

Bangladesh University of Business & Technology



Project Report

On

“AIRLINES MANAGEMENT SYSTEM”

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Abstract

An airline Management System is a computerized system used to store and retrieve information and conduct transactions related to air travel. The project is aimed at exposing the relevance and importance of Airline Management Systems. It is projected towards enhancing the relationship between customers and airline agencies through the use of AMSs and thereby making it convenient for the customers to book the flights when they require such that they can utilize this software to make reservations.

The main purpose of this software is to reduce the manual errors involved in the airline reservation process and make it convenient for the customers to book the flights when they require such that they can utilize this software to make reservations, modify reservations or cancel a particular reservation.

Introduction

This project on Airline Management System is the automation of the registration process of the airline's system. The system provides information like passenger's information, flight information, list of all passengers, it allows storing and retrieving data related to the airline industry and making transactions related to air travel, etc. The system also allows us to add records when a passenger reserves a ticket. The system allows the airline passenger to search for flights that are available between the two travel cities, namely the "Departure city" and "Arrival city" for particular departure and arrival dates. The system displays all the flight's details such as flight no, name, price and duration of the journey, etc. After searching the system display list of available flights and allows the customer to choose a particular flight. Then the system checks for the availability of seats on the flight. If the seats are available then the system allows the passenger to book a seat. Otherwise, it asks the user to choose another flight. To book a flight the system asks the customer to enter his details such as name, address, city, state, credit card number, and contact number. Then it checks the validity of the card and book the flight and update the airline database and user database. The system also allows the customer to cancel his/her reservation if any problem occurs. Getting to and from the airport to buy a ticket can be both time-consuming and expensive. Standing in line for a long time to collect a ticket is annoying. It is also important to know the flight information thoroughly. A simple error in booking tickets for a flight could be catastrophic. This system is designed to solve these aforementioned problems. Electronically handling of flight's record enhances the accuracy, flexibility, reliability and removes the human's error.

Problem statement

- i) Inability of passengers to select seat(s) for their chosen flights.
- ii) No option of passengers printing their boarding passes from the existing system.
- iii) Non-notification of passengers in the event of flight cancellation or delays.
- iv) No access to aircraft maintenance to ease passenger fears as regards air travel and its disasters.

The only reason to perceive the above-mentioned problems may occur is that our system is not very different from other similar systems that exist today. However, our purpose is to solve these problems and this will be discussed in detail later.

Objectives

The main objective of the Airlines Reservation System is to manage the details of Airlines Ticket, Flights, Customer, Booking Counter, Venders. It manages all the information about Airlines Ticket, Bookings, Venders, Airlines Ticket. The project is built at the administrative end and thus only the administrator is guaranteed the access. The purpose of the project is to build an application program to reduce the manual work for managing the Airline's Tickets, Flights, Bookings, Customers. It tracks all the details about the Customer, Booking Counter Venders.

Primary

The main issue associated with legacy systems is that they hinder airlines from increasing profits. Modern travelers want mobile access, convenient forms of payments, rich content, a high level of personalization, loyalty programs, and other commodities something that outdated systems just can't offer. As a result, airlines miss the opportunity to generate new revenue from providing additional services.

Secondary

i) First-generation: legacy systems

Many early adopters of passenger service software still rely on TPF in their daily IT operations. On the one hand, legacy systems continue to meet the basic industry requirements: they process high volumes of transactions, proving to be super-fast, reliable, and relatively secure. On the other hand, the “antiquated” technologies are expensive to maintain, rigid, and hard to integrate with newer applications the airline could take advantage of.

ii) Second Generation: A patchwork of old and new technologies

Migrating to a new PSS could take several years and cost millions of dollars. So, a lot of airlines trying to find a middle ground between legacy systems and customer pressure. To leverage technologies from the past century and urgent passenger needs, carriers use middleware, or software enabling them to link new applications and interfaces to their mainframe programs. This approach led to the uprising of the second-generation platforms, which essentially amount to a patchwork of integrations, not always correctly synced and perfectly adjusted. While on the whole, the second generation of PSSs is more passenger-friendly, it lacks reliability because of inconsistencies across components.

iii) Third Generation: Service-oriented approach

Today, providers of PSSs are switching from monolithic to service-based design either service-oriented architecture (SOA) or microservices. This approach allows for building complex applications as suites of small, scalable, separately maintained, and deployed modules. Airlines can add, update, or change components when necessary while not disrupting the entire system. In the SOA scenario, software components communicate with each other via Enterprise Service Bus (ESB) using messaging protocols. Microservices are often thought to be the next step of SOA evolution: Components are completely independent, use separate databases, and exchange data via HTTP-based REST or Thrift APIs.

Specific Requirements

Hardware requirements:

Processor:	Preferably 3.0 GHz or Greater.
RAM:	4 GB or Greater.
Disk space:	20 GB or more.
Input devices:	Mouse and keyboard
Output devices:	Monitor

Software requirements:

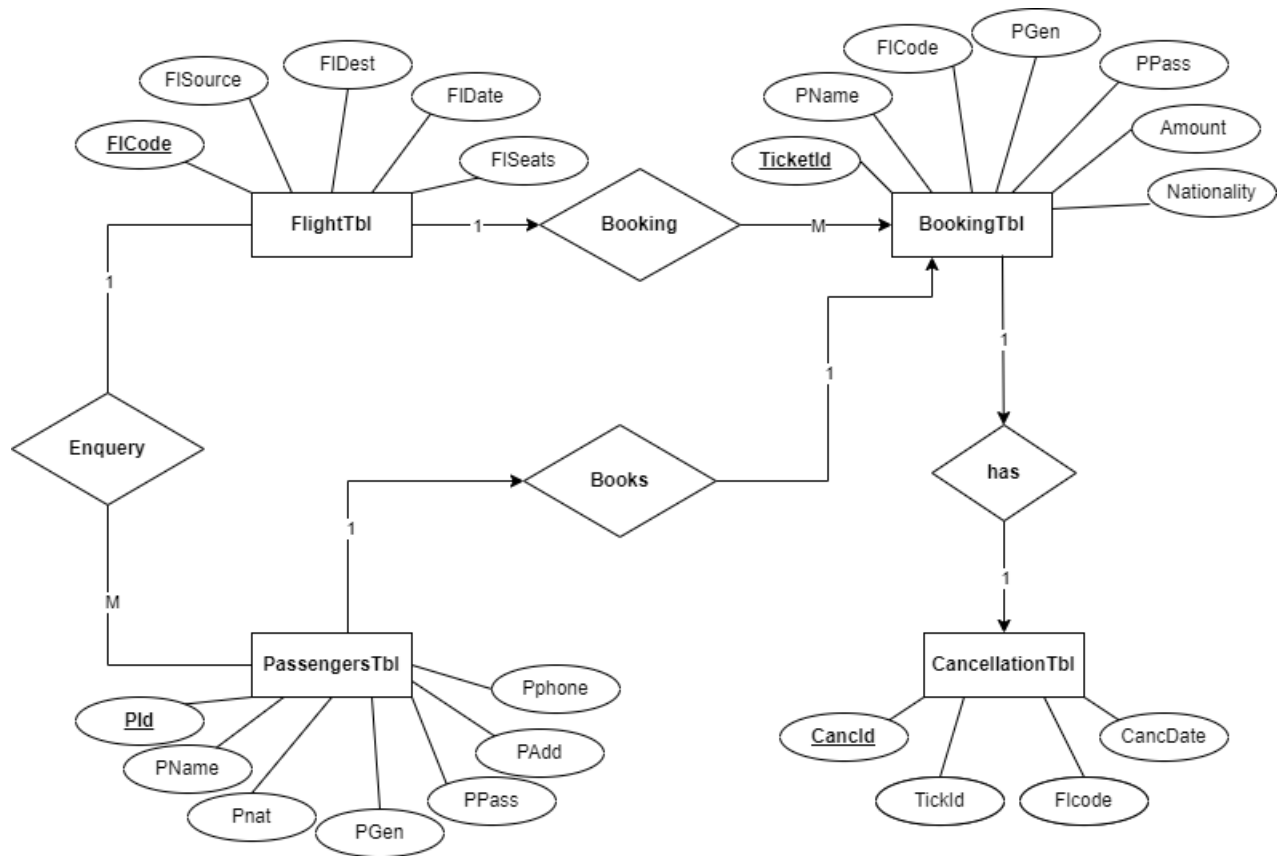
Operating system: Windows 10(64 bit).
Programming language: Java.
Other software: MySQL, NetBeans, and Xampp.

Features

Features that we have in our system are as follows,

1. *User login*: Users would be able to log into the system via individual IDs.
2. *Traveling destination*: Users can see which destinations are available on which specific airlines.
3. *Flight Scheduling*: Scheduling a flight according to the user's requirements is possible.
4. *View flight schedule*: Flight schedules can be viewed by logging in.
5. *Reservation & payment*: A flight can be reserved for the next journey.
6. *Cancel reservation*: Reservations can be canceled if desired.
7. *Reports*: Meteorological reports and aircraft condition reports will be available (After upgrade).

ER Diagram



Module design

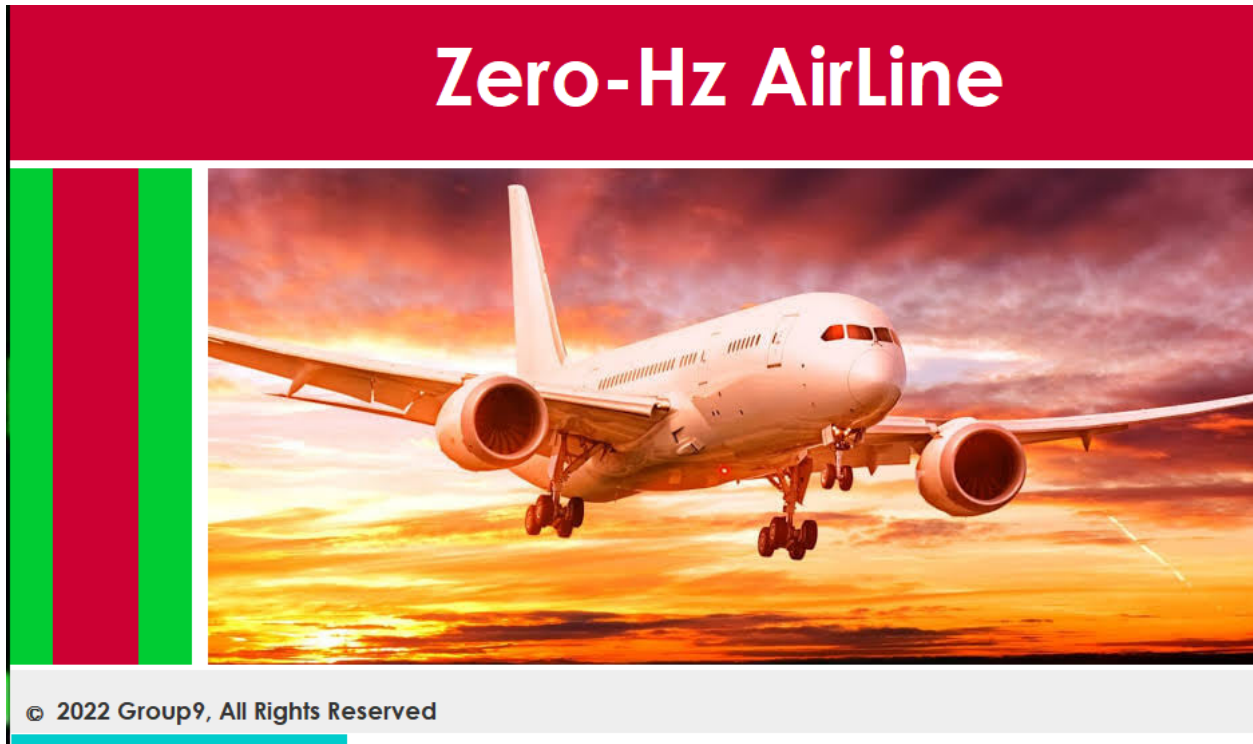


Fig: Loading Screen

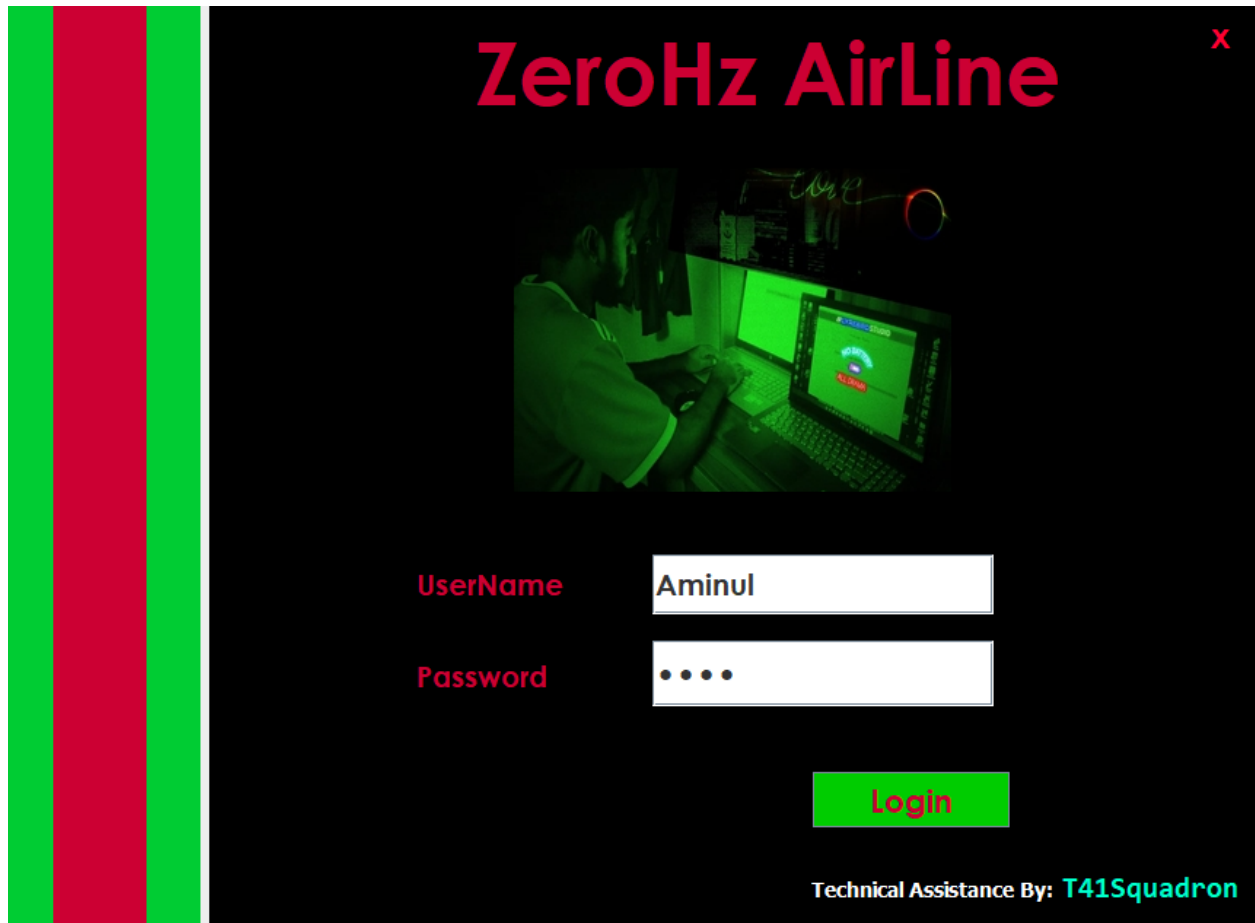


Fig: Log-in page

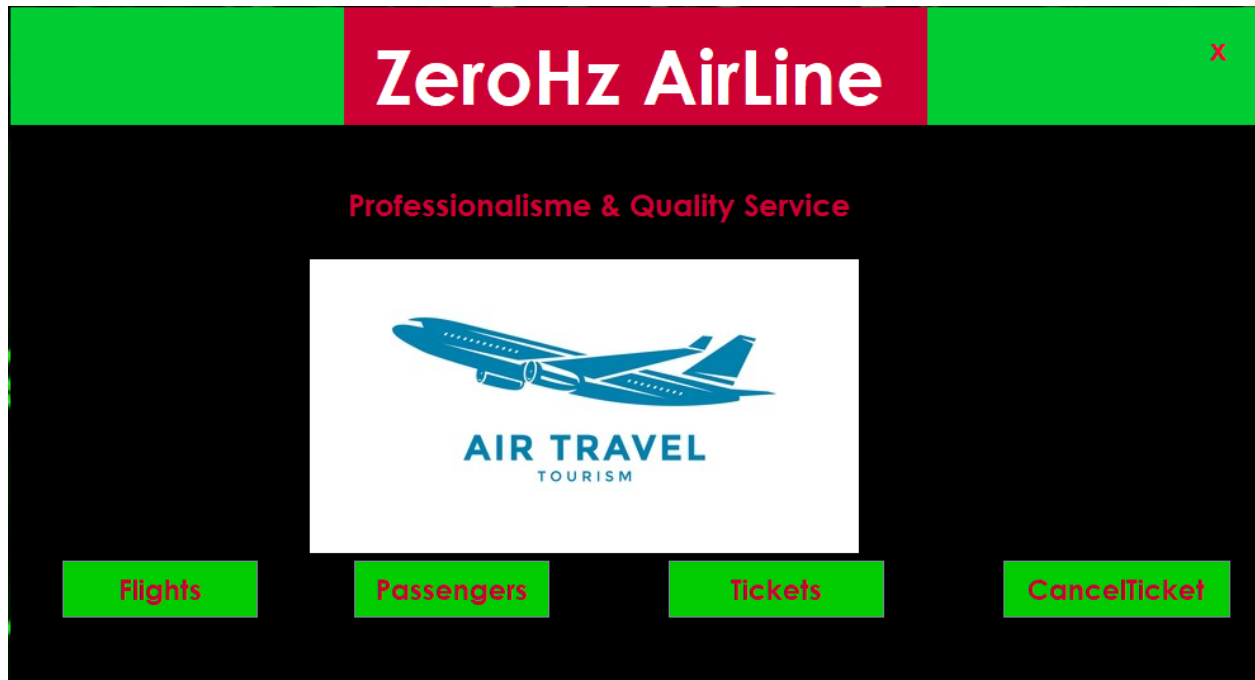


Fig: Main form

ZeroHz AirLine

Manage Passenger

Passenger Name

Nationality

Gender

Passport Number

Address

Phone

England

Female

Save

Edit

Delete

Back

Passenger List

PId	PName	PNat	PGen	PPass	PAdd	Pphone
1	Sadnan	Bangladeh	Male	BD1446	Noyakhali	017999999
2	MD.Aminul Islam	Bangladeh	Male	BD444	Barishal	01877501557
3	Mushfiq	India	Male	IND5888	Dellhi	+41252322
4	joVAN	USA	Male	usa1112	neyORK	4444
5	Mohammad Ali	Pakistan	Male	PAK 4555	Korachi	081313418
6	Zarin	Nepal	Female	NEP 7845	Kadmundo	95610110
7	Luxy	Indronesia	Male	INDO 54455	Indrone	89455130
8	Loard Papon	England	Female	ENG 5464	LOARDS	9783201

Fig: Passenger module

Ticket Bookings

Passenger Id

8

Passenger Name

Loard Papon

Flight Code

Passport Number

ENG 5464

Gender

Female

Amount

Nationality

England

Book

Reset

Back

Bookings

TicketId	PName	FlCode	PGen	PPass	Amount	Nationality
1	Sadnan	AA77	Male	BD1446	5000	Bangladeh
2	MD.Aminul Islam	BD 101	Male	BD444	8000	Bangladeh
3	Mushfiq	DFF1	Male	IND5888	5000	India
4	joVAN	DX96	Male	usa1112	8724	USA
5	Mohammad Ali	FX55	Male	PAK 4555	7410	Pakistan
6	Zarin	BD 101	Female	NEP 7845	86541	Nepal
7	Luxy	AZ44	Male	INDO 54455	6900	Indronesia
8	Loard Papon	DX96	Female	ENG 5464	9341	England

Fig: Ticket Booking Module

ZeroHz AirLine

Manage Flights

Flight Code

Source

Destination

Takeof Date

Number Of Seats

Barisal

Chitt...

Mar 25, 2022

Save

Edit

Delete

Back

Flights List

FIcode	FIsource	FIdest	FIdate	FIseats
AA77	Chittagong	Barisal	Fri Feb 18 19:49:27 BDT...	100
AJ99	Barisal	Chittagong	Fri Mar 25 17:22:24 BDT...	55
AZ44	Barisal	Sylhet	Tue Feb 15 21:34:32 BD...	500
BD 101	Dhaka	Barisal	Fri Feb 04 16:13:43 BDT...	250
DFF1	Chittagong	Sylhet	Fri Feb 18 20:01:08 BDT...	76
DX96	Khulna	Rangpur	Fri Mar 11 22:30:38 BDT...	250
FX55	Chittagong	Dhaka	Fri Feb 25 16:19:09 BDT...	44

Fig: Flight module

Ticket Cancellation

Ticket Id

8

Flight Code

DX96

Flight Date

Mar 16, 2022

Cancel

Reset

Back

Cancellation List

CancId	TickId	FlCode	CancDate
1	2	BD 101	Thu Feb 10 20:24:30 BDT 2022
2	3	BD 101	Tue Feb 08 20:26:44 BDT 2022
3	3	AA77	Thu Feb 03 21:50:34 BDT 2022
4	1	AA77	Sat Mar 12 00:18:25 BDT 2022
5	3	FX55	Wed Mar 09 22:33:15 BDT 2022
6	3	BD 101	Wed Mar 09 00:36:21 BDT 2022
7	3	DFF1	Sat Mar 19 14:17:03 BDT 2022
8	3	AA77	Sat Mar 26 14:19:41 BDT 2022
9	3	AA77	Fri Mar 18 14:40:31 BDT 2022
10	3	AA77	Thu Mar 24 14:42:20 BDT 2022
11	8	DX96	Wed Mar 16 17:23:22 BDT 2022

Fig: Ticket Cancellation Module

Limitations of the existing system

The existing system includes problems like lack of time-consuming, accuracy, high cost, security problems, etc.

There are many problems in existing systems like:

- Time and speed.
- Manpower.
- High cost.
- Security.
- Complexity.
- Maintenance.
- Accuracy.
- Storing.
- Records might get lost or be insufficient due to manual errors.
- Transfer of information within the branches is costly and time-consuming.
- Maintaining and managing data is very costly and time-consuming because there are many documents that have to be transferred to relative branches.

Conclusion

This project on Airline Management System is the automation of the registration process of the airline system. The system can provide much information like passenger's details, flight details, and booking details. The system allows us to add records when a passenger reserves a ticket. It also allows to delete and update the records based on passengers' requirements. This project has guided our path through various aspects of computer science where developing online applications plays a major role.

This software package "Airline Management System" provides convenient online uploading of the report from the executive and viewing that report by the managing director in an online fashion. To input the data in a highly validated manner and generate the different reports, involves a complex process that was being done in a based manner. This package is designed and developed in a compact manner, which is ready to meet the user's specification and to serve them in an effective as well as in an enhanced manner. The actual problem has been observed with keen interest and it has been defined and analyzed in such a way that it never causes choice to the user. More ever the limitation that has been prevailing in the existing system had been overcome to suit the need of the user. High precision and care have been taken to design the database, input forms, and output reports since they should be given due importance which could otherwise have too serious consequences thus affecting the whole system. The system thus developed has been implemented successfully which has been performed to scrutinized the validation of each data and errors were spotted out and then finally cleared in a sophisticated manner. The added feature of this system is that it has been provided with many provisions for future enhancement in order to maintain the system in such a way that the future requirement of the user could also be satisfied and upgraded.

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