# AIRLINE RESERVATION SYSTEM

MINI PROJECT REPORT

Submitted by

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# To

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**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY**

**KATTANKULATHUR NOVEMBER 20**

# ABSTRACT

This project on Airline Management System is the automation of registration process of

airlines 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 make transactions related to air travel etc. The system also allows us to add records when a passenger reserves a ticket. For data storage and retrieval we use MySQL Database. It enables us to add any number of records in our database. The project “Airline Management System” comprises of a large number of flights which belong to a particular airline. The system we have implemented manages different objects viz.

· Airline

· Airline Employees

· Customers/Traveller

Each of these accesses a database schema which has corresponding tables.

The Airline Management System is a comprehensive solution designed to automate the registration and management processes within the airline industry. This system streamlines various operations, providing essential functionalities such as passenger registration, flight management, and transaction handling. By centralizing data storage and retrieval through a MySQL database, the system ensures efficient management of airline-related information.

Language Used - Java Core

Concept Used - Swing

IDE Used - NetBeans

Database Used - MySQL

# ACKNOWLEDGEMENT

We express our heartfelt thanks to our honourable **Vice Chancellor Dr. C. MUTHAMIZHCHELVAN**, for being the beacon in all our endeavours.

We would like to express my warmth of gratitude to our **Registrar Dr. S Ponnusamy,** for his encouragement.

We express our profound gratitude to our **Dean (College of Engineering and Technology) Dr. T. V.Gopal,** for bringing out novelty in all executions.

We would like to express my heartfelt thanks to Chairperson, School of Computing **Dr. Revathi Venkataraman,** for imparting confidence to complete my course project.

We wish to express my sincere thanks to **Course Audit Professors Dr. Vadivu. G , Professor, Department of Data Science and Business Systems and Dr. Sasikala. E Professor, Department of Data Science and Business Systems** and **Course Coordinators** for their constant encouragement and support.

We are highly thankful to our Course project Faculty **Faculty Name, Assistant Professor , Department of Computational Intelligence,** for her assistance, timely suggestion and guidance throughout the duration of this course project.

We extend my gratitude to our **HOD Dr.Annie Uthra R Professor and Head, Department of Computational Intelligence** and my Departmental colleagues for their Support.

Finally, we thank our parents and friends near and dear ones who directly and indirectly contributed to the successful completion of our project. Above all, I thank the almighty for showering his blessings on me to complete my Course project.

# TABLE OF CONTENTS

|  |  |  |
| --- | --- | --- |
| Sr. No. | Title | Page No. |
| 1. | Introduction |  |
| 2. | Literature Survey |  |
| 3. | Requirement Analysis |  |
| 4. | Architecture and Design |  |
| 5. | Implementation |  |
| 6. | Experiment Result and Analysis |  |
| 7. | Future Scope |  |
| 8. | Conclusion |  |
| 9. | References |  |

**INTRODUCTION**

Airline Management System is the administration of airports and airlines. It includes the activities of setting the strategy of airports to gather and provide information on airline commercial and operational priorities. It covers a broad overview of the airline management. It is also studied as a branch of study that teaches management of airport and airlines. This provides a broad overview of the airline industry and creates awareness of the underlying marketing, financial, operational, and other factors influencing airline management. This study provides information on airline commercial and operational priorities, along with teaching the key characteristics of aircraft selection and the impact of airport decision making. It provides some amount of automation in airlines management and helps airline system in making their business more efficient. An added attraction for their potential customers. It will also show the attitude of the management that they are aware to the newly introduced technology and ready to adopt them.

**1.1Problem Definition**

This project on Flight Management System is the automation of registration process of airline system. The system is able to provide much information like passenger’s details, flight details and the 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 passenger’s requirements. For data storage and retrieval we use the MySQL database. It enables us to add any number of records in our database from the frontend which is Java core. Any changes made in the frontend will be reflected at the backend.

**1.2 Need**

Electronically handling of flight’s record to enhance the accuracy, flexibility, reliability and to remove the human’s error. An airline provides air transport services for passengers, generally with a recognize operating. To provide accurate information about the addition, deletion and modified record. To provide, efficient, accurate, reliable, fast, and robust structure that can handle any number of records. The global airline industry continues to grow rapidly, but consistent and robust profitability is elusive. Measured by revenue, the industry has doubled over the past decade, from US$369 billion in 2004 to a projected $746 billion in 2014, according to the International Air Transport Association(IATA).Much of that growth has been driven by low-cost carriers(LCCs), which now control some 25 percent of the worldwide market and which have been expanding rapidly in emerging markets; growth also came from continued gains by carriers in developed markets, the IATA reported. Yet profit margins are still low, less than 3 percent overall. In the commercial aviation sector, just about every group in the aviation industry chain—airports, airplane manufacturers, jet engine makers, travel agents, and service companies, to name a few—turns a profit. It is seemingly ironic that the airline companies that actually move passengers from one place to another, the most crucial link in the chain, struggle to make a profit.

A few factors that directs us to develop a new system are given below -:

1. Faster System
2. Accuracy
3. Reliability
4. Informative
5. Reservations and cancellations from any where to any place

# LITERATURE SURVEY

The airline industry has undergone significant transformations with the advent of technology, leading to the development of sophisticated management systems that streamline operations and enhance customer experiences. This literature survey reviews existing research and systems related to airline management, focusing on key areas such as data management, operational efficiency, and customer relationship management.

# REQUIREMENT ANALYSIS

**Software Requirement Specifications**

Operating System Front End Back End Server Documentation : Windows 10

Frontend Software: Java NetBeans 8.2 : JDK 8

Backend Software: MySQL

**Hardware Requirement Specifications**

Computer Processor Core i3 Processor Speed 2.3 GHz Processor Hard Disk 400 GB or more RAM Min 2GB

## ARCHITECTURE AND DESIGN

The Airline Management System is designed to provide a comprehensive solution for managing airline operations, including passenger management, flight scheduling, ticket booking, and transaction processing. The system architecture is built on a layered approach to ensure modularity, scalability, and maintainability**.**

# 

# IMPLEMENTATION

**Backend Implementation**

**MYSQL**

MySQL is an open-source relational database management system (RDBMS). A relational database organizes data into one or more data tables in which data types may be related to each other; these relations help structure the data. SQL is a language programmers use to create, modify and extract data from the relational database, as well as control user access to the database. In addition to relational databases and SQL, an RDBMS like MySQL works with an operating system to implement a relational database in a computer's storage system, manages users, allows for network access and facilitates testing database integrity and creation of backups.

Table cancellation:

create table cancellation(pnr\_no varchar(10), cancellation\_no varchar(10), cancellation\_date DATE, fli\_code varchar(15));

Table flight:

create table flight(f\_code varchar(10), f\_name varchar(20), src varchar(30), dst varchar(30));

Table login:

create table login(username varchar(20), password varchar(20));

Table passenger:

create table passenger(pnr\_no varchar(10), address varchar(30), nationality varchar(15), name varchar(20), gender varchar(10), ph\_no varchar(15), passport\_no varchar(20), fl\_code varchar(10));

Table payment:

create table payment(pnr\_no varchar(10), ph\_no varchar(15), cheque\_no varchar(15), card\_no varchar(20), paid\_amt varchar(10), pay\_date DATE);

Table reservation:

create table reservation(pnr\_no varchar(10), ticket\_id varchar(10), f\_code varchar(10), jny\_date DATE, jny\_time varchar(10), src varchar(20), dst varchar(20));

Table sector:

create table sector(flight\_code varchar(20), capacity varchar(10), class\_code varchar(5), class\_name varchar(20));

**Frontend Implementation**

**Java Core**

Core Java is the part of Java programming language that is used for creating or developing a general-purpose application. It uses only one tier architecture that is why it is called as ‘stand alone’ application.Core java programming covers the swings, socket, awt, thread concept, collection object and classess.

**Swings**

**Swing** is a GUI widget toolkit for Java. It is part of Oracle's Java Foundation Classes (JFC) – an API for providing a graphical user interface (GUI) for Java programs.

Swing provides a look and feel that emulates the look and feel of several platforms, and also supports a pluggable look and feel that allows applications to have a look and feel unrelated to the underlying platform. It has more powerful and flexible components than AWT. In addition to familiar components such as buttons, check boxes and labels, Swing provides several advanced components such as tabbed panel, scroll panes, trees, tables, and lists.

**Creating mainframe class**

package airline.management.system;

import net.proteanit.sql.DbUtils;

import java.awt.\*;

import javax.swing.\*;

import java.awt.event.\*;

public class Mainframe extends JFrame{

public static void main(String[] args) {

new Mainframe().setVisible(true);

}

public Mainframe() {

super("AIRLINE RESERVATION MANAGEMENT SYSTEM");

initialize();

private void initialize() {

setForeground(Color.CYAN);

setLayout(null);

JLabel NewLabel = new JLabel("");

NewLabel.setIcon(new ImageIcon(ClassLoader.getSystemResource("airline/management/system/icon/front.jpg")));

NewLabel.setBounds(0, 0, 1920, 990);

add(NewLabel);

JLabel AirlineManagementSystem = new JLabel("AIR INDIA WELCOMES YOU");

AirlineManagementSystem.setForeground(Color.BLUE);

AirlineManagementSystem.setFont(new Font("Tahoma", Font.PLAIN, 36));

AirlineManagementSystem.setBounds(700, 60, 1000, 55);

NewLabel.add(AirlineManagementSystem);

JMenuBar menuBar = new JMenuBar();

setJMenuBar(menuBar);

JMenu AirlineSystem = new JMenu("AIRLINE SYSTEM");

AirlineSystem.setForeground(Color.BLUE);

menuBar.add(AirlineSystem);

JMenuItem FlightDetails = new JMenuItem("FLIGHT\_INFO");

AirlineSystem.add(FlightDetails);

JMenuItem ReservationDetails = new JMenuItem("ADD\_CUSTOMER\_DETAILS");

AirlineSystem.add(ReservationDetails);

JMenuItem PassengerDetails = new JMenuItem("JOURNEY\_DETAILS");

AirlineSystem.add(PassengerDetails);

JMenuItem SectorDetails\_1 = new JMenuItem("PAYMENT\_DETAILS");

AirlineSystem.add(SectorDetails\_1);

JMenuItem Cancellation = new JMenuItem("CANCELLATION");

AirlineSystem.add(Cancellation);

JMenu Ticket = new JMenu("TICKET");

Ticket.setForeground(Color.RED);

menuBar.add(Ticket);

JMenu List = new JMenu("LIST");

List.setForeground(Color.BLUE);

menuBar.add(List);

JMenu Misc = new JMenu("MISC");

Misc.setForeground(Color.RED);

menuBar.add(Misc);

FlightDetails.addActionListener(new ActionListener(){

public void actionPerformed(ActionEvent ae){

new Flight\_Info();

}

});

ReservationDetails.addActionListener(new ActionListener(){

public void actionPerformed(ActionEvent ae){

try {

new Add\_Customer();

} catch (Exception e) {

e.printStackTrace();

}

}

});

PassengerDetails.addActionListener(new ActionListener(){

public void actionPerformed(ActionEvent ae){

try {

new Journey\_Details();

} catch (Exception e) {

e.printStackTrace();

}

}

});

SectorDetails\_1.addActionListener(new ActionListener(){

public void actionPerformed(ActionEvent ae){

try {

new Payment\_Details();

} catch (Exception e) {

e.printStackTrace();

}

}

});

Cancellation.addActionListener(new ActionListener(){

public void actionPerformed(ActionEvent ae){

new Cancel();

}

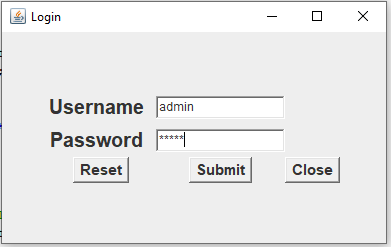
});

setSize(1950,1090);

setVisible(true);

}

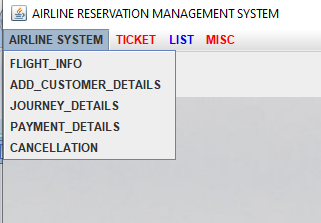
**SNAPSHOTS**

****

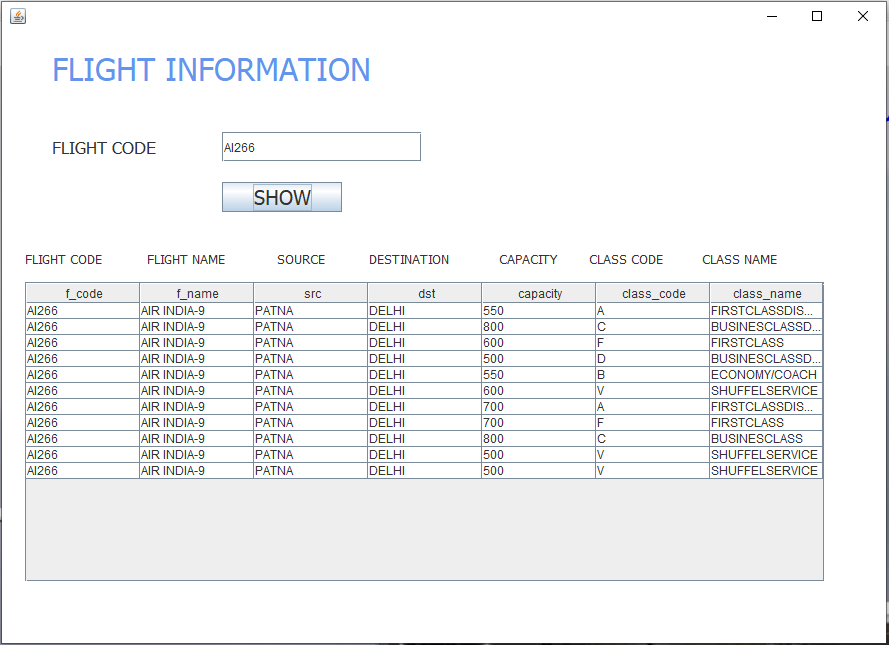
**Login Operation**

****

**Mainframe**



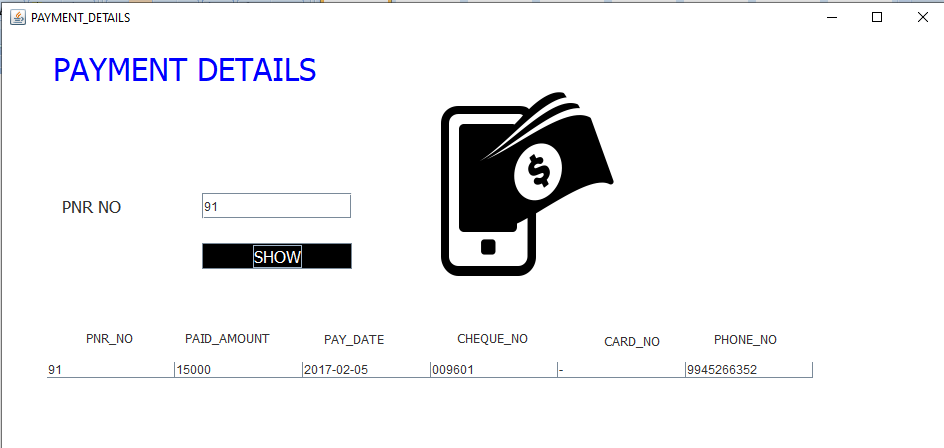
**Drop-down Menu**



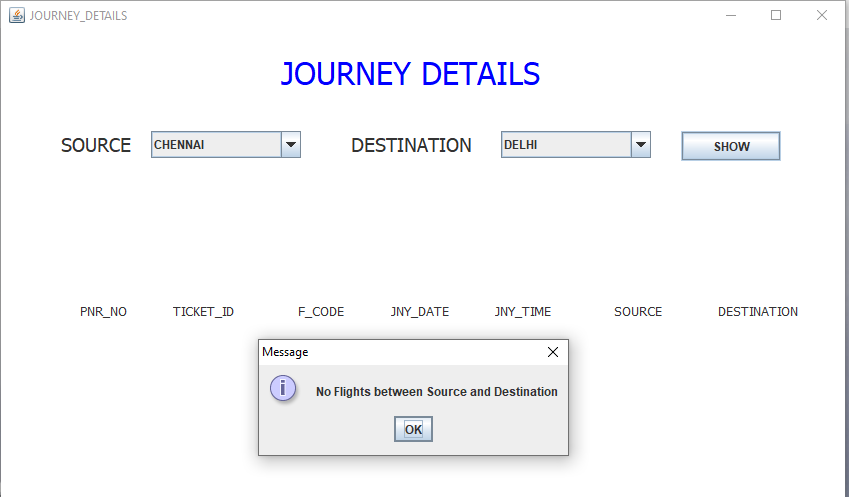
**Flight Information**



**Adding Customer**



**Payment Details**

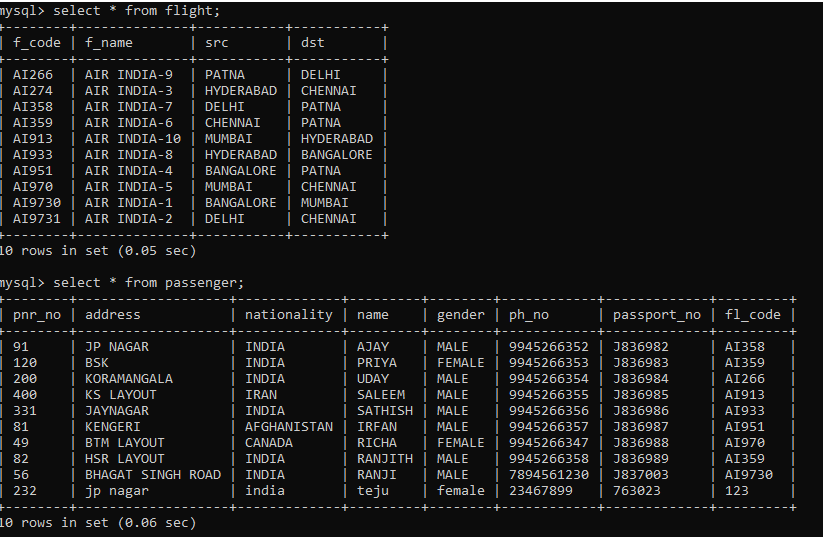


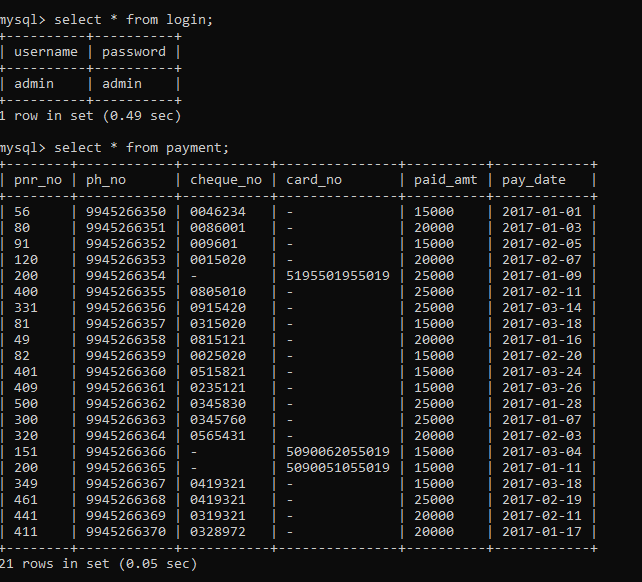
**Journey Details**

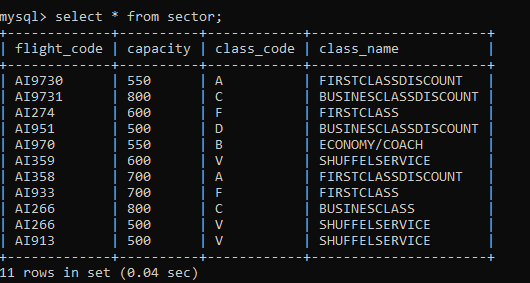
****

**Cancellation**

**Backend Records**





**Back End  
 **

# EXPERIMENTAL RESULTS AND ANALYSIS:

# This section presents the experimental results obtained from the testing and evaluation of the Airline Management System. The analysis focuses on system performance, user satisfaction, and the effectiveness of various functionalitie

# FUTURE SCOPE:

he future scope of Airline Management Systems (AMS) is promising, driven by technological advancements and evolving customer expectations. Here are some key areas of potential growth:

# CONCLUSION

This project on Airline Management System is the automation of registration process of

airline system. The system is able to provide much information like passenger’s details, flight

details and the 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 passenger’s requirements. This project has guided our path through various aspects of computer science where developing online application plays a major role.

# REFERENCES

[1]<https://developers.openshift.com/database/mysql.html>

### [2] Web References- https://youtu.be/UbIIFLsEeiM