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ONLINE BUS

RESERVATION SYSTEM

Traveling is a large growing business across all countries. Bus reservation system deals with maintenance of records of details of each passenger. It also includes maintenance of information like schedule and details of each bus. We observed the working of the Bus reservation system and after going through it, we get to know that there are many operations, which they have to do manually. It takes a lot of time and causing many errors while data entry. Due to this, sometimes a lot of problems occur and they were facing many disputes with customers. To solve the above problem, and further maintaining records of passenger details, seat availability, price per seat, bill generation and other things, we are offering this proposal of computerized reservation system.

ABSTRACT

- The online bus reservation system is a web based application that permits visitors to check the availability of bus tickets, buy bus tickets and pay for the tickets online

- The web based system also permits bus ticket vendors to reserve bus tickets, cancel reserved tickets and to generate reports

- The system also acts as an operational tool for bus travel companies to operate their organizations effectively

INTRODUCTION

- The system is an online bus ticket booking system made for any bus travel agency, which in most cases the agencies have problems with their ticketing and travel schedule process

- This system is intended to computerize the manual ticketing system available at the bus travel agency in order to provide a better customer service and experience

- The online bus reservation system enables the bus travel agency to sell bus tickets online. Online ticketing will be the best and easiest way to book travel tickets. The online bus ticket reservation system enables the customer to buy bus tickets, make payment, cancel reservation and ask for information online easily

SYSTEM ANALYSIS

OBJECTIVE:

Create a secure and stress free online bus ticket booking

PROBLEM:

Customers book tickets manually by queuing in lines at the bus station or go to travel agents who in turn book tickets for them. Which is actually a tedious process and leads to time wastage

SOLUTION:

Create an online ticket booking system that is fully secured and scalable

SCOPE:

The reservation system has three modules. First module helps the customer to enquire the availability of seats in a particular bus at particular date, the second module helps him to reserve a ticket and with the third module he can cancel a reserved ticket. The current bus booking system relies on buying tickets from the conductor for commuting to and from a location through public transportation. The task can be tedious if the number of commuters is large.

ANALYSIS OF THE CURRENT SYSTEM

The manual mode of ticket booking and ticket purchasing is by phone calls, direct contact or through traditional messengers that are attached to offices of high rank staff.

The process goes as follows:

1. Each bus driver and his conductor are attached to particular bus

2. Each cashier is attached to particular route for financial management

3. The cashiers are attached to high rank financials officers. The financials officers are then

attached to General manager

4. Customers are gathered in queue for booking or purchasing ticket either through phone

calls or by direct contact.

5. Customers visited company notice board every day to see latest information.

PROBLEM STATEMENT

After analyzing the current system, we noticed that many problems are encountered with the system which includes:

- INSECURITY
- REDUNDANCY
- INCONSISTENCY
- DELAY IN DATA ACCESSING
- INEFFECTIVE RETRIEVAL OF DATA
- INEFFICIENT IN TIME AND COST
- POOR CUSTOMER EXPIRIENCE

AND THERE IS OBVOIUSLY A NEED TO OVERCOME THIS PROBLEMS

PROPOSED SOLUTION

The solution to the problems faced in the manual system of ticket booking is to create and online ticket booking system.

Customers will be able to purchase bus tickets 24/7 without having to go through the stress of queuing in long lines, and the bus ticket can't be lost, stolen or left behind.

The online ticketing system will also ease the functioning of the travel agency through it's integrated management features.

OBJECTIVES

THE MAIN OBJECTIVES OF THE ONLINE SYSTEM INCLUDE:

- To provide a web-based bus ticket purchase function. Customers can buy bus tickets through the online system and won't be obligated to que up in lines at the counter.
- Enable the customer to check the availability of the bus ticket online. Customer can check the departure and arrival time for every bus through the system.
- Ease bus ticket payments through an online gateway. Customers will be able to pay the bus tickets through methods like Mobile money, credit or debit cards etc.
- Reduce the number of staff at the point of sales. The number of staff at the counter can be reduced after the online ticketing system has been implemented
- Admin user privileges in updating and cancelling payment, destinations and vehicle records.

IMPLEMENTATION TOOLS

1. HTML: which is stand for Hypertext Markup Language is the main markup language for creating web pages and other information that can be displayed in a web browser.

2. PHP: is a server-side scripting language designed for web development but also used as a general-purpose programming language.

3. MySQL: "My S-Q-L", officially, but also called “My Sequel" is the world's second most widely used open-source relational database management system (RDBMS). The SQL phrase stands for Structured Query Language.

4. JavaScript (JS): Is a dynamic computer programming language. It is most commonly used as part of web browsers, whose implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. It is also being used in server-side programming, game development and the creation of desktop and mobile applications.

5. Cascading Style Sheets (CSS): is a style sheet language used for describing the look and formatting of a document written in a markup language.

6. Edraw max: it is an all-in-one diagram software that makes it simple to create professional looking flowcharts, organizational charts, network diagrams, business presentations, building plans, mind maps, science illustration, fashion designs, UML diagrams, workflows, program structures, web design diagrams, electrical engineering diagrams, directional maps, database diagrams and more.

7. Sublime text: Is a sophisticated text editor, for code, markup and prose. It has beautiful user interface, extra ordinary features and amazing performance. It has the function of: go to anything, multiple selections, command palette, distraction free mode, instant project switch, plugin API and cross platform.

FUNCTIONAL REQUIREMENT

Functional requirement is a function or feature that must be included in an information system to satisfy the business needs and user acceptance. Staff and Customers will use this proposed Online Bus Ticketing System web portal.

A clear and detail functional system requirements for this system are the Staff section and Customer section are described as following.

STAFF

The staff can access some of the functions in this system, which include company staff

management module, bus information module, purchasing, cancellation/postponement module, and the reports module. Each Staff has to perform their activities. The functional requirements for the staff' section is divided in to three functions which are: (a) Administrator (b) Manager (c) Vendor (d) Cashier.

a) Administrator

Administrator is a super person that has the overall control of company staff which includes:

➢ Add, edit or delete staff (operator, manager, cashier and driver)

b) Manager

Manager is a company staff which manages company activities and has the ability to perform

the following functions:

1. Manage Customers: Manager can view, edit, delete and search all the customer that register

with the company.

2. Activity Logs: Manager can view all the activities perform by in the system.

3. User's logs: Manager can view all the activities perform by the staff and customers.

4. Manage News: Manager can post or delete news/events by topic name and date and publish

to homepage for customers view.

5. Generate report: Manager can generate report by using a particular date or range base on

paid, unpaid, travelled, not travelled, cancels or postpones for the company and also print it.

6. Suspend/Release Driver: Bus driver ranking system are viewed and analyzed to take

decision of action on particular deriver using 5 stars: very-poor, poor, good, very-good and

excellent.

c) Casier.

Cashier is a finance department person that accept payments from customers.

7. Payment status: Cashier can assign a customer payment status paid or not payment whether he/she pay using teller or using cash, so that a customer can travel after been verified.

d) Vendor

Vendor is an operational department person that issues bus tickets, manage destination and customer travelling status.

8. Assign Customer travelling status: Those customers that have been verified by the Cashier are ready for travelling, here the vendor assign those travelled if the travelled or not travelled if they didn't travel after been paid.

9. Seat inventory: Here the vendor can delete and search the tickets been booked.

10. Destinations: Here The Operator can edit, delete or add destinations to each bus allocated to the company.

11. Allocate drive to bus: Operator can allocate a particular driver to a bus when released by manager.

12. Broadcast message: Here the company operator can send a broadcast message to customers .

CUSTOMERS

The customers can access some of the functions in this system, which includes the main page module, registration module, bus schedule and details module, booking module, payment module, ticket module, postponement and cancellation module. The functional requirements for the customers section are as follows:

1. Ticket booking:

A customer perform the following activities:

a. Check the ticket availability by selecting route, date and number of passengers to travel which a system will use to validate to see if a driver is allocated to that bus of that route selected and also the date is available. Seats available are to be incrementing from previous booking with the same date and route. After checking availability, now a customer can proceed to registration page and supply all requirement needed.

b. After successful registration with validations from the system, a customer proceed to payment page and can pay online or skip this step if wish to pay manually.

c. Then lastly, a message will be sent via the mobile number a customer provided. Or a customer print a ticket.

2. Postpone ticket booked:

Once a customers booked a ticket, then they can login to postpone the ticket booked, but only if the date of travel not past.

3. Cancel ticket booked:

Once a customers booked a ticket then they can to login to cancel the ticket booked, but only if the date of travel not past.

4. Reset password:

Once a customers booked a ticket then they login to reset their password but only if the current password is provided.

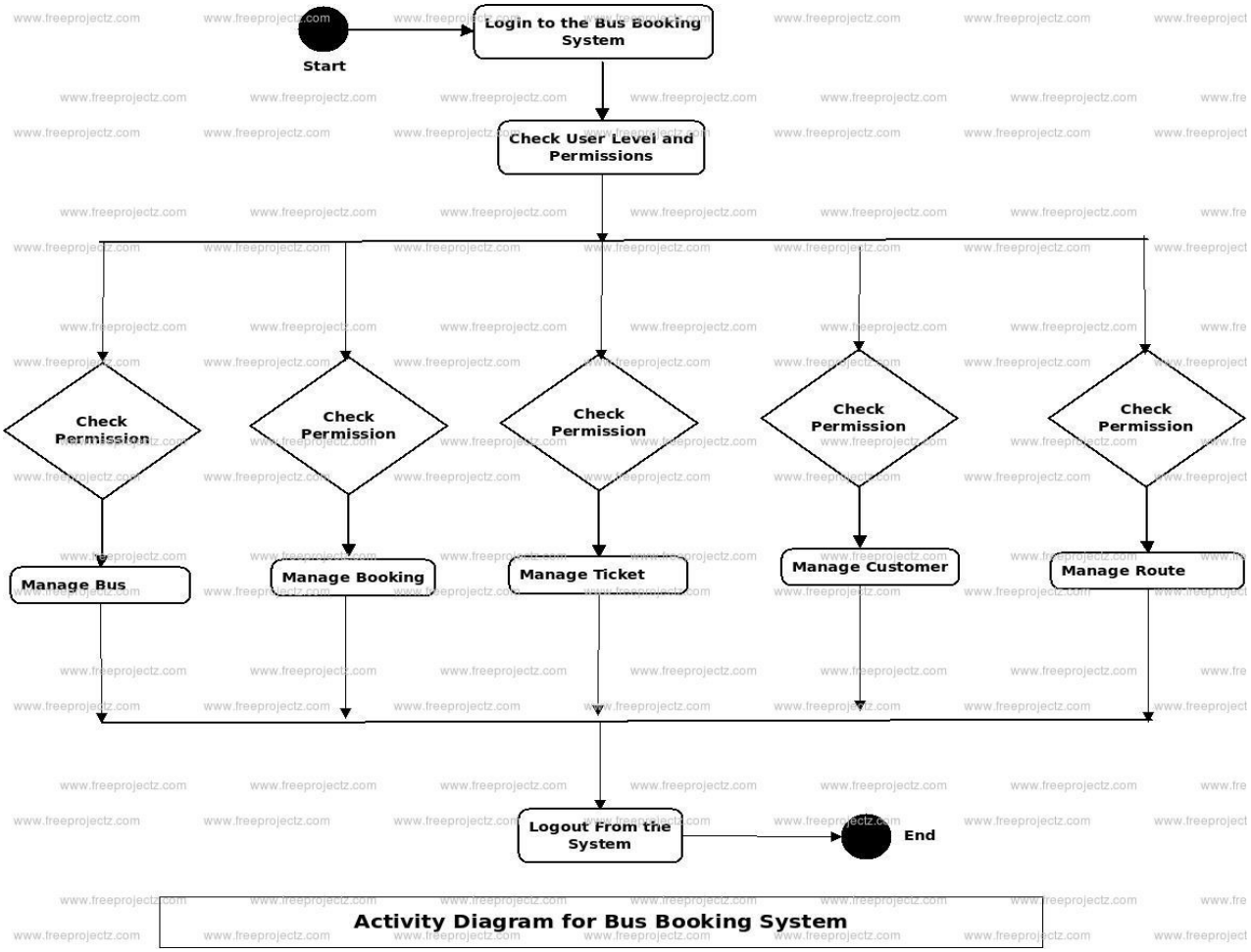
ACTIVITY DIAGRAMS

This is the **Activity UML diagram of Bus Booking System** which shows the flows between the activity of Customer, Ticket, Route, Booking, Bus. The main activity involved in this **UML Activity Diagram of Bus Booking System** are as follows:

- Customer Activity
- Ticket Activity
- Route Activity
- Booking Activity
- Bus Activity

Features Of The Activity UML Diagram Of Bus Booking System

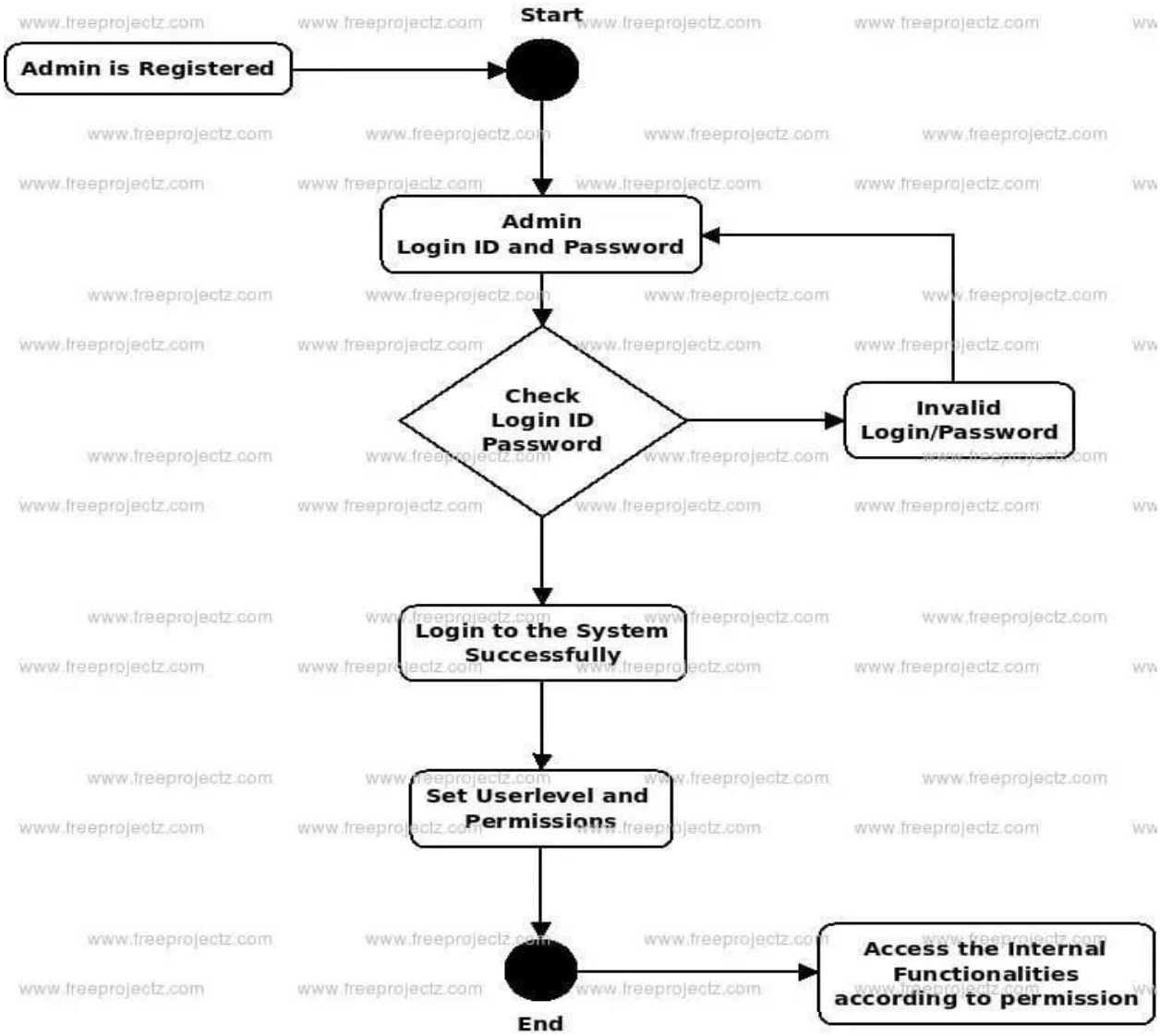
- Admin User can search Customer, view description of a selected Customer, add Customer, update Customer and delete Customer.
- Its shows the activity flow of editing, adding and updating of Ticket
- User will be able to search and generate report of Route, Booking, Bus
- All objects such as (Customer, Ticket, Bus) are interlinked
- Its shows the full description and flow of Customer, Booking, Bus, Route, Ticket



Activity Diagram for Bus Booking System

This is the **Login Activity Diagram of Bus Booking System,** which shows the flows of Login Activity, where admin will be able to login using their username and password. After login user can manage all the operations on Route, Customer, Ticket, Bus, Booking. All the pages such as Ticket, Bus, Booking are secure and user can access these page after login. The diagram below helps demonstrate how the login page works in a Bus Booking System. The various objects in the Bus, Route, Customer, Ticket, and Booking page—interact over the course of the Activity, and user will not be able to access this page without verifying their identity.

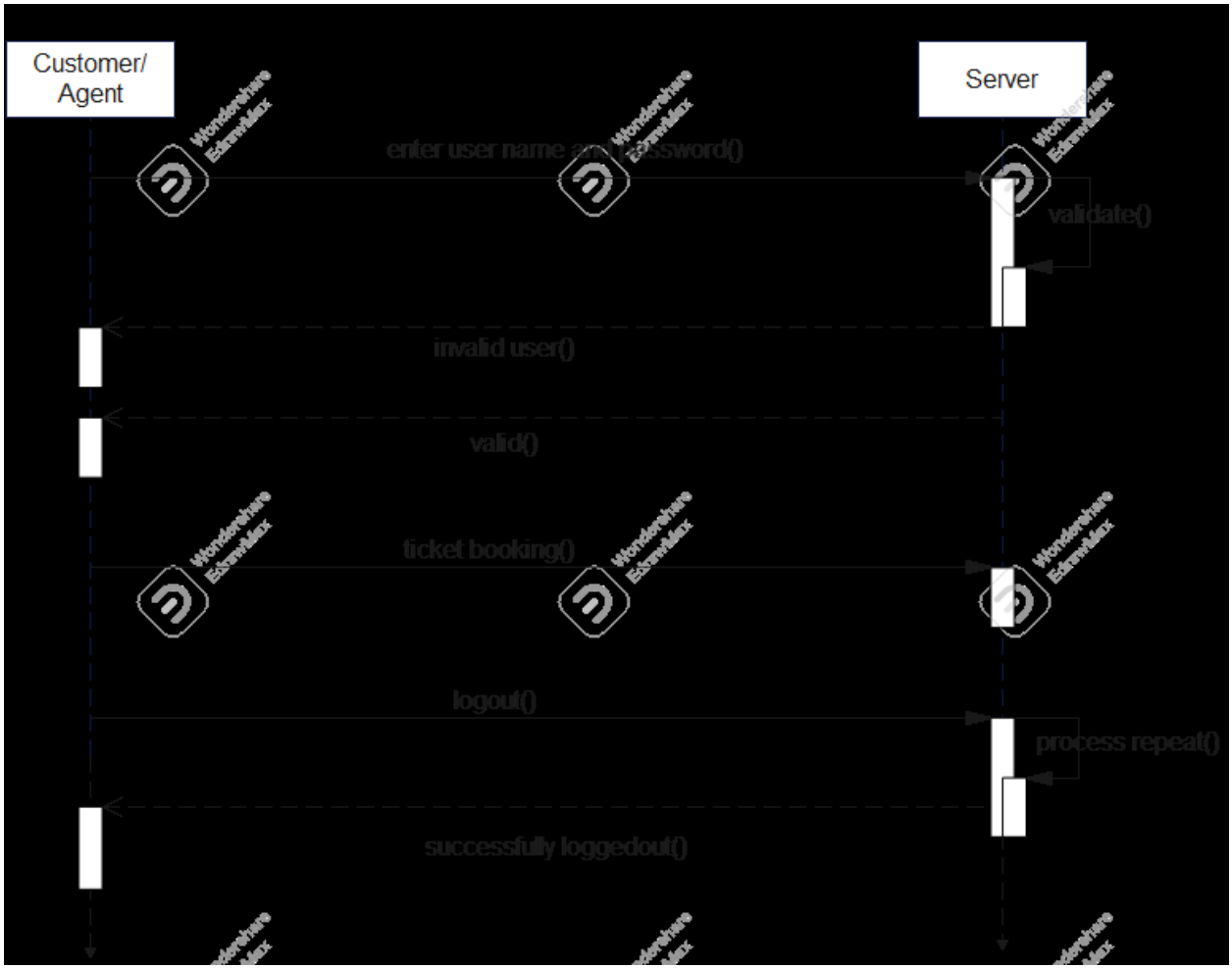
Bus Booking System Activity Diagram



SEQUENCE DIAGRAMS

SEQUENCE DIAGRAMS FOR ONLINE BUS RESERVATION SYSTEM

Customer and Agent Login Diagram



Customer:

Customer enters username and password

Customer provides ticket booking details to the server through a GUI

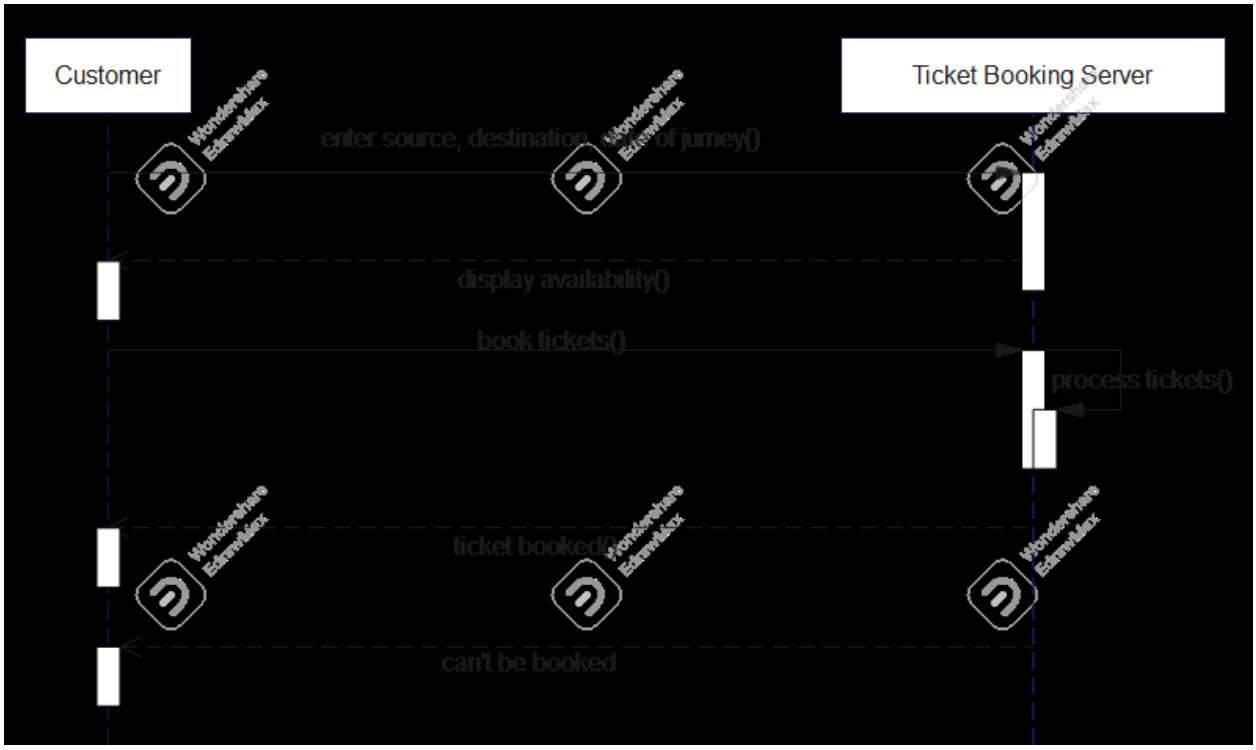
Logs out of the System

Server:

Validates user details and request for another entry until the user enters the right details and is accepted or is denied access due to multiple failures

Processes logout and exits the user from the system

Customer Ticket booking Diagram



Customer:

Enters Journey details

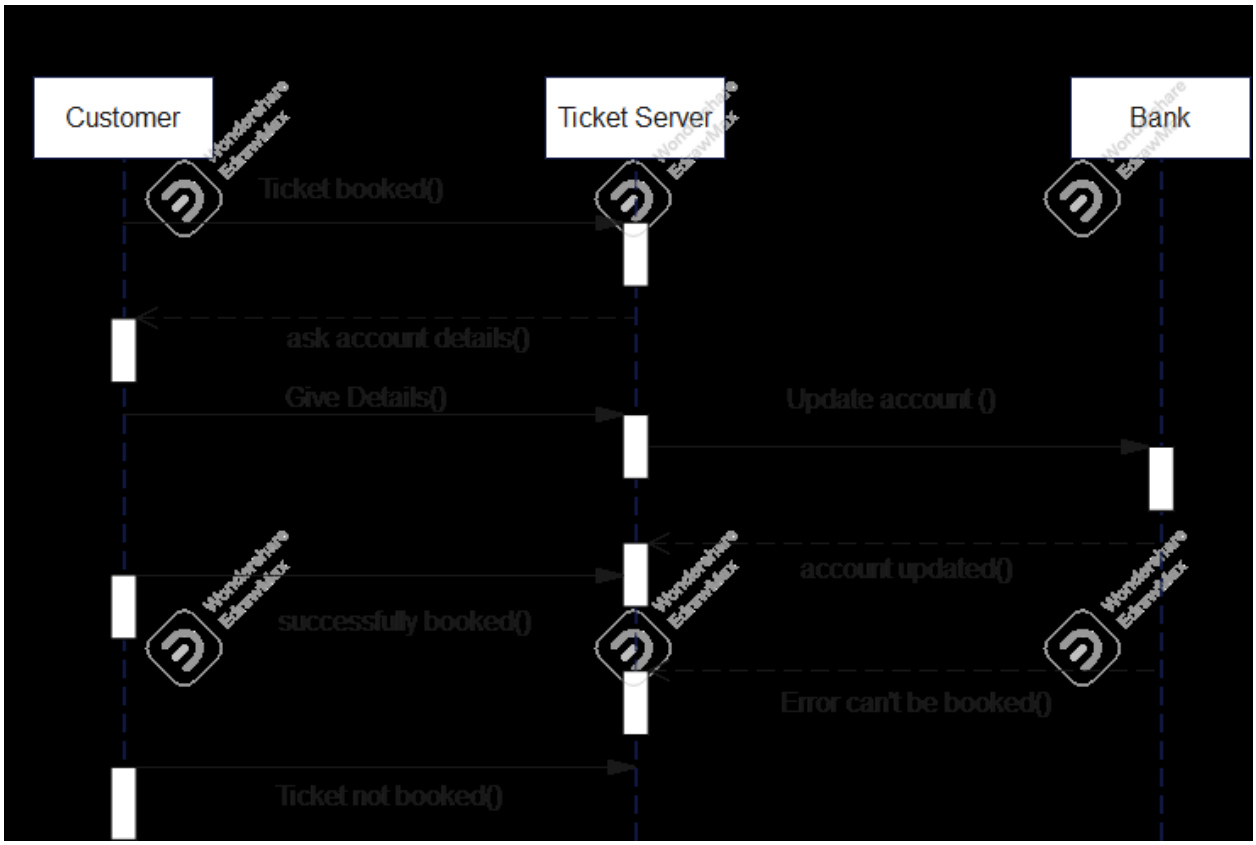
Books ticket

Server:

Displays seat availability

Processes booking details and informs customer of seat availability whether or not the seat has been taken or not.

Payment Diagram



Customer:

Books seat

Provides Server with Bank account details

Ticket Server:

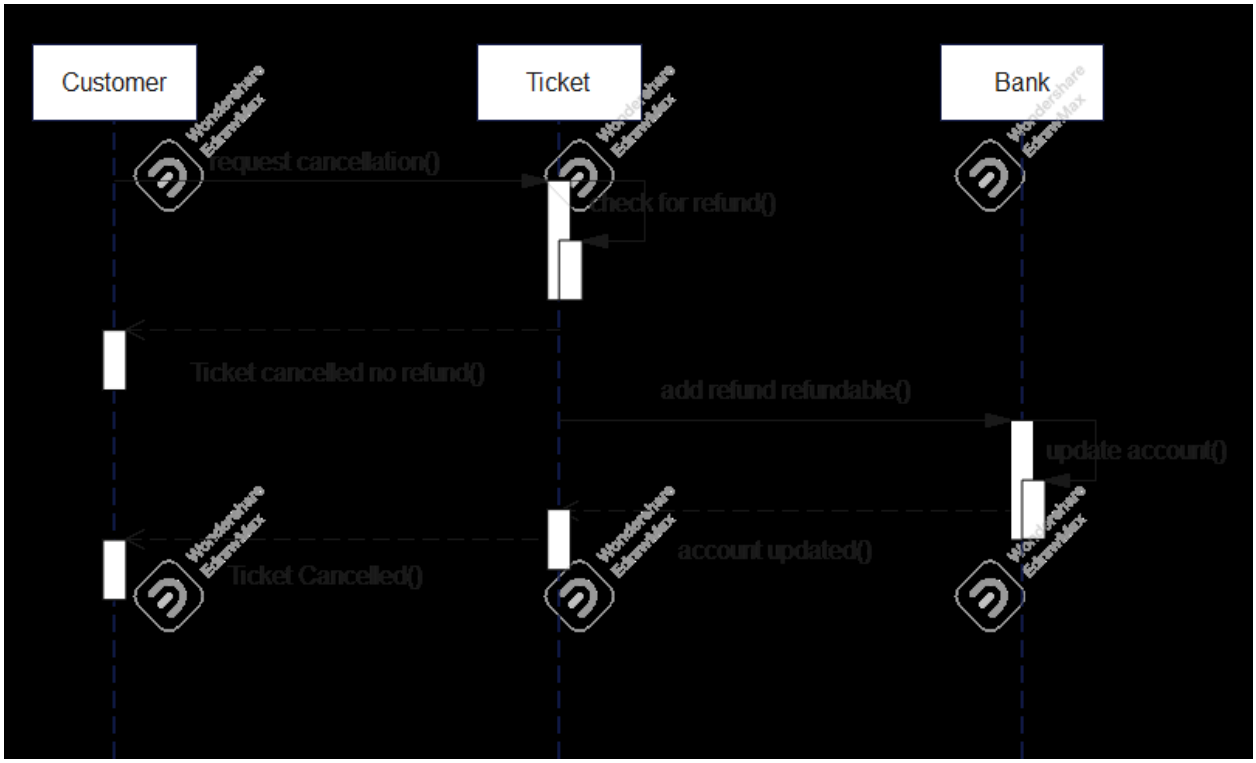
Ask for bank account details

Passes customers details to the bank for updating of the account.

Bank:

Sends info about account update after processing

Cancel Ticket Diagram



Customer:

Request Cancellation

Ticket Server:

Checks for refund

Sends back a 'No refund' message to the customer if Ticket cannot be refunded and if not, it proceeds to the Bank Server and processes refund and updates the account.

Bank: Cancels ticket after a refund

USE CASE DIAGRAM

Use Case Description

Actor Action	Use case Name	System Response
Customer select route, date of departure and number seats need to book and click book ticket now.	Book ticket	System checks the date, seat and time slotted are available, if the details are available the system will then proceed to next phase else prompt error message.
Customers register their ticket by providing details.	Register ticket	the system check all the necessary required field are provided, if the details are provided as needed it then proceed to next phase else prompt an error message.
Customers pays online on his wish or skip to next phase	Online pay	The online payment server return true to the system if the payment is success, else return false and proceed to next phase.
Customer Print a ticket	Print ticket	The system print a ticket using a printer.
Customer Login	Login	The system validate the login details of customer and access level, if success, the system proceed to customer panel else display an error message.
Customer Re- book a ticket	Re- book ticket	System checks the date, seat and time slotted are available, if the details are available the system will then proceed to next phase else prompt error message.
Customer Postpone a ticket	Postpone ticket	The system postpone a ticket to customer if the ticket is paid and travel date does not past.
Customer Cancel a ticket	Cancel ticket	The system cancel a ticket for customer once he/she booked a ticket.

Customer change his password	Change password	The system change a password for a customer if the current password is provided.
Administrator login	Login	The system validate the login details of admin and access level, if success, the system proceed to admin panel else display an error message.
Administrator Manage Operator	Manage Vendor	The system allow system admin to add edit and delete driver.
Administrator Manage Cashier	Manage Cashier	The system add edit and delete driver.
Administrator Manage Manager	Manage Manager	The system add, edit and delete manager.
Administrator Manage Driver	Manage Driver	The system add, edit and delete driver.
Manager login	Login	The system validate the login details of manager and access level, if success, the system proceed to manager panel else display an error message.
Manager view users logs	View user's logs.	The system displays a manager user's logs.
Manager view activity logs.	View activity logs.	The system displays a manager activity logs
Manager Generate report	Generate report	The system displays a manager a report using paid, unpaid, travelled, not travelled, cancel ticket, or postponed ticket by using date range.
Manager manage customer	Manage customer	The system allows a manager to edit or delete a customer.
Cashier login	Login	The system validate the login details of cashier and access level, if success, the

		system proceed to cashier panel else display an error message.
Cashier verify payment	Verify payment	The system assign a verified ticket booked paid or unpaid.
Vendor login	Login	The system validate the login details of operator and access level, if success, the system proceed to operator panel else display an error message.
Vendor cancel a ticket	Cancel ticket	The system cancels a ticket for a selected ticked.
Vendor manage route	Manage route	The system edit, add or delete a route.
Vendor verify travelling	Verify travel	The system assign a particular ticket travelled or not travelled.
Vendor allocate driver to bus	Allocate driver bus	The system allocate driver to particular bus of particular route.
Vendor, customer, manager, cashier, and administrator logout	Logout	The system logout a user from the user's panel to homepage.

RECOMENDATION

The system is very simple in design and to implement. The system requires very low system resources and the system will work in almost all configurations. It has got following features:

- Needs a lot of working staff and extra attention on all the records.
- Ensure data accuracy.
- Records are efficiently maintained by DBMS.

CONCLUSION

Nowadays, bus agencies are taking important role in transportation, and to make reservation reliable they need a strong system that they will make reservation easier, faster and safer. This work is designed to meet requirements of a bus reservation system. It has been developed in HTML, PHP, CSS, JAVASCRIPT and database has been built in MySQL. By using this application, the company can provide reservation services and information to their customers without the limitation of office hours or manpower. Not only does it let customers book trips around the clock from any location with an internet connection but it is also designed for use by the company to internally manage their business processes; minimizing human errors and overcoming difficulties and problems that arose in the previous system.

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