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Project Report on

Railway Reservation System

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“Railway Reservation System”

Submitted to the Department of Computer Science & Engineering (CSE), in partial fulfillment to the requirements for the degree of second year second semester.

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Project Approval

Student's Name: **Md Sahin Alom**

Student's ID: **18CSE051**

Project Title: **Railway Reservation System**

I certify that this project "Railway Reservation System" is the original work of the above named candidate and has been done under my supervision. The work has never been submitted anywhere. It's only submitted to Bangabandhu Sheikh Mujibur Rahman Science and Technology University. I am the undersigned, recommend that the project completed by the student listed above, in partial fulfillment of B.Sc. Engineering degree requirements, be accepted by the Department of Computer Science and Engineering, Bangabandhu Sheikh Mujibur Rahman Science and Technology for deposit.

Supervisor Approval*

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Dr Saleh Ahmed

Associate Professor

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Abstract

Nowadays we can see that many management system software are used in different field. It is because management system software has many advantages rather than using manual system. Railway Reservation System is an example that will be developed for lab administrators. In this project, several modules will be applied to the Railway Reservation System .All these modules are choosing based on the lab administrator request. This project has its objectives and problem statements that give the reason why Railway Reservation System should be develop. The manual lab management method so far has its attendant problem of being tedious. In order to solve this time consuming, and repetitive manual hardware lab activities the current existing system has to be studied. Railway Reservation System, as described above, can lead to error free, secure, reliable and fast management system. This project has been developed so that carry out the processes easily and quickly, which is not possible by manual system, which are overcome by this software. This project is developed using java language and MySQL database. The system is designed as an interactive and management system.

Acknowledgement:

I would like to express my sincere gratitude to my supervisors **Dr Saleh Ahmed**, Associate Professor, Department of Computer Science & Engineering (CSE), Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, Bangladesh and for providing their invaluable guidance, comments and suggestions throughout the course of the project.

I perceive this as a good opportunity for my career development.

I am very grateful to the great creator for completing the project.

Md Sahin Alom

18CSE051

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CHAPTER - 1

INTRODUCTION

1.1 Introduction:

The "Railway Reservation System" has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the department of computer science and engineering, BSMRSTU to carry out operations in a smooth and effective manner. The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus by this all it proves it is user-friendly.

1.2 Motivation & Aims:

This section explains the aim and motivation of the project “Railway Reservation System" with describing necessity of such a system and specifies the scope of each task.

Presently an enormous amount of lab equipment (some equipment are very expensive) have been used by students and staff from department of CSE, during their day to day study/teaching activities like research and developments, lab assignments, projects, thesis and lectures. The records of lab equipment are maintained in a written form by lab administrators. This takes lots of time of both lab administrators. In the meantime it is the responsibility of lab administrator to find the appropriate how many equipment are available, location of a specific equipment since in the railway we use many small equipment like IC, for a specific assignment / experiment how many equipment we have to purchase, may be at the end of each semester to check whether all the equipment are available in the lab or not, to get corrective actions when missing/damaging equipment. Therefore it is obvious that it is a long, time consuming process and the existing system is not so efficient. “Design and Implementation of Railway Reservation System” comes as a better solution with many flexible and convenient features, allowing lab administrators to maximize efficiency while reducing time wastage. It will gives detailed information available equipment.

1.3 Objectives:

Railway reservation system is developed for to automate the railways reservation system. It includes modules required to successfully operate railways reversion process smoothly. It has train master to add modified train information, train schedule to enter train journey details include all the station name, arrival time and departure time. It includes automatic fair calculation as per the distance between two stations. The railway reservation system facilitates the passengers to enquiry about the trains available on the basis of source and destination, booking and cancellation of tickets, enquiry about the status of the booked ticket.

Railway reservation system, has described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus it will help organization it better utilization of resources. Administrator of the project, with the help of a password, can enter new train record, display all train records, modify train records and delete train records. The record of train includes its number, name, source, destination, and days on which it is available, whereas record of train status includes dates for which tickets can be booked, total number of seats available, and number of seats already booked.

CHAPTER - 2

SYSTEM ANALYSIS

2.1 System Environment:

This project is built with the help of some hardware and software tools. They are listed and described blow.

2.1.1 Hardware equipment:

- Operating system: Windows 10
- Processor: core i5, 8 generation
- RAM: 4GB
- Monitor: minimum resolution of 1024 x 768 s

2.2 Software Requirement Specification:

This project is built with the help of some software tools. They are listed and described blow.

2.2.1 Software equipment:

- Net beans 8.2
- XAMPP
- MySQL
- Browsers

Net Beans:

Net Beans IDE is a free, open source, integrated development environment (IDE) that enables you to develop desktop, mobile and web applications. The IDE supports application development in various languages, including Java, HTML5, PHP and C++. The IDE provides integrated support for the complete development cycle, from project creation through debugging, profiling and deployment. The IDE runs on Windows, Linux, Mac OS X, and other UNIX-based systems.

XAMPP:

XAMPP is an abbreviation where X stands for Cross-Platform, A stands for Apache, M stands for MYSQL, and the Ps stand for PHP and Perl, respectively. It is an open-source package of web solutions that includes Apache distribution for many servers and command-line executable along with modules such as Apache server, Maria DB, PHP, and Perl.

MySQL:

MySQL is the world's most popular open source database. With its proven performance, reliability and ease-of-use, MySQL has become the leading database choice for web-based applications, used by high profile web properties including Facebook, Twitter, YouTube, Yahoo! and many more. MySQL Heat Wave is a fully managed service that enables customers to run OLTP, OLAP, and machine learning workloads directly from their MySQL Database. Heat Wave boosts MySQL performance by 5400x.

Browsers:

To collect some information, I used some internet browser like Google chrome, Mozilla Firefox, UC browser and Opera Mini. A browser is an application program that provides a way to look at and interact with all the information on the World Wide Web. This includes Web pages, videos and images. The word "browser" originated prior to the Web as a generic term for user interfaces that let you browse (navigate through and read) text files online. Many people will use web browsers today for access to the internet and is seen almost as a necessity in how many navigate their daily life

CHAPTER - 3

SYSTEM DESIGN

3.1 Features of Project:

This project is built with the help of some feature. They are listed and described blow.

- **Log In:** For accessing in the software, at first you have to enter your authority username and password
- **Add Train:** In this operation, you can add a new equipment with the proper information like Name, Quantity, Location and Comment in the database of this software.
- **Edit Train:** In this section, you can update your previously added equipment information like Name, Quantity, Location and Comment.
- **Search Train:** In this section you can search an equipment and know all the information about it.
- **Total Price:** Here you can see all the information about all added equipment.
- **Purchase Tickets:** In this part, you can make a report about how many equipment according to available equipment for a specific assignment / experiment or lecture.

Problem statement for railway reservation system software has to be developed for automating the manual reservation system of railway. The system should be standalone in nature. it should be designed to provide functionalities like booking of tickets in which a user should be able to applied for tickets of any train and of any class a limitation is imposed when the number of tickets for which user apply is greater than available seats or no seats are available.

3.2 Implementation:

In this chapter I described how to implement this project. The project is developed using java language and MySQL database. To implement this project, I have used many loops (for, while, do-while), control statements (if, if-else, if-else if- else), header files, class, object, OOP features of java, file read/write from database, string processing, java frame etc.

In Jan 2022

In this month we completed login and add train window.

Log In: At first log in the authority panel. When an administrator enter the username and password, it has checked that this username and password by reading information from database. If wrong username or password has been given then it will show a message in the window otherwise access is granted.

Add Train: To add a equipment in the database, administrator have to enter equipment information (Name, Quantity, Location, Comment). Then it is checked that this equipment is in the database or not from database by using file reading operation. If this equipment is not in the list then it is added to the database otherwise show that it is already added.

In Feb 2022

In this month I completed edit and search option.

Edit Equipment: In this section you can update an equipment and also you can delete the equipment from the database. For doing both update and delete, at first you have to search an equipment by name and then you can do both operations. If the search equipment is not in the database then it will show an "Invalid information" message.

Search Equipment: To search a equipment you have to enter the name of the equipment, if that equipment is in the database then it will show all the information (Name, Quantity, Location, Comment) otherwise it will show an "Invalid information" message.

In Mar 2022

In this month I completed total and purchase options.

Total price: In this section, you can see all equipment information in a tabular form.

Purchase tickets: In this section, for a assignment or experiment, if you you enter how many equipment are needed, then it will make a report how many equipment you have to purchase according to the available equipment in the hardware lab.

3.3 Data Flow Diagram:

This picture is data flow diagram of Railway Reservation system. Here some option ticket reservation, customer, schedule manager, and train representative. Whereas record of train status includes dates for which tickets can be booked, total number of seats available, and number of seats already booked.

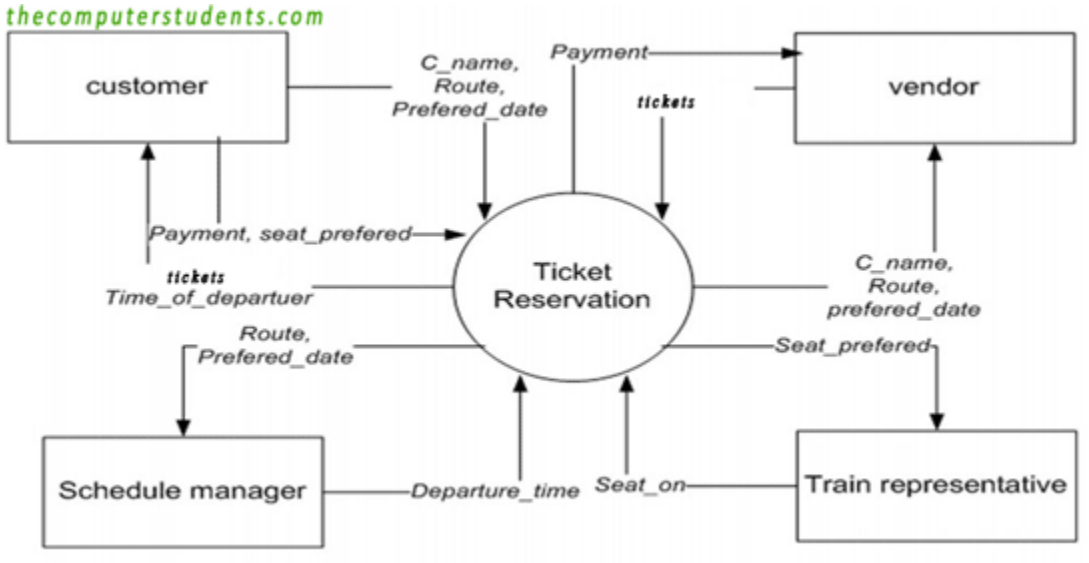

Figure 1: Data Flow Diagram

CHAPTER 4

SYSTEM TESTING

4. 1 Screen Shots:

Login page:

If you have a Username and Password, you can login or cancel with the information. If you assign right Username and Password then you can login otherwise you cannot. After assign right username and password click login button.

Figure 2: Login Page

Main Page:

This is main page of the project of Railway Reservation System. If we click ‘Add Train’ button then we see ‘Add Train’ window, if we click ‘Reservation’ button then we see Reservation window. In this is connected to login page. After successful login you can see this page.

Figure 3: Main Page

Add Train:

If you want to add new train fill up train no, train name, start place, end place and price can be done by clicking on the “Add” button. If you want to edit train details click edit button, for delete train click ‘delete’ button, for reset click ‘reset’ button.

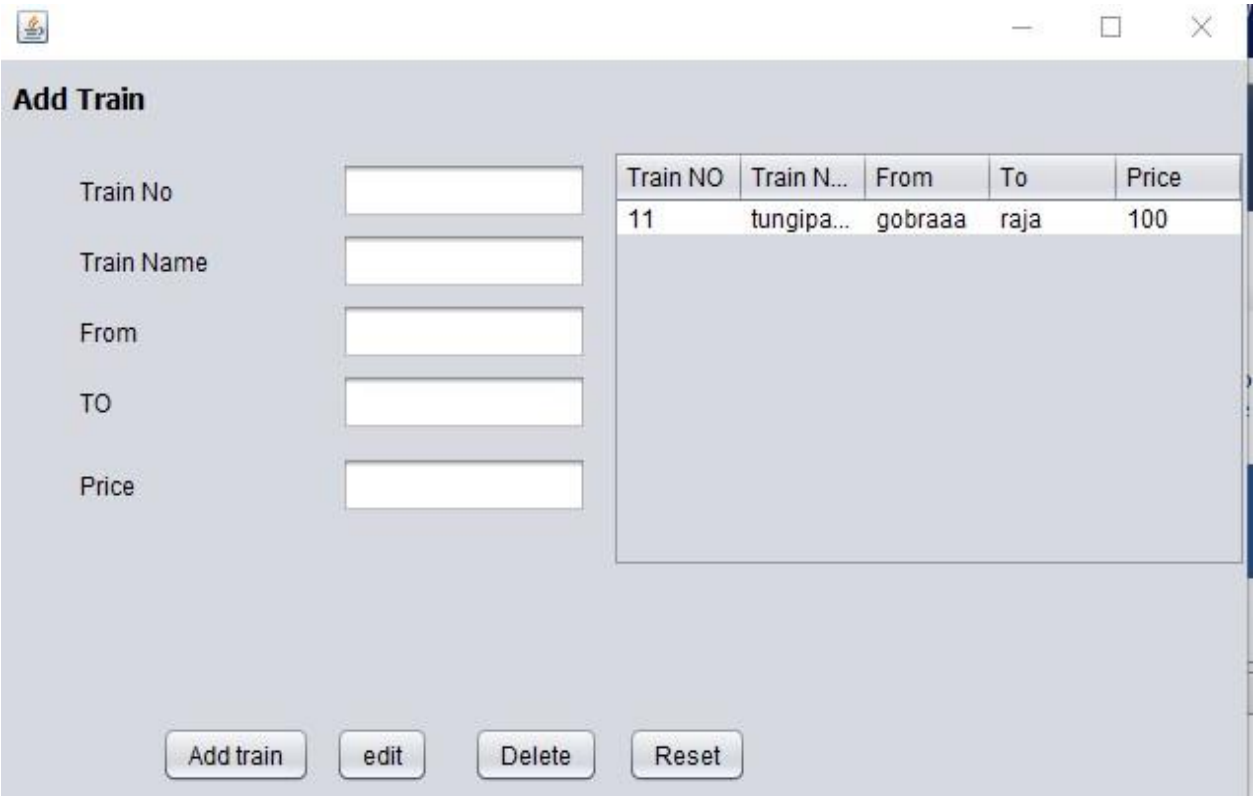

Figure 4: Add Train Window

Reservation Page:

This is reservation page. In this page passenger are used for purchased ticket. At first passenger are fill up the form and purchase tickets. If you click search button then find the train, after fill up the page you click reserve button.

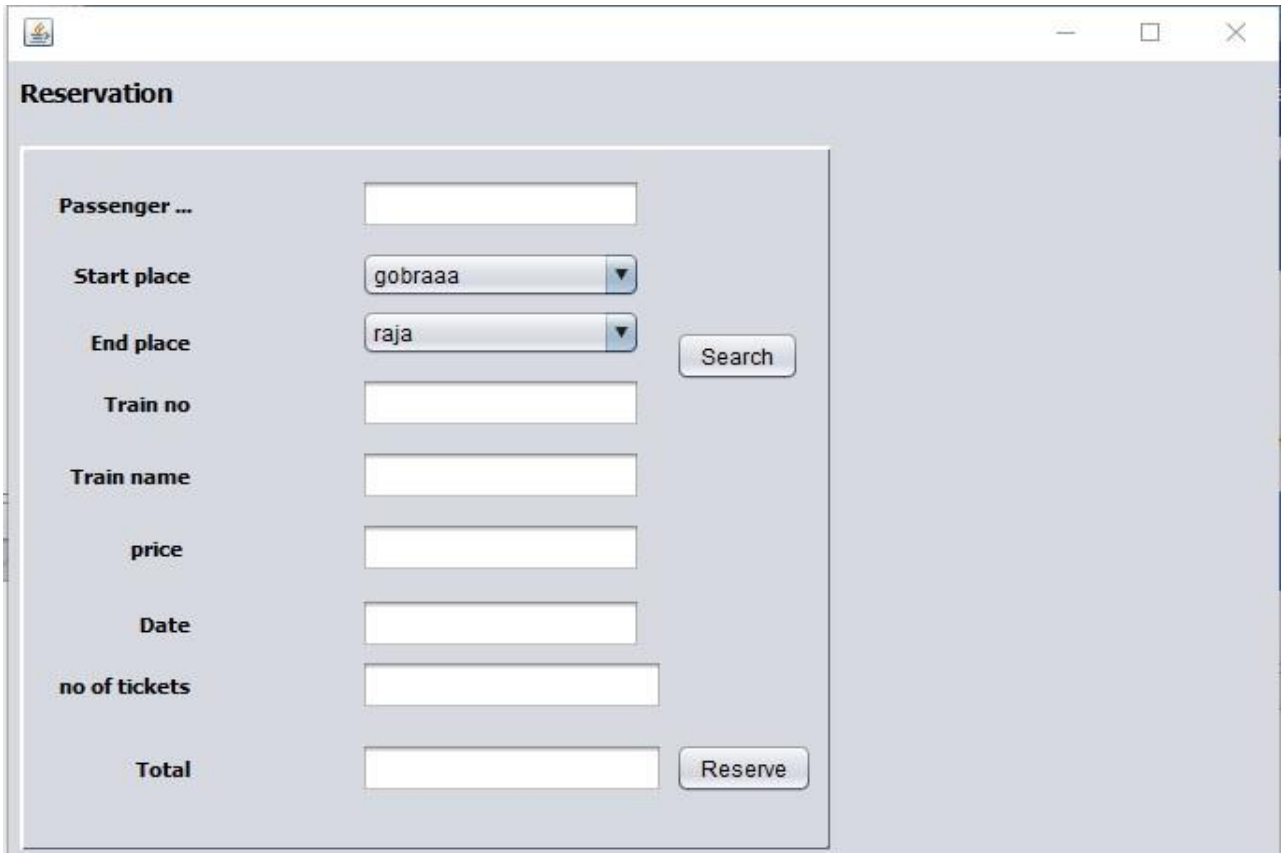

Figure 5: Reservation Window for Users

Local host:

All information are record here. Recoded all train details in train details folder. All passenger information are record in reservation table.

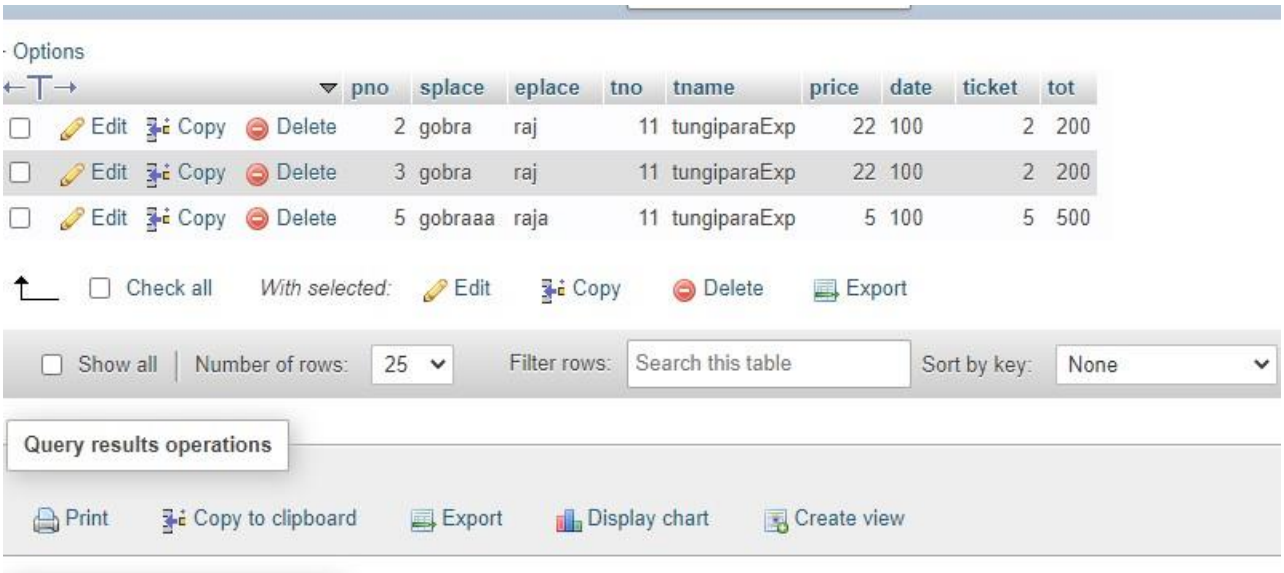

Figure 6: Record in Local host

CHAPTER 5

RESULT AND EVALUATION

5.1 Result of Railway Reservation System:

Railway reservation system is developed for to automate the railways reservation system. It includes modules required to successfully operate railways reversion process smoothly. It has train master to add modified train information, train schedule to enter train journey details include all the station name, arrival time and departure time. It includes automatic fair calculation as per the distance between two stations.

If the numbers of records are very large then user has to just type in the search string and user gets the results immediately. The editing is also made simpler. The user has to just type in the required field and press the update button to update the desired field. The Books and Students are given a particular unique id no. So that they can be accessed correctly and without errors. Our main aim of the project is to get the correct information about a particular student and books available in the library.

5.2 Limitation of the project:

Al though I have put my best efforts to make the software flexible, easy to operate but limitations cannot be ruled out even by me. Though the software presents a broad range of options to its users some intricate options could not be covered into it; partly because of logistic and partly due to lack of sophistication.

List of limitations:

- Have not user registration system.
- Can’t track of which teams or individuals uses the equipment.
- Can’t change password using email.
- Can’t add the picture of the equipment.

CHAPTER 6

CONCLUSION & FUTURE SCOPE

6.1 Conclusion:

The "Railway Reservation System" has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. Railway Reservation System will definitely minimize errors and will be a very good replacement to existing repetitive manual process. This will help speed up our daily lab work. It is very easily to use. This Railway Reservation System will remove all the problems of manual systems and will do better performance in lab work.

6.2 Future scope:

The Railway Reservation System is a big and ambitious project. I am thankful for being provided this great opportunity to work on it. As already mentioned, this project has gone through extensive research work. On the basis of the research work, we have successfully designed and implemented Railway Reservation System. Though this project is very helpful and working greatly, but it have some limitations which I will try to solve in future. We will add more features and information in detail. In future I will add online Lab management system and student registration, so that it can track the information about when the equipment are used by which group/team or individuals. I will add the feature of adding equipment picture when they are added in the list. I will add the features of changing password using email.

6.3 References:

- **https://www.tutorialspoint.com/swing/index.htm**
- **https://www.codecademy.com/**
- **https://www.javatpoint.com/java-tutorial**