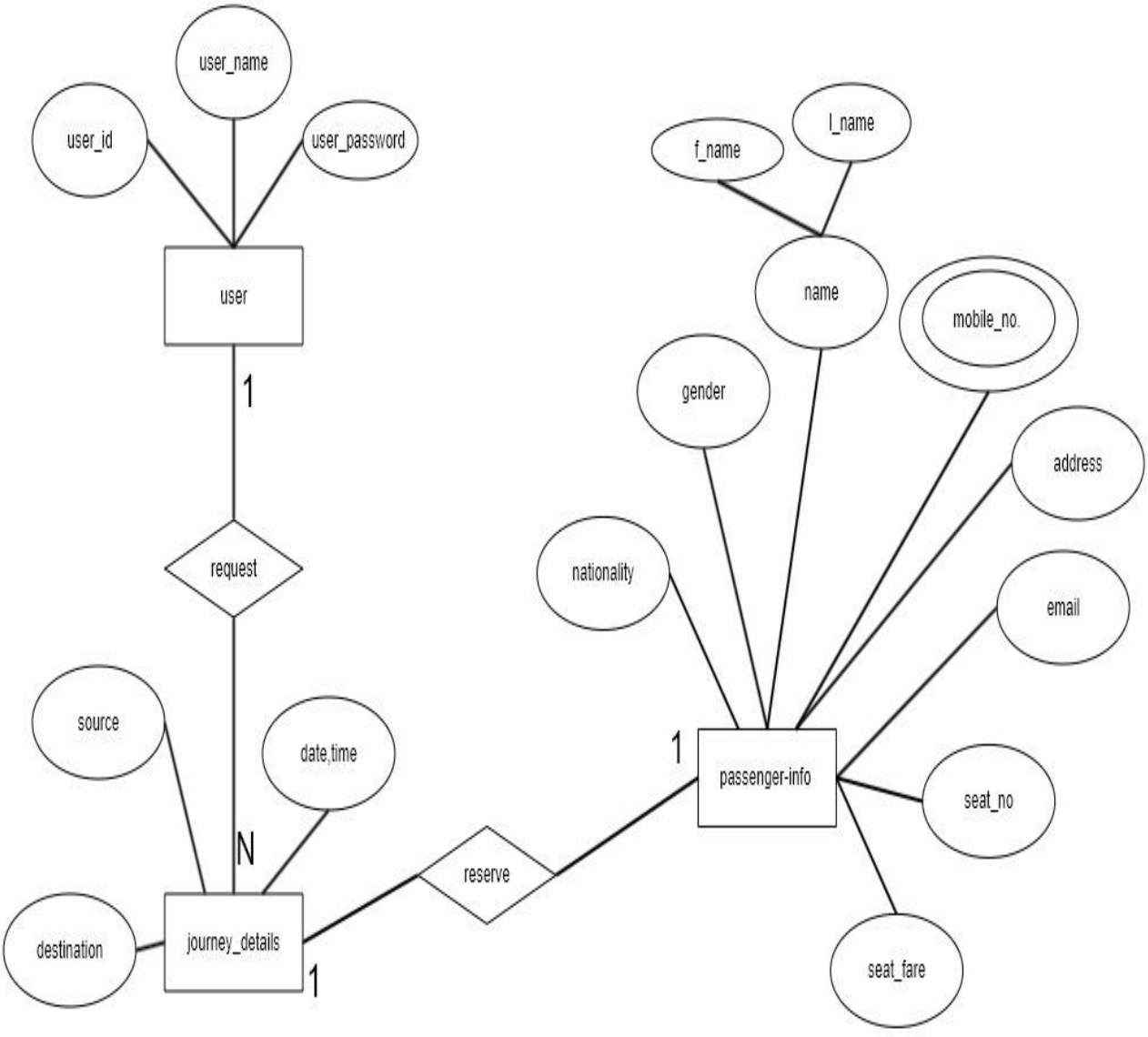


Figure 7.2: E-R Diagram.

7.3. Data Flow Diagram:

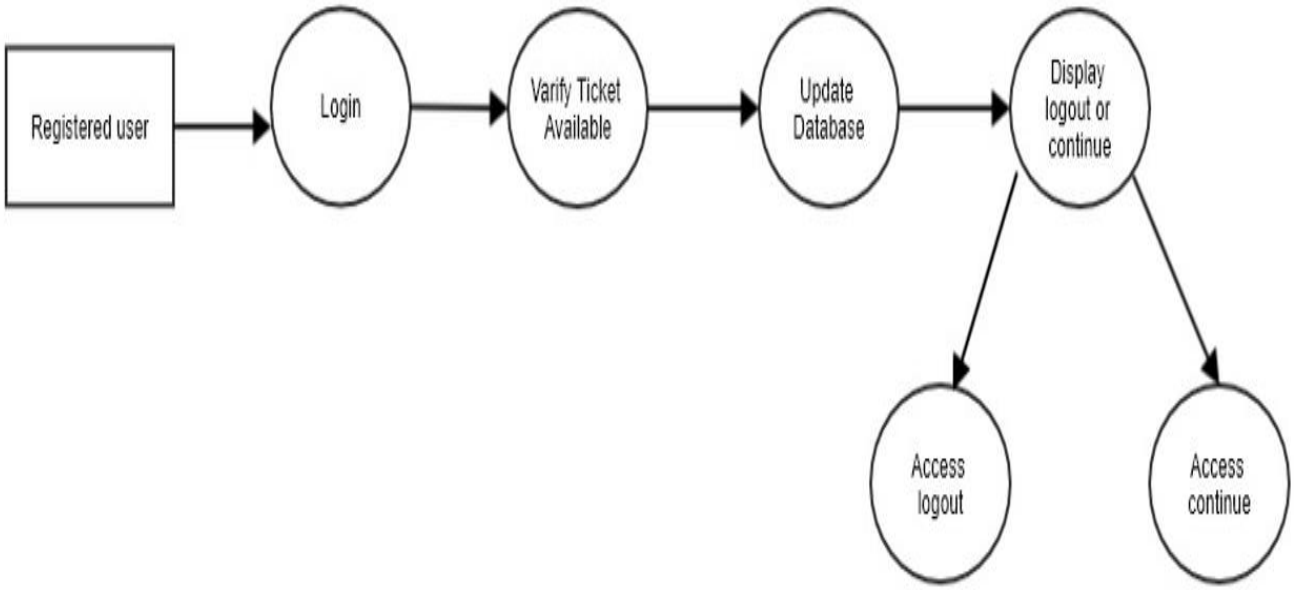


Figure 7.3: Data Flow Diagram (DFD).

8. Screenshots of Project

8.1. Home Page

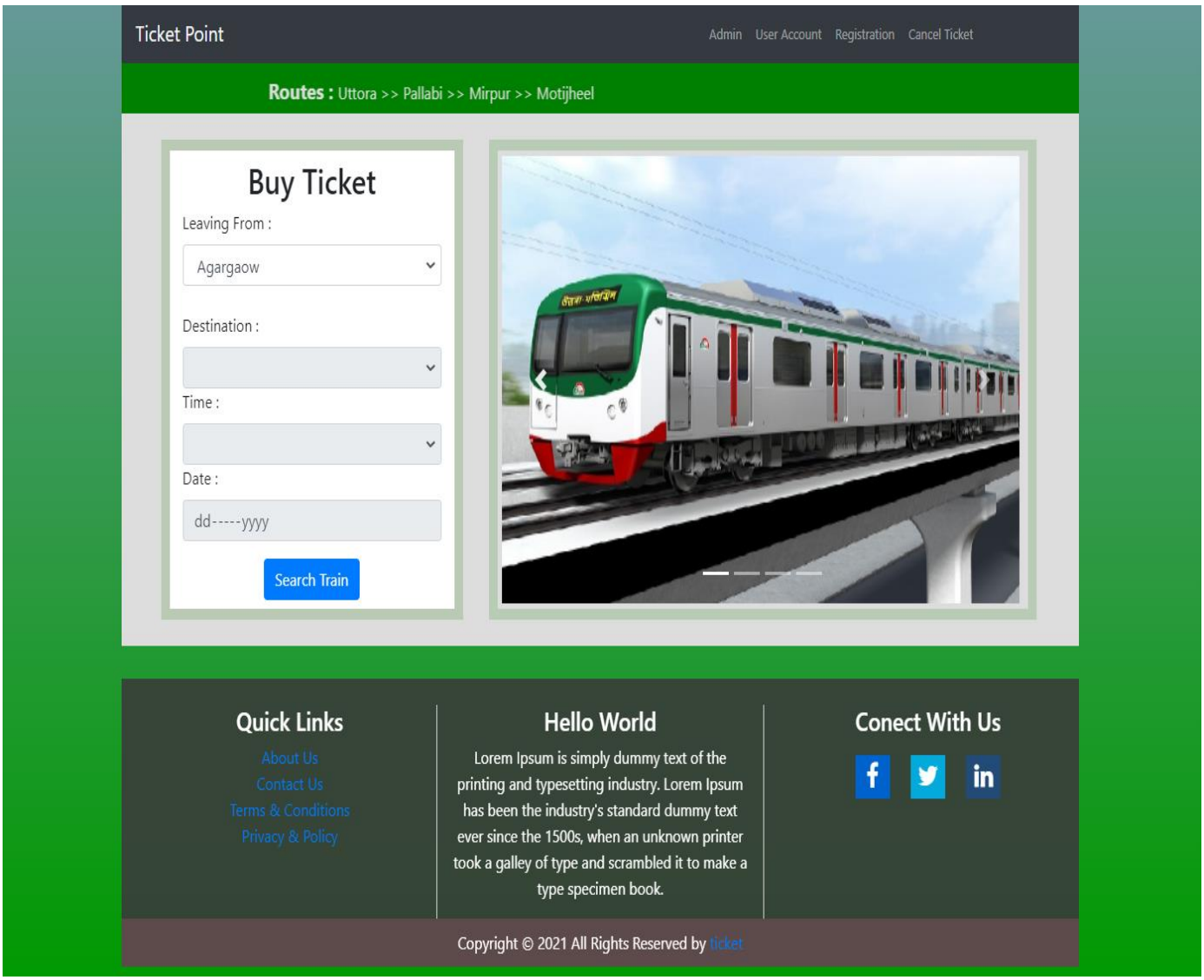


Figure 8.1: Home Page.

8.2. User Registration Form.

If the user is not registered, user have to register through this registration form.

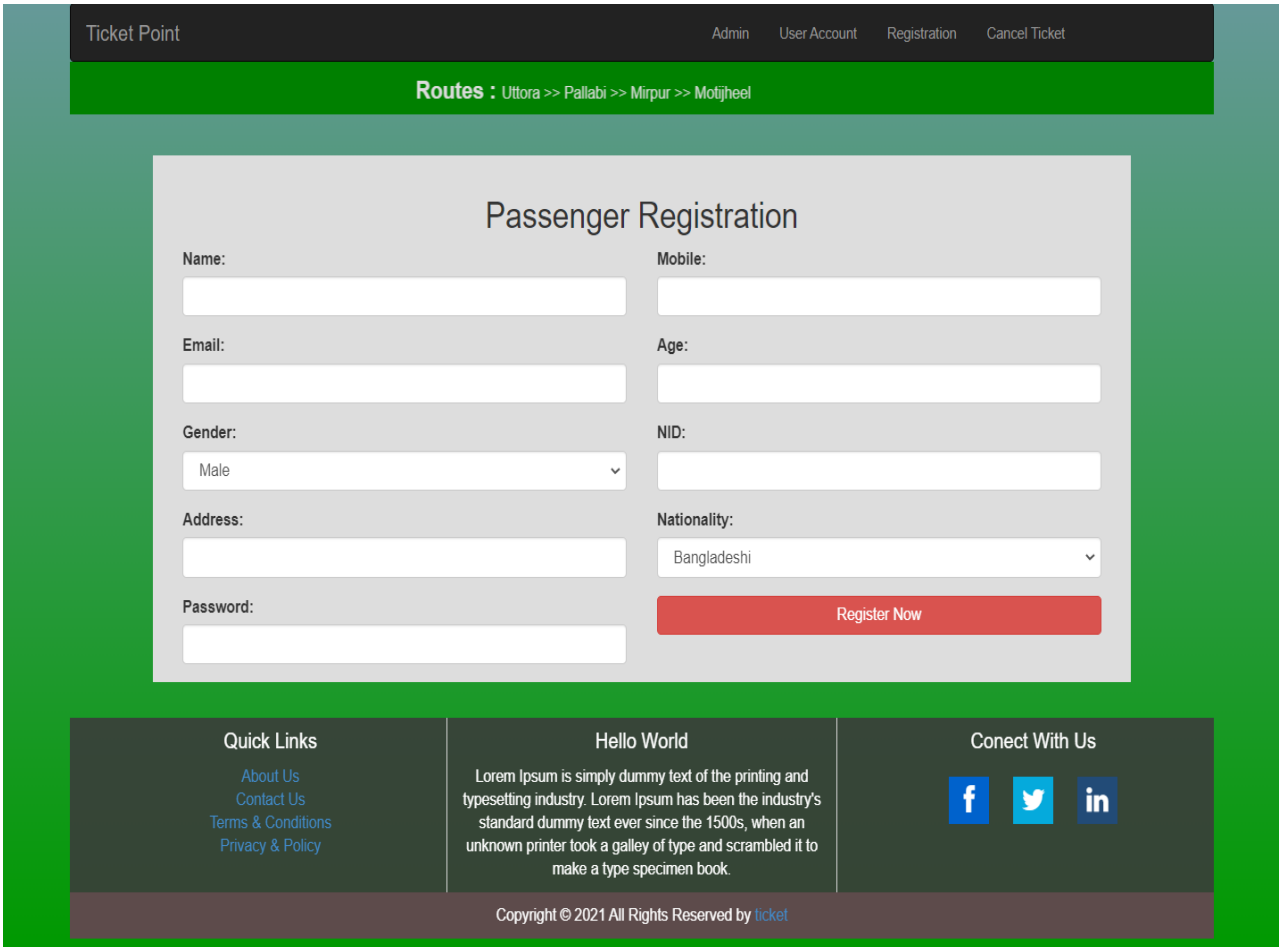


Figure 8.2: User Registration Form.

8.3. User Login Form.

For users, to access the website there must be needed a user name & password. If the user name or password is incorrect or invalid then this website will not allow to access.

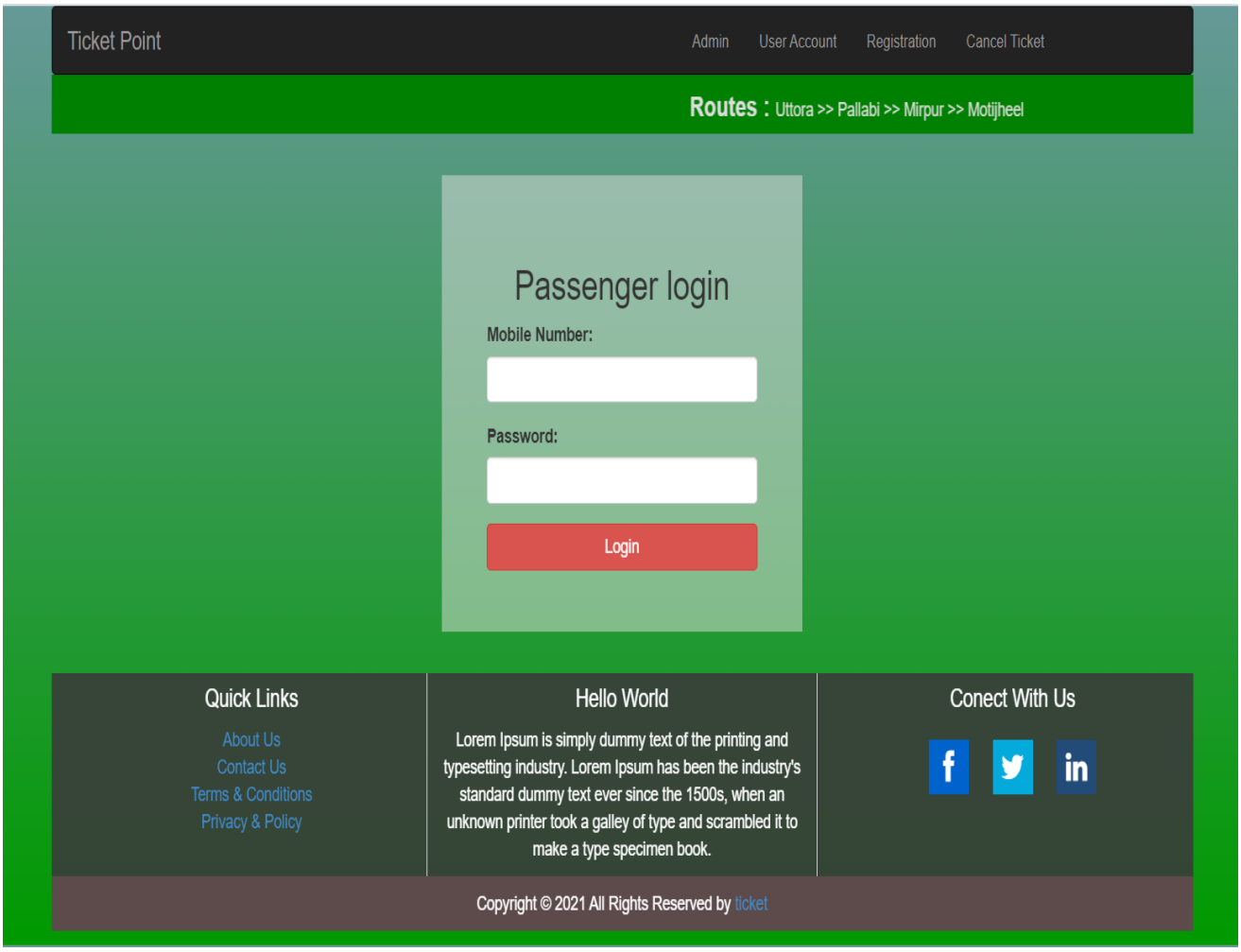


Figure 8.3: User Login Form.

8.4. User Dashboard.

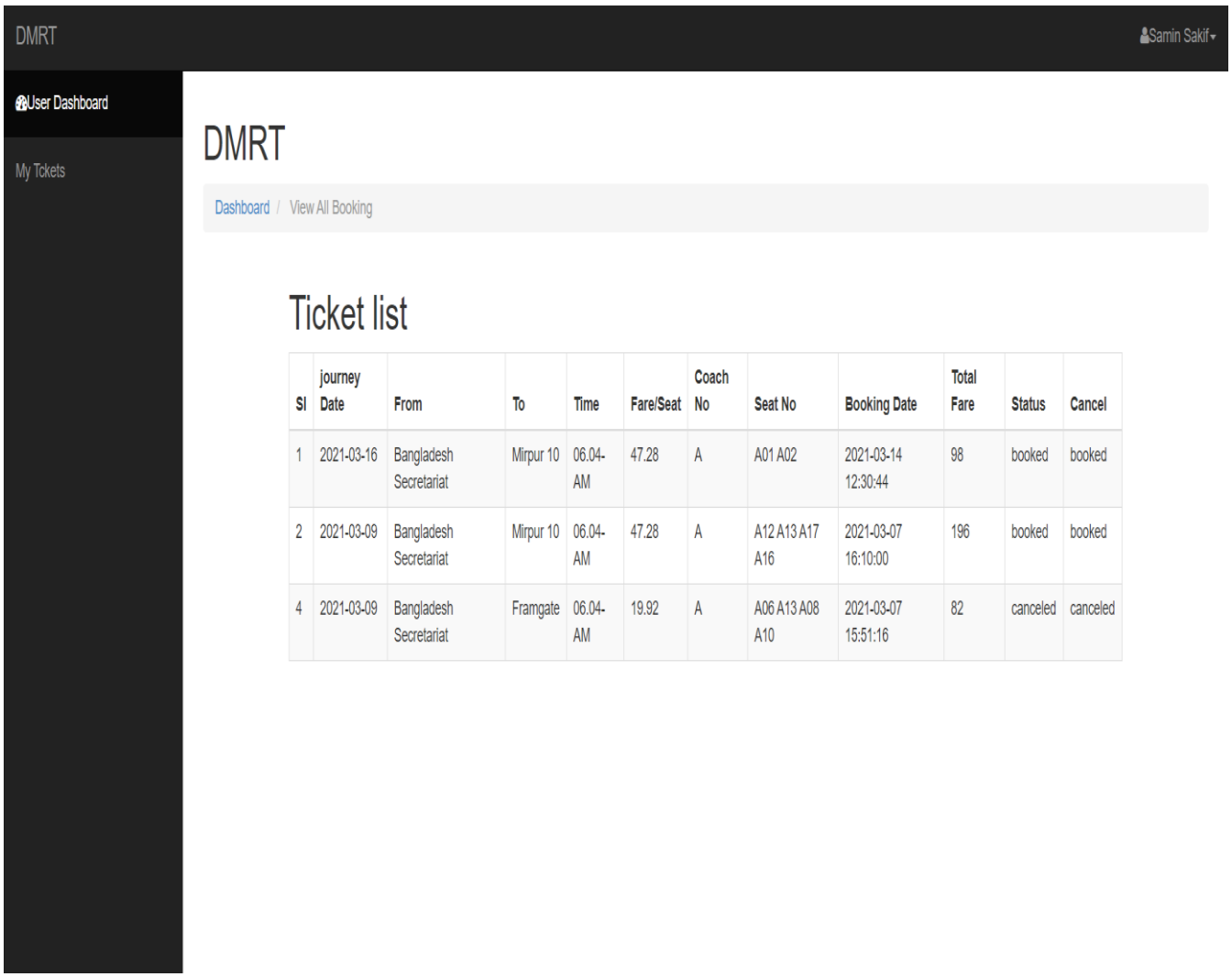


Figure 8.4: User's Dashboard.

8.5. Admin Login Form.

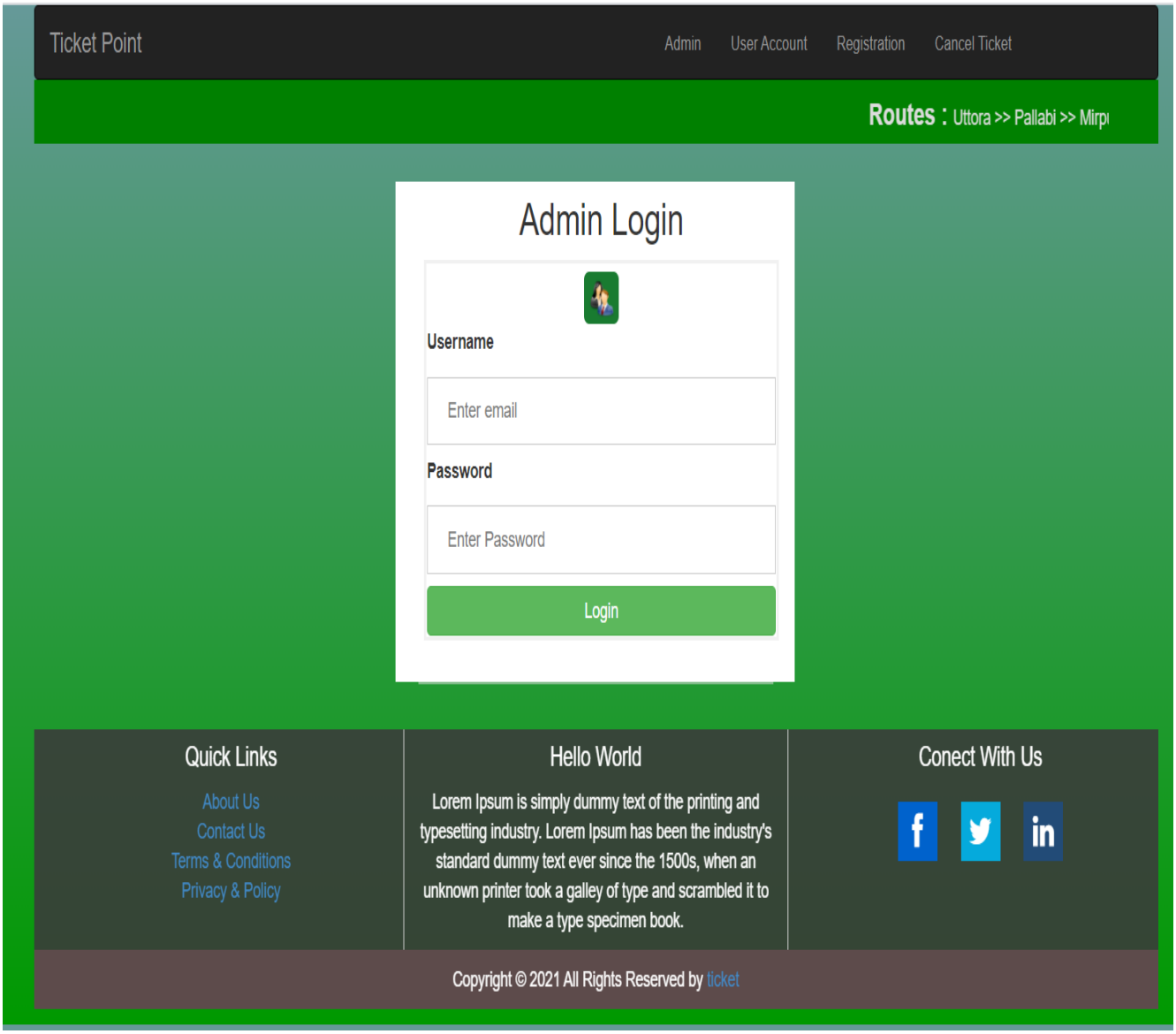


Figure 8.5: Admin Login Form.

8.6. Admin Dashboard.

Dashboard

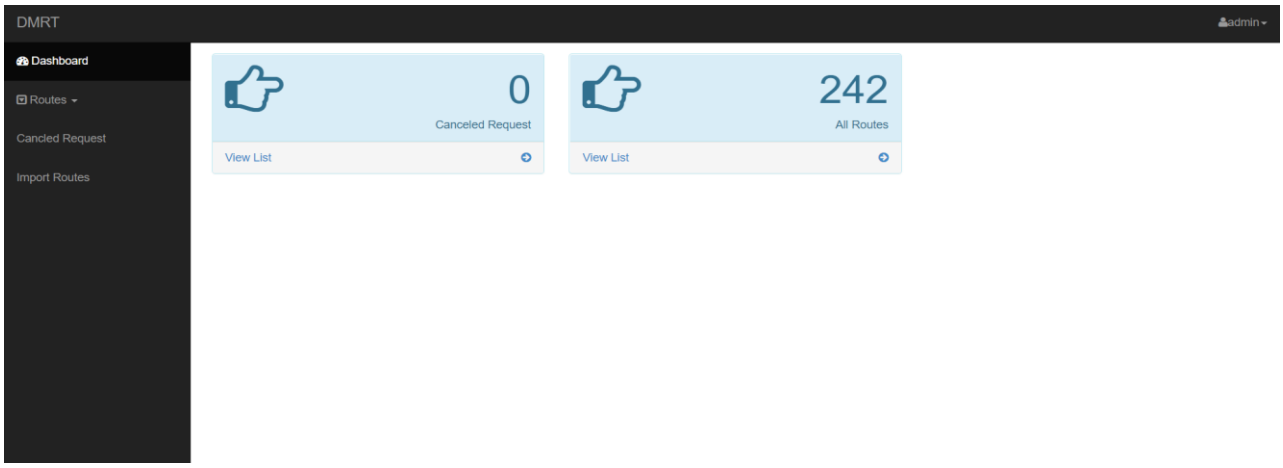


Figure 8.6: Admin's Dashboard.

Route List

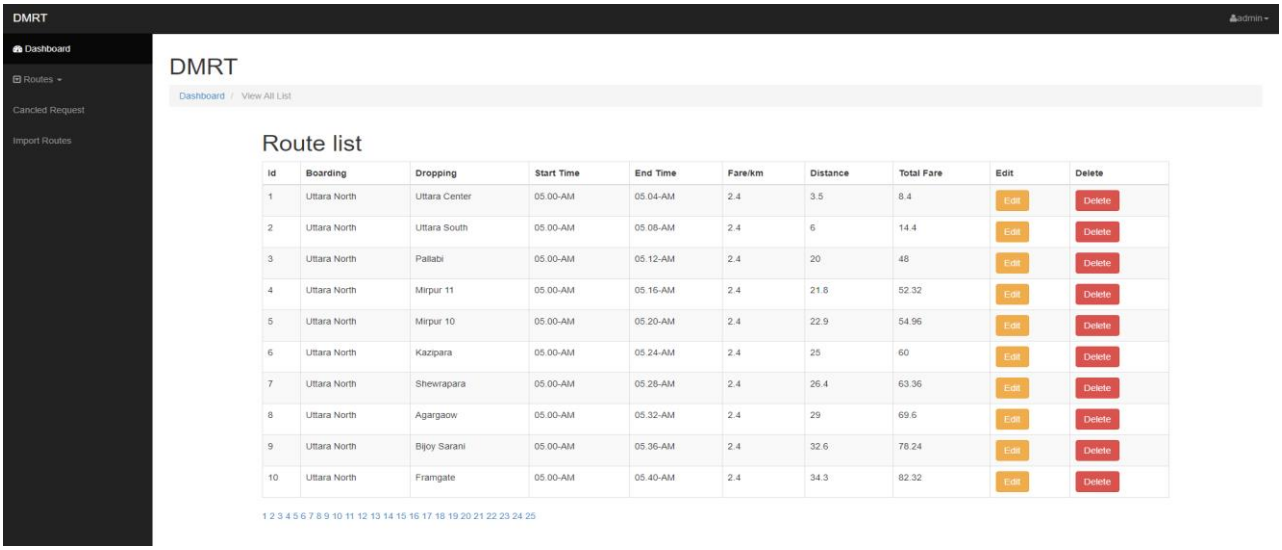


Figure 8.7: Route List.

8.7. Journey Details Selection Form.

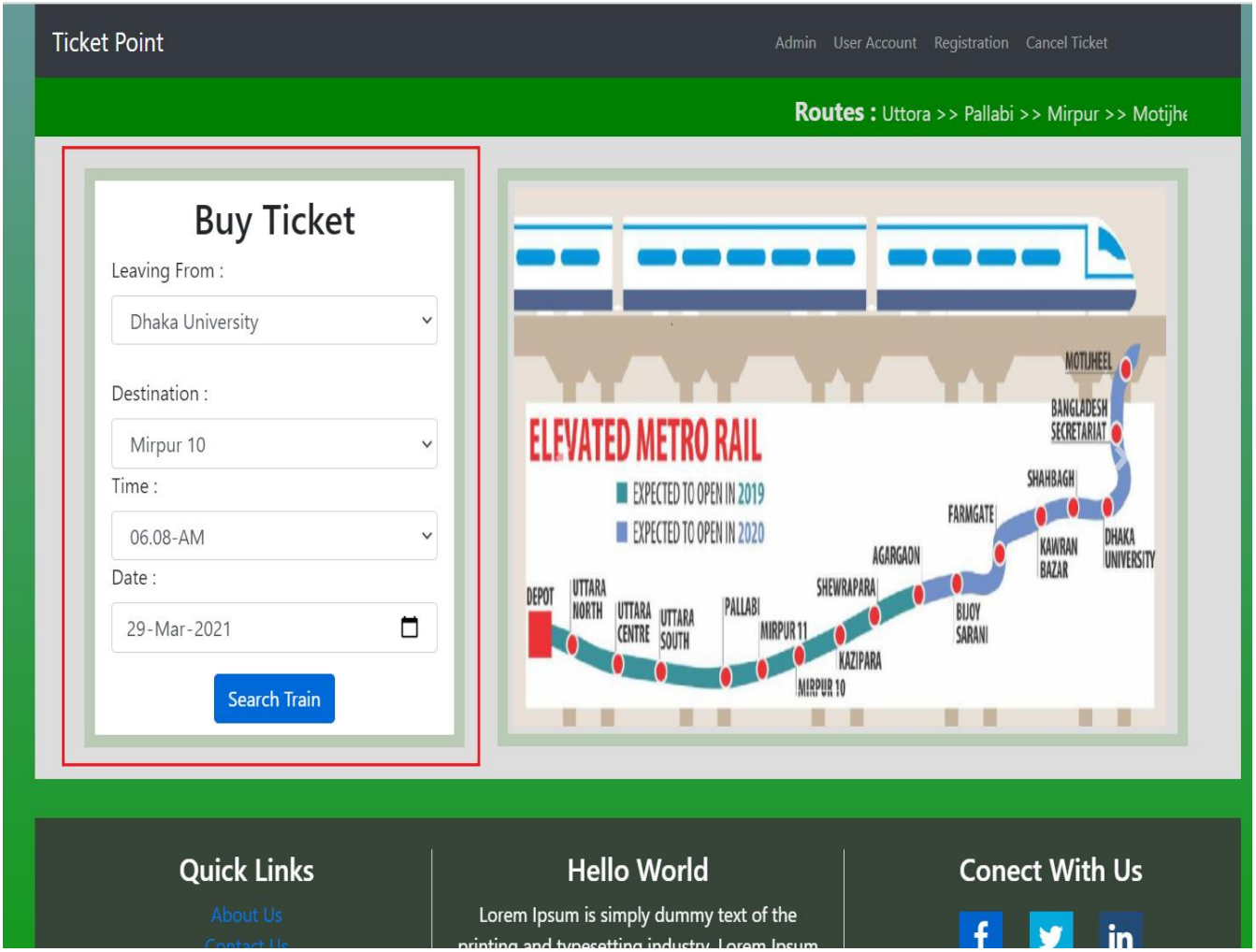


Figure 8.8: Journey Details Selection Form.

8.8. Available Coach Details.

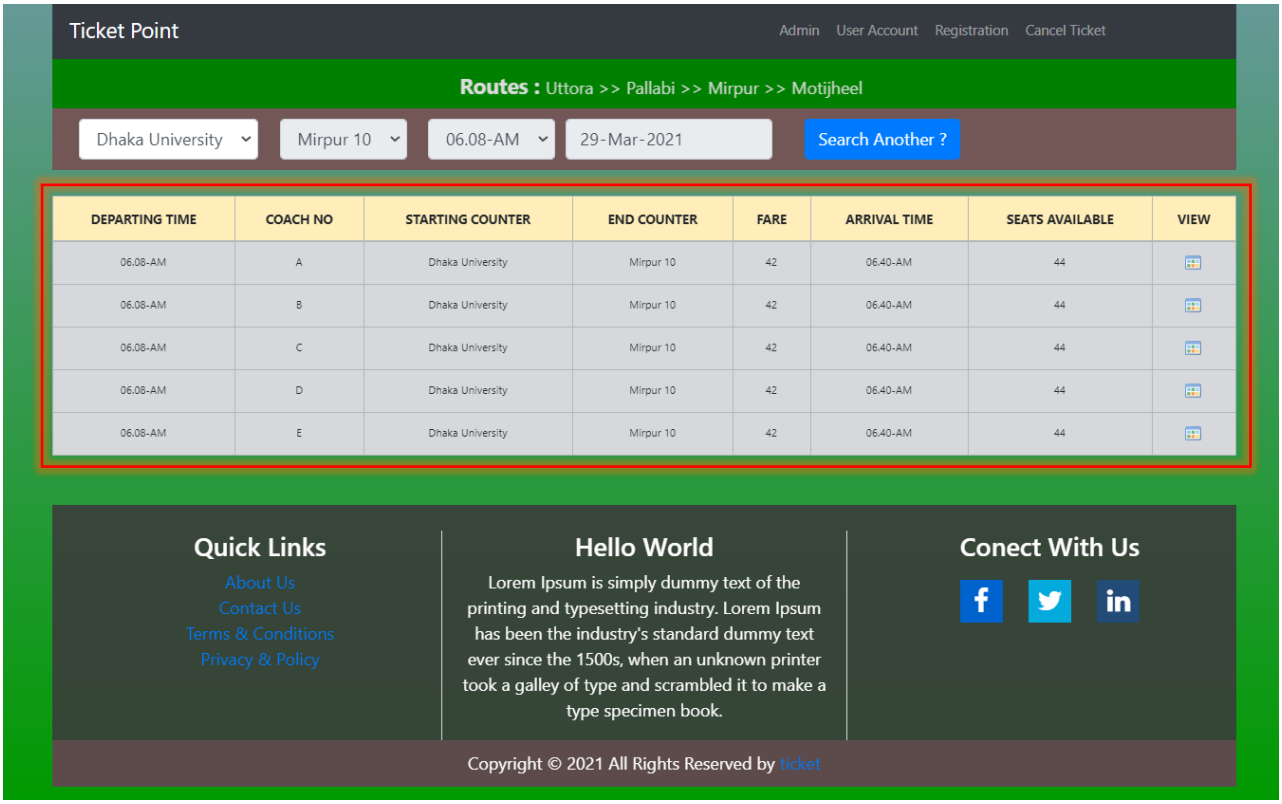


Figure 8.9: Available Coach Details.

8.9. Seat selection, ticket details & passenger's information.

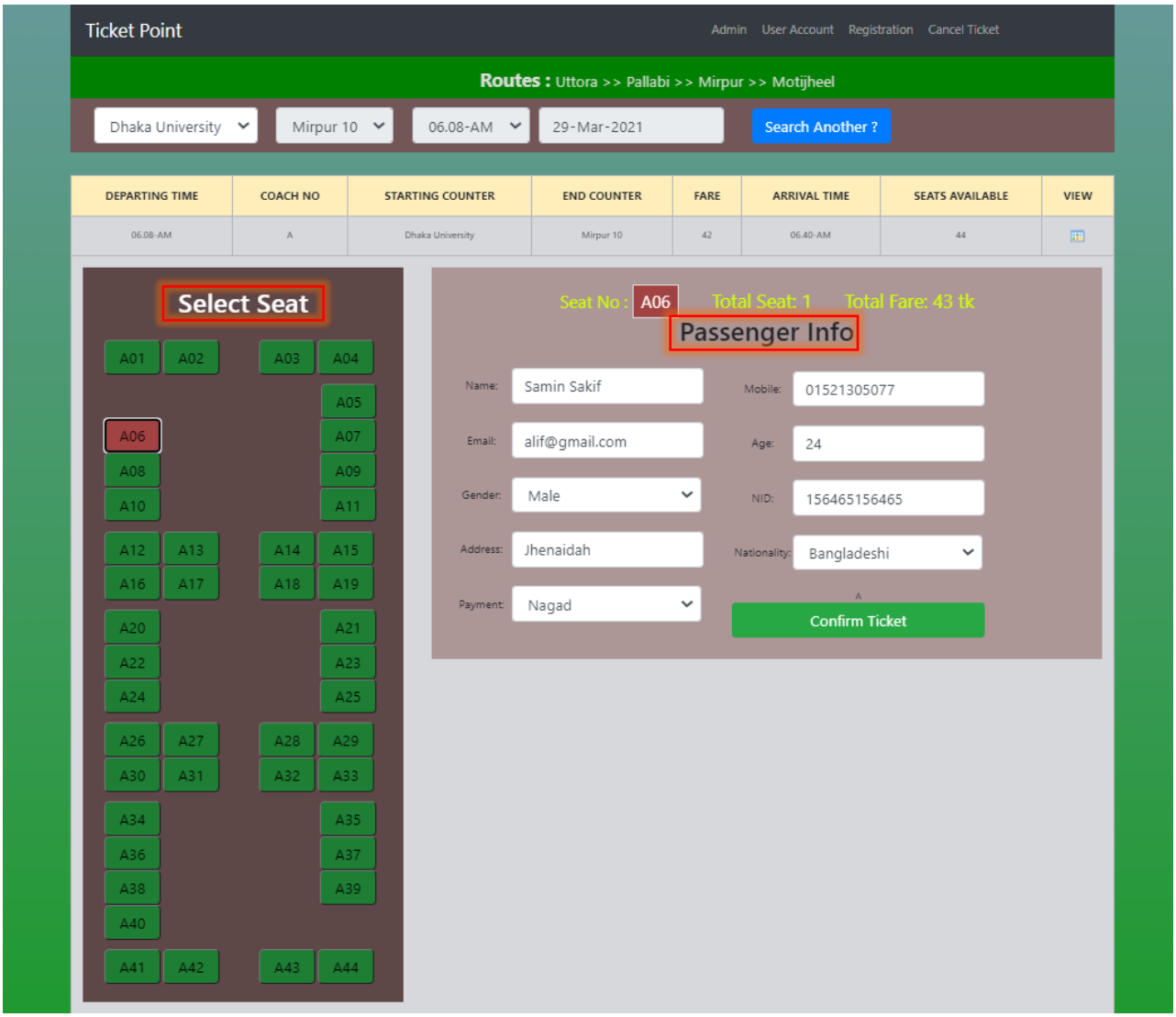


Figure 8.10: Seat selection, ticket details & passenger's information.

8.10. Payment & Confirmation.

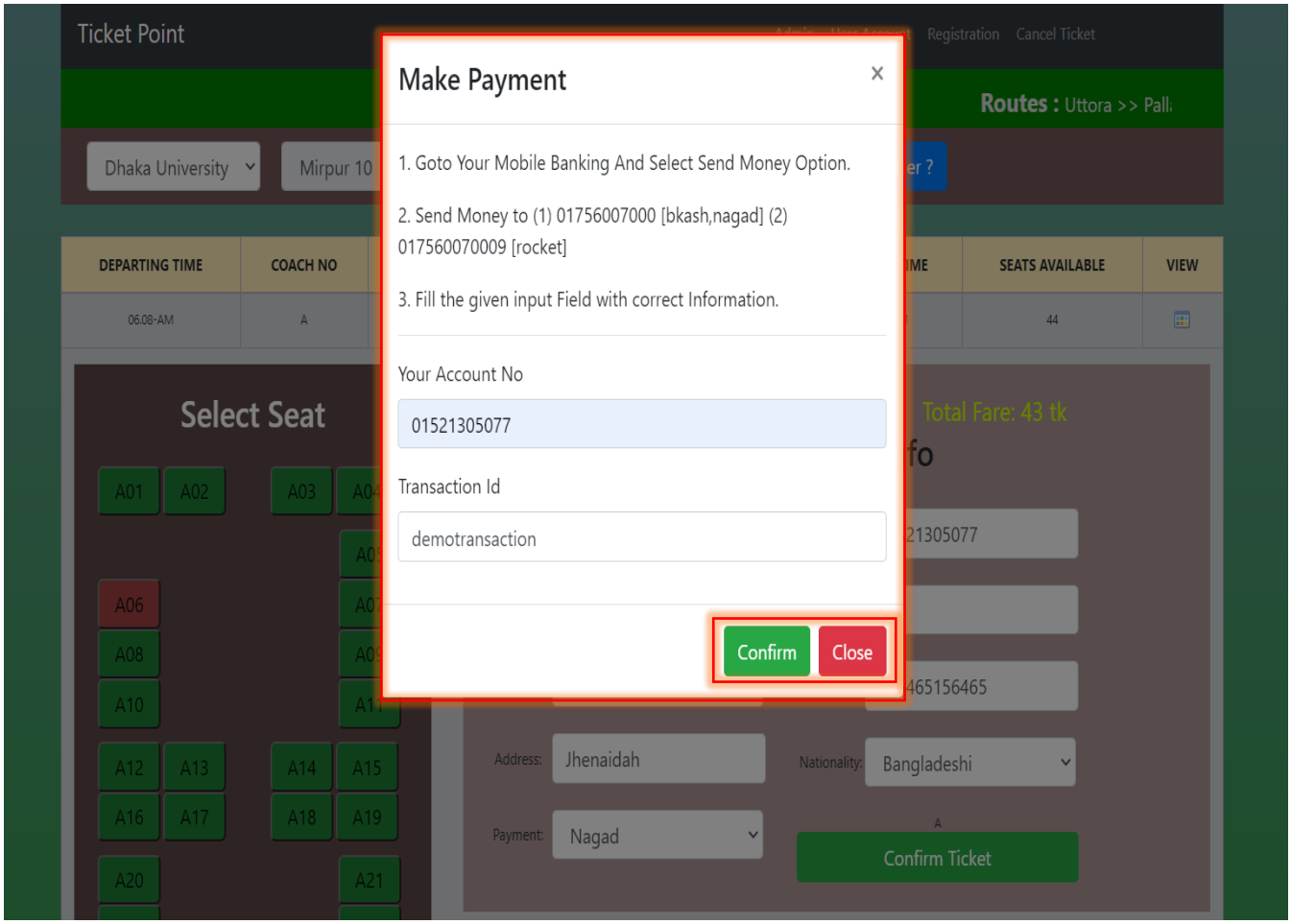


Figure 8.11: Payment & Confirmation.

8.11. Ticket.

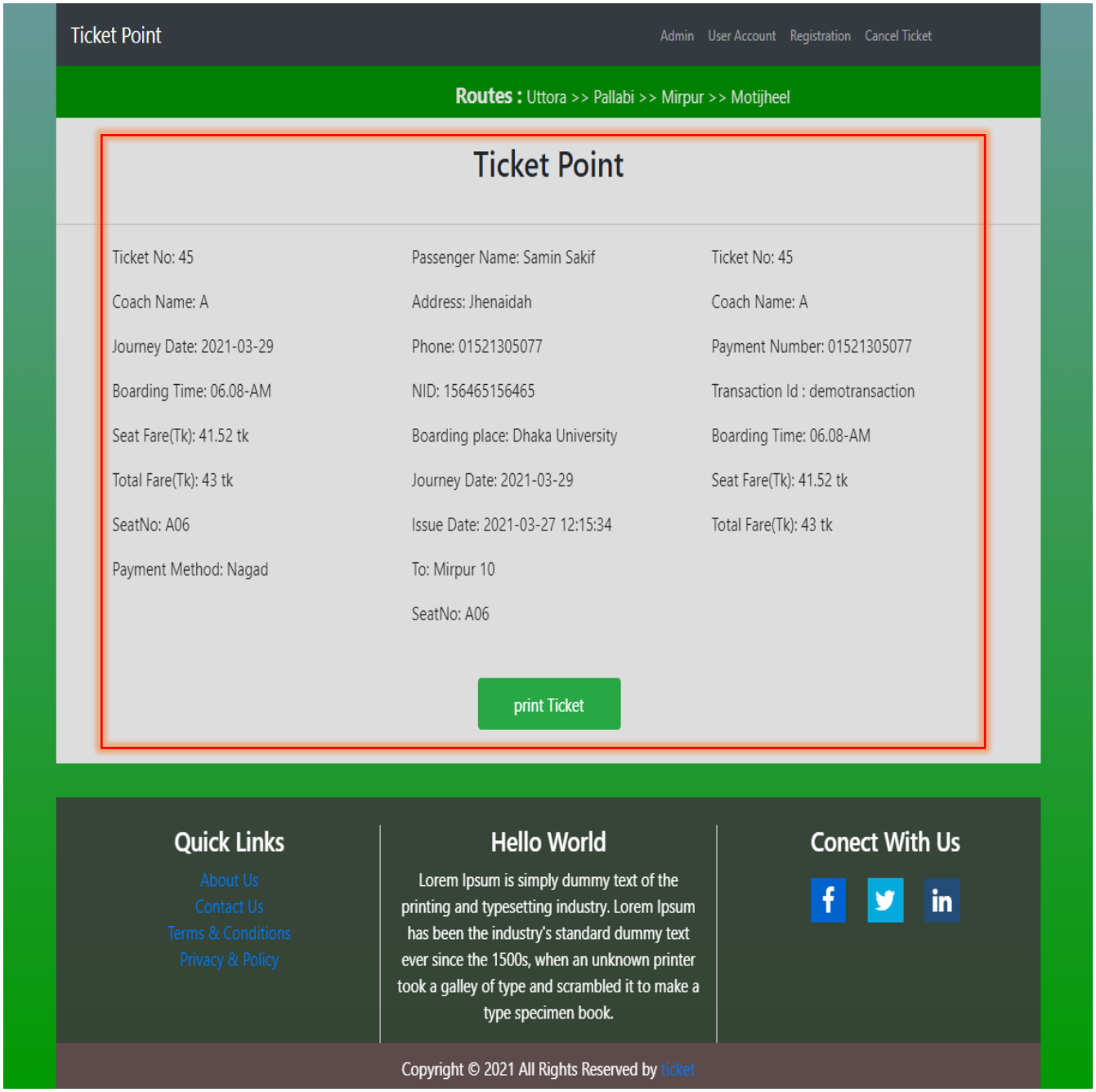


Figure 8.12: Ticket.

9. View of Database.

9.1. Database View of Booked Seat Details:

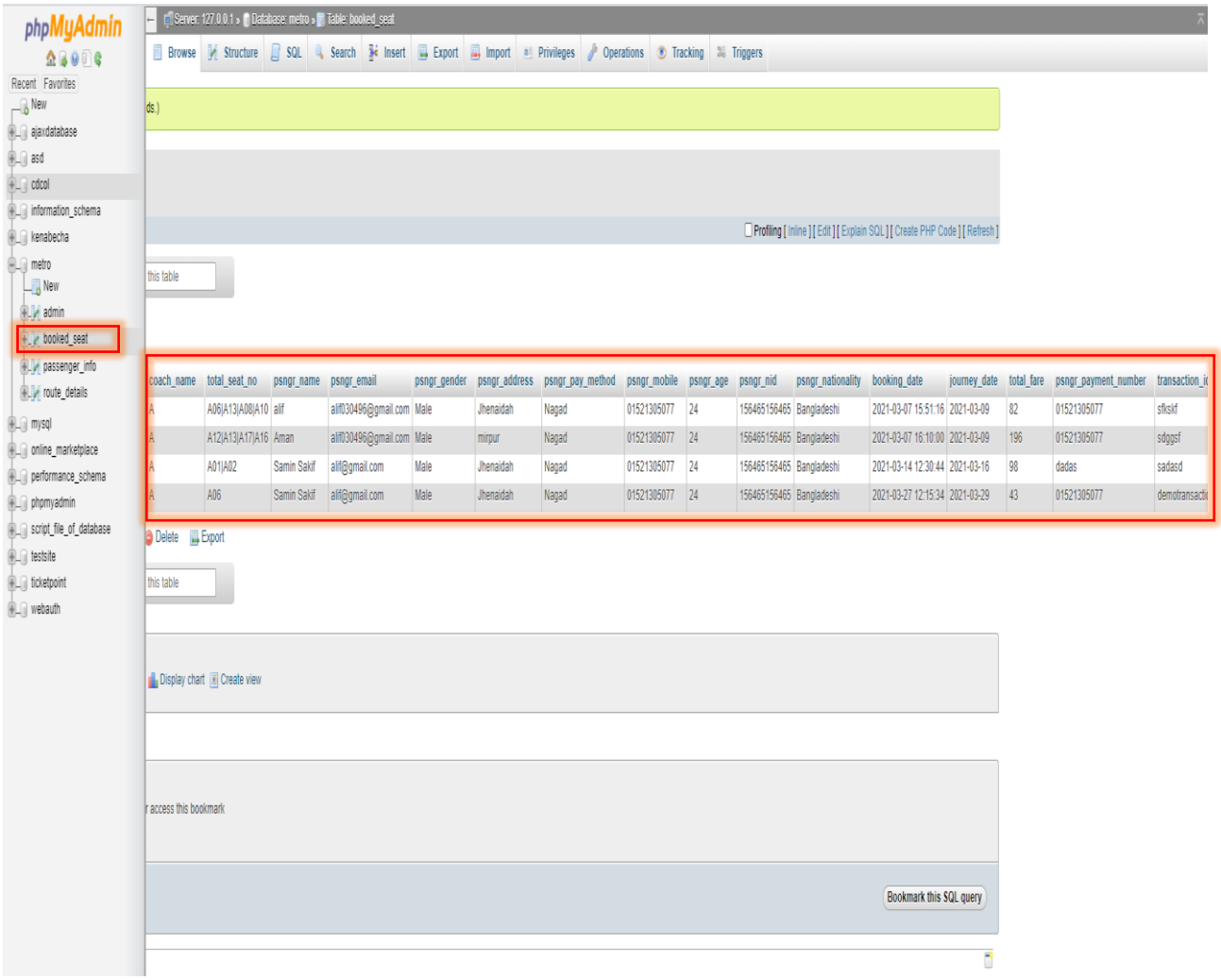
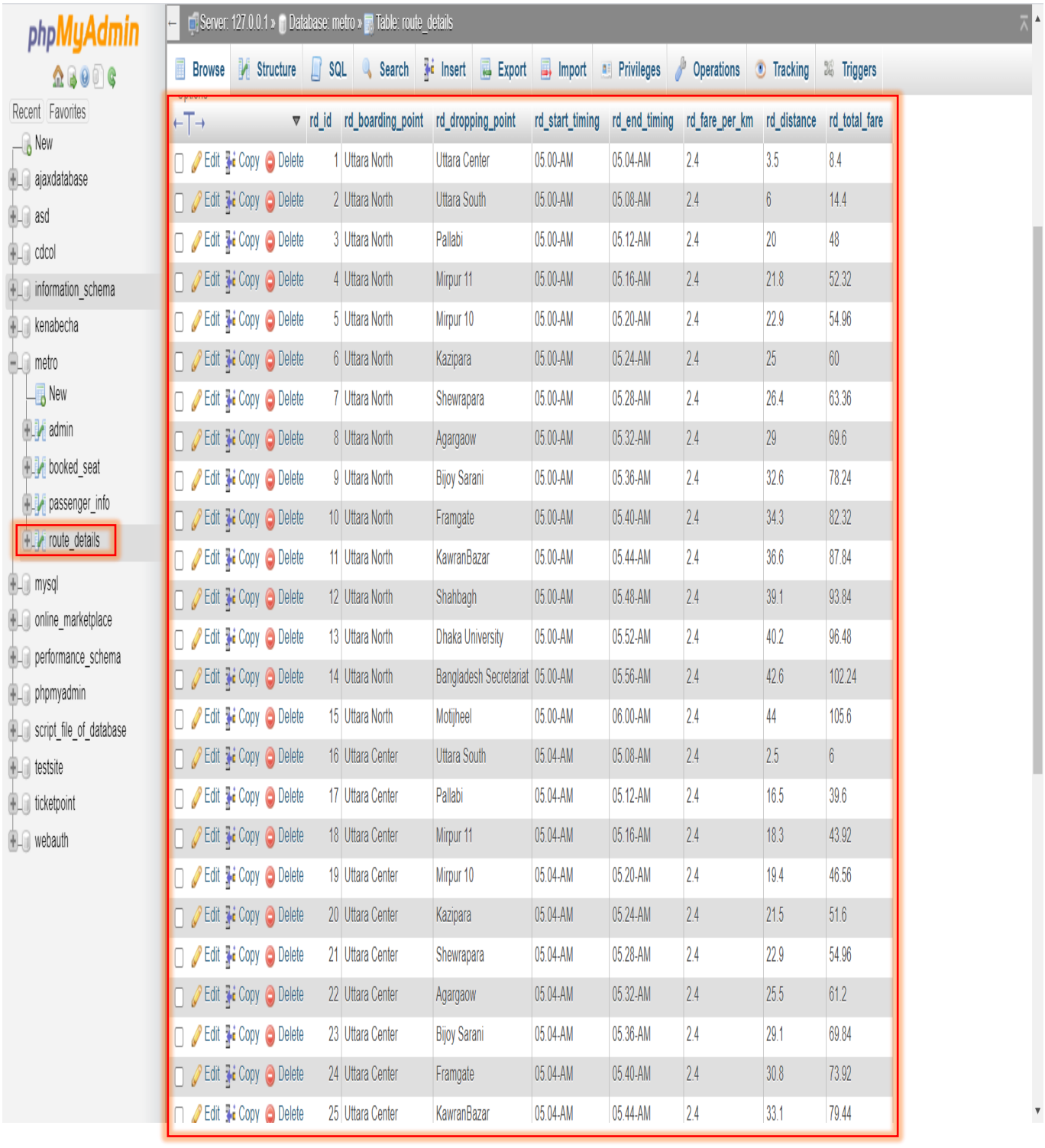


Figure 9.1: Database View of Booked Seat Details.

9.2. Database View of Route Details:



	rd_id	rd_boarding_point	rd_dropping_point	rd_start_timing	rd_end_timing	rd_fare_per_km	rd_distance	rd_total_fare
Edit Copy Delete	1	Uttara North	Uttara Center	05.00-AM	05.04-AM	2.4	3.5	8.4
Edit Copy Delete	2	Uttara North	Uttara South	05.00-AM	05.08-AM	2.4	6	14.4
Edit Copy Delete	3	Uttara North	Pallabi	05.00-AM	05.12-AM	2.4	20	48
Edit Copy Delete	4	Uttara North	Mirpur 11	05.00-AM	05.16-AM	2.4	21.8	52.32
Edit Copy Delete	5	Uttara North	Mirpur 10	05.00-AM	05.20-AM	2.4	22.9	54.96
Edit Copy Delete	6	Uttara North	Kazipara	05.00-AM	05.24-AM	2.4	25	60
Edit Copy Delete	7	Uttara North	Shewrapara	05.00-AM	05.28-AM	2.4	26.4	63.36
Edit Copy Delete	8	Uttara North	Agargaow	05.00-AM	05.32-AM	2.4	29	69.6
Edit Copy Delete	9	Uttara North	Bijoy Sarani	05.00-AM	05.36-AM	2.4	32.6	78.24
Edit Copy Delete	10	Uttara North	Framgate	05.00-AM	05.40-AM	2.4	34.3	82.32
Edit Copy Delete	11	Uttara North	KawranBazar	05.00-AM	05.44-AM	2.4	36.6	87.84
Edit Copy Delete	12	Uttara North	Shahbagh	05.00-AM	05.48-AM	2.4	39.1	93.84
Edit Copy Delete	13	Uttara North	Dhaka University	05.00-AM	05.52-AM	2.4	40.2	96.48
Edit Copy Delete	14	Uttara North	Bangladesh Secretariat	05.00-AM	05.56-AM	2.4	42.6	102.24
Edit Copy Delete	15	Uttara North	Motijheel	05.00-AM	06.00-AM	2.4	44	105.6
Edit Copy Delete	16	Uttara Center	Uttara South	05.04-AM	05.08-AM	2.4	2.5	6
Edit Copy Delete	17	Uttara Center	Pallabi	05.04-AM	05.12-AM	2.4	16.5	39.6
Edit Copy Delete	18	Uttara Center	Mirpur 11	05.04-AM	05.16-AM	2.4	18.3	43.92
Edit Copy Delete	19	Uttara Center	Mirpur 10	05.04-AM	05.20-AM	2.4	19.4	46.56
Edit Copy Delete	20	Uttara Center	Kazipara	05.04-AM	05.24-AM	2.4	21.5	51.6
Edit Copy Delete	21	Uttara Center	Shewrapara	05.04-AM	05.28-AM	2.4	22.9	54.96
Edit Copy Delete	22	Uttara Center	Agargaow	05.04-AM	05.32-AM	2.4	25.5	61.2
Edit Copy Delete	23	Uttara Center	Bijoy Sarani	05.04-AM	05.36-AM	2.4	29.1	69.84
Edit Copy Delete	24	Uttara Center	Framgate	05.04-AM	05.40-AM	2.4	30.8	73.92
Edit Copy Delete	25	Uttara Center	KawranBazar	05.04-AM	05.44-AM	2.4	33.1	79.44

Figure 9.2: Database View of Route Details.

9.3. Database View of Registered User:

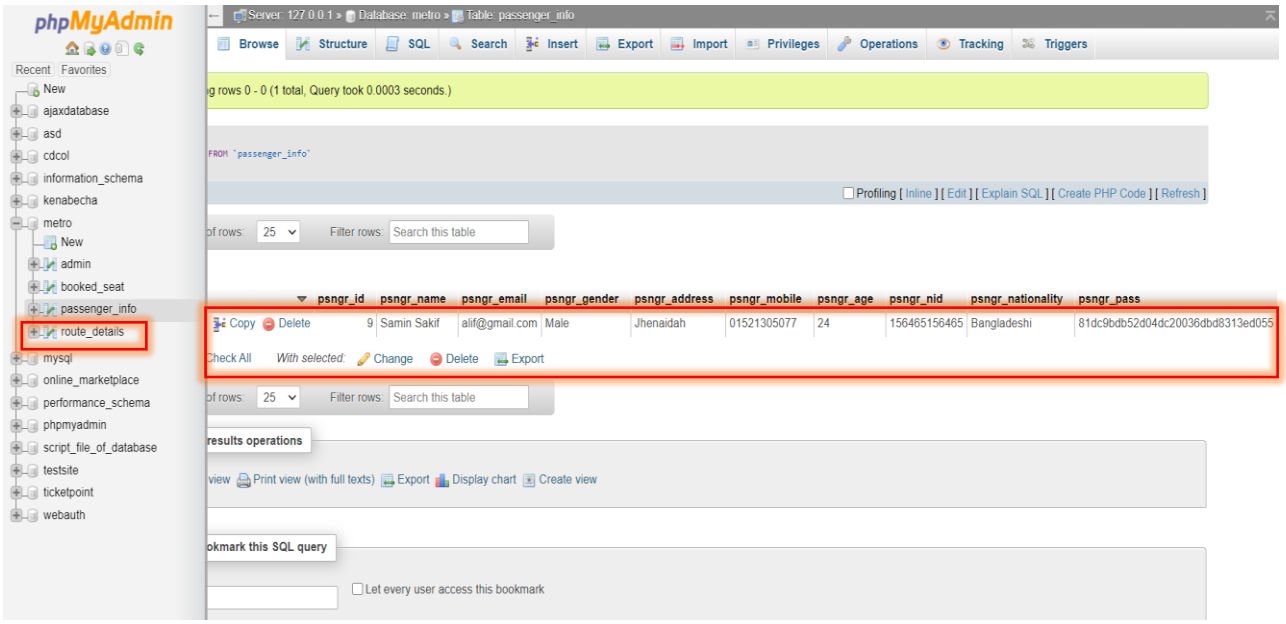


Figure 9.3: Database View of Registered User.

9.4. Database View of Registered Admin:

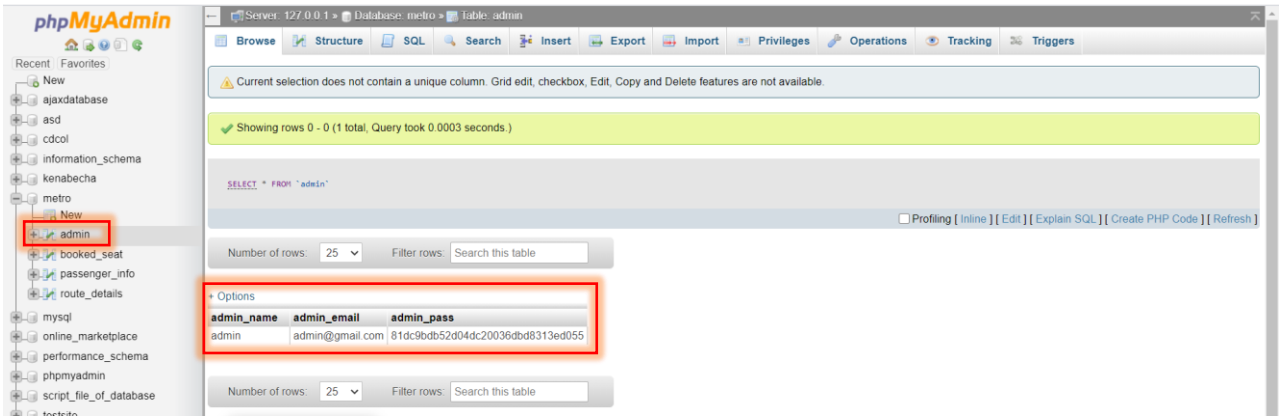


Figure 9.4: Database View of Registered Admin.

10. Conclusion

The main aim of developing Purchasing system is to provide all information that is required by the users. User friendliness is a must that is the user must get the details without complicated searching procedures.

There is an ever increasing urgency of mitigating the complex transport problems in Dhaka. Poor traffic management, lack of road spaces and the absence of organized public transport resulted in severe traffic congestion, massive delays, increased fuel wastage and resource losses. The context and the expected benefits of Mass Rapid Transit (MRT) [6] system towards achieving the sustainable public transport system in Dhaka are discussed in the paper.

Simplicity is never simple. As we have seen in this project, the process of creating a user friendly and straightforward platform that facilitates the administrators job is one filled with complexity. From understanding user requirements to system design and finally system prototype and finalization, every step requires in-depth understanding and commitment towards achieving the objectives of the project.

References

[1] *CODATU XI in Bucharest,Romania. Augmentation of mass transit mode in Dhaka, Bangladesh*; Hoque, Md Mazharul and Hossain, Tanvir. Year-[2010]

[2] *Factors in deciding Metro Rail in Developing Countries: A study on the proposed Metro Rail system for Dhaka*; Alam, Md Saniul. Vol-2075, Year-[2010], page-(9363).

[3] *Proceedings of CODATU XV: The Role of Urban Mobility in (re) shaping Cities*; Hoque, Md Mazharul and Barua, S and Ahsan, HM and Alam, Dhrubo.

[4] *DHAKA MASS TRANSIT COMPANY LTD. DHAKA MASS TRANSIT COMPANY LTD.*; Retrieved 28 January 2017.

[5] *"Muhith to sit with armed forces to resolve metro rail site dispute". The Financial Express.* ; 25 June 2011.

[6] *"PM opens work on metro, BRT".Railway Gazette.*; The Daily Star. 27 June 2016. Retrieved 25 July 2016.

[7] *"About DMTC Line 6- The Official Website for the Dhaka MRT Project". DHAKA MASS TRANSIT COMPANY LTD. DHAKA MASS TRANSIT COMPANY LTD.* Retrieved 28 January 2017.