



# C.K.PITHAWALA COLLEGE OF ENGINEERING & TECHNOLOGY, SURAT

Branch:- Computer 4<sup>th</sup> Year/8<sup>th</sup> Sem

Group No:- 10

Subject:- Project-II (2180706)

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# Project Topic

Face Recognition System for  
Boarding control at Airport

# ❖ Topics to be covered:

- 1) Current Challenges and Motivation
- 2) Project Definition
- 3) Benefits
- 4) Aims and Objectives
- 5) Literature Review
- 6) System Modules
- 7) Project Specification
- 8) Implementation
- 9) Design
- 10) References

# ❖ Current Challenges and Motivation

- People often associate air travel with waiting.
- Hours of standing in line to check in, get through safety and for boarding.
- Traditional boarding control is much slower, unreliable.
- Boarding pass can be faked.

## ❖ Project Definition

- passenger have to book their flight tickets.
- The prerequisite of this system is that all the required biometric of the passengers will be available from passport office.
- At the time of boarding, the passengers passes through the built-in camera, which clicks their photo and matches it with that of database photo which fetched from passport office.
- If the person is legit then he is allowed to board, otherwise not.
- The passenger may present their unique photo ID proof at the time of boarding.
- Using biometric data, the process can be made smooth and simplified.

## ❖ Benefits

- Faster compared to Traditional boarding control.
- Biometric data is much more reliable than its paper counterpart as it can't be faked.
- It accelerates boarding and improve security systems.

## ❖ Aim & Objective

- The Aim of our project is to make boarding easier and quicker for passengers flying on an aircraft.
- This system is one of the biometric information processes. The System uses a combination of techniques in two stages: Face Detection and Recognition.
- We will be having the sample image of the passengers boarding on the flight. Face Detection is applied on live acquired images. Face Recognition algorithms are applied in order to perform image processing. Based upon the processing, the passenger is checked for his/her legacy to board.
- By using this we will be able to save the time of passenger.
- As we know due to boarding process passengers have to wait so long so, we can reduce this waiting time by using this system because it is automatic process so, it will take lesser time than manual process.

## ❖ Literature Review

Algorithm	Description	Advantage	Disadvantage
Eigen faces	Eigen Faces refers to an appearance-based approach to face recognition that seeks to capture the variation in a collection of face images and use this information to encode and compare images of individual faces in a holistic (as opposed to a parts-based or feature-based) manner.	Extract the relevant facial information, which may or may not be directly related to human intuition of face features such as the eyes, nose, and lips. One way to do so is to capture the statistical variation between face images.	Eigenface approach is not robust when dealing with extreme variations in pose as well as in expression and disguise



## ❖ Literature Review (Cont..)

Algorithm	Description	Advantage	Disadvantage
Fisher faces	The most known DA is Linear Discriminant Analysis (LDA), which can be derived from an idea suggested by R.A. Fisher in 1936. When LDA is used to find the subspace representation of a set of face images, the resulting basis vectors defining that space are known as Fisher faces.	Same as in Eigen faces algorithm	Same as in Eigen faces algorithm.

## ❖ Literature Review (Cont..)

Algorithm	Description	Advantage	Disadvantage
Local Binary Patterns	<b>Local binary patterns (LBP)</b> is a type of visual descriptor used for classification in computer vision. LBP is the particular case of the Texture Spectrum model proposed in 1990.LBP was first described in 1994. It has since been found to be a powerful feature for texture classification	<ul style="list-style-type: none"><li>• High discriminative power</li><li>• Computational simplicity</li><li>• Invariance to grayscale changes and</li><li>• Good performance.</li></ul>	<ul style="list-style-type: none"><li>• Not invariant to rotations</li><li>• The size of the features increases exponentially with the number of neighbours which leads to an increase of computational complexity in terms of time and space</li><li>• The structural information captured by it is limited. Only pixel difference is used, magnitude information ignored.</li></ul>

## ❖ Literature Review (Cont..)

➤ Summary of OpenCV algorithms:

### **Eigen Faces (Holistic / Global Approach)**

Codes and decodes image to gain recognition

Uses Principal Component Analysis (PCA)

### **Fisher Faces (Feature based / Local Approach)**

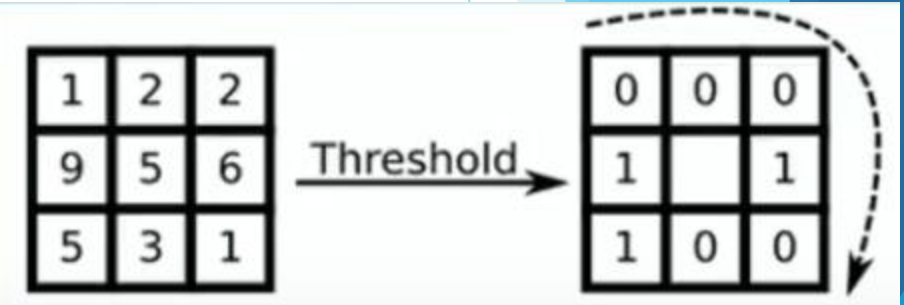
Better handles interpersonal images such as lighting

Uses Linear Discriminant Analysis (LDA)

### **Local binary pattern histograms**

Comparison of each pixel to its neighbours

## ❖ Literature Review (Cont..)



## ❖ Literature Review (Cont..)

- The following review is based on the hardware used for face recognition.

No.	Hardware	Description
1.	Camera Module	In earlier applications camera of 4.0 mega-pixels was used. It is dependent on us to put greater pixels of camera.
2.	Dot Projector	Well, Face ID first makes a 3D image, and for that, the dot projector throws 30000dots on the face of the user within milliseconds. These 30000 dots of light create and builds a map of your face and then the infrared camera reads the dot structure on your face.

## ❖ System Modules

Modules
<b>Ticket Module:</b> The ticket module is used to book flight ticket for particular airlines.
<b>Face Detection Module(Software Module):</b> This Module will use face detection algorithms to take samples of the passengers' face and calculate the face features.
<b>Face Recognition &amp; Image Processing Module(Software Module):</b> This module will be a feature for identifying faces according to the changes in the person's face.
<b>Generate Boarding pass Module:</b> This module will fetch data from database according to passport id and generate boarding pass.

# ❖ Project Specifications (Tools and Technologies)

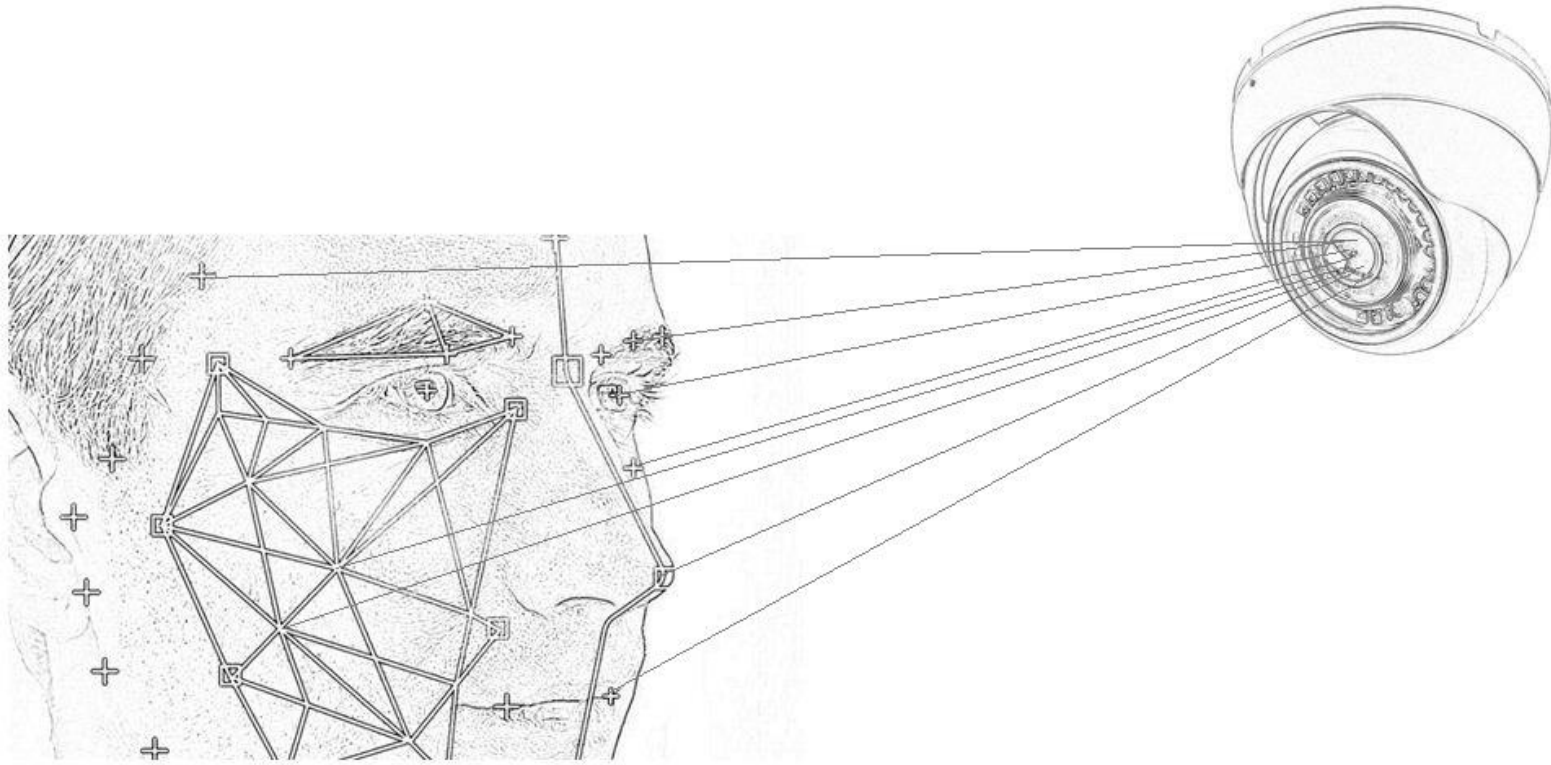
## ❖ **Hardware:**

- Camera
- Dot projection

## ❖ **Software:**

- **PIL(Python Imaging Library):** Provides support for opening, manipulating, and saving many different image file formats.
- **OpenCV:** Searches faces from a picture.
- **Face\_recognition module:** Provides various steps for face recognition using grey scale.
- **PyCharm:** Python IDE
- **Pillow:** Provide support for image operation.

# ❖ Pictorial Representation





# Implementation (Web Development)

# Interface 1: Home Page

[Home](#)[Register](#)[Login ▾](#)[Help](#)[Contact Us](#)[About Us](#)

# Interface 2: Passenger Registration Page

[Home](#)[Register](#)[Login ▾](#)[Help](#)[Contact Us](#)[About Us](#)

## Register Your self

Name:

Email:

Password:

Confirm Password:

Contact-No:

Upload Your Image:

 No file chosen

Address:

# Interface 3: Login Page

[Home](#)[Register](#)[Login ▾](#)[Help](#)[Contact Us](#)[About Us](#)[Admin Login](#)[Customer Login](#)

## Customer Log in

Email:

Password:

### GOBOARD

GoBoard provides options for viewing different flights available with different timings for a particular date and provides customers with the booking facility with Easy boarding facility at airport.

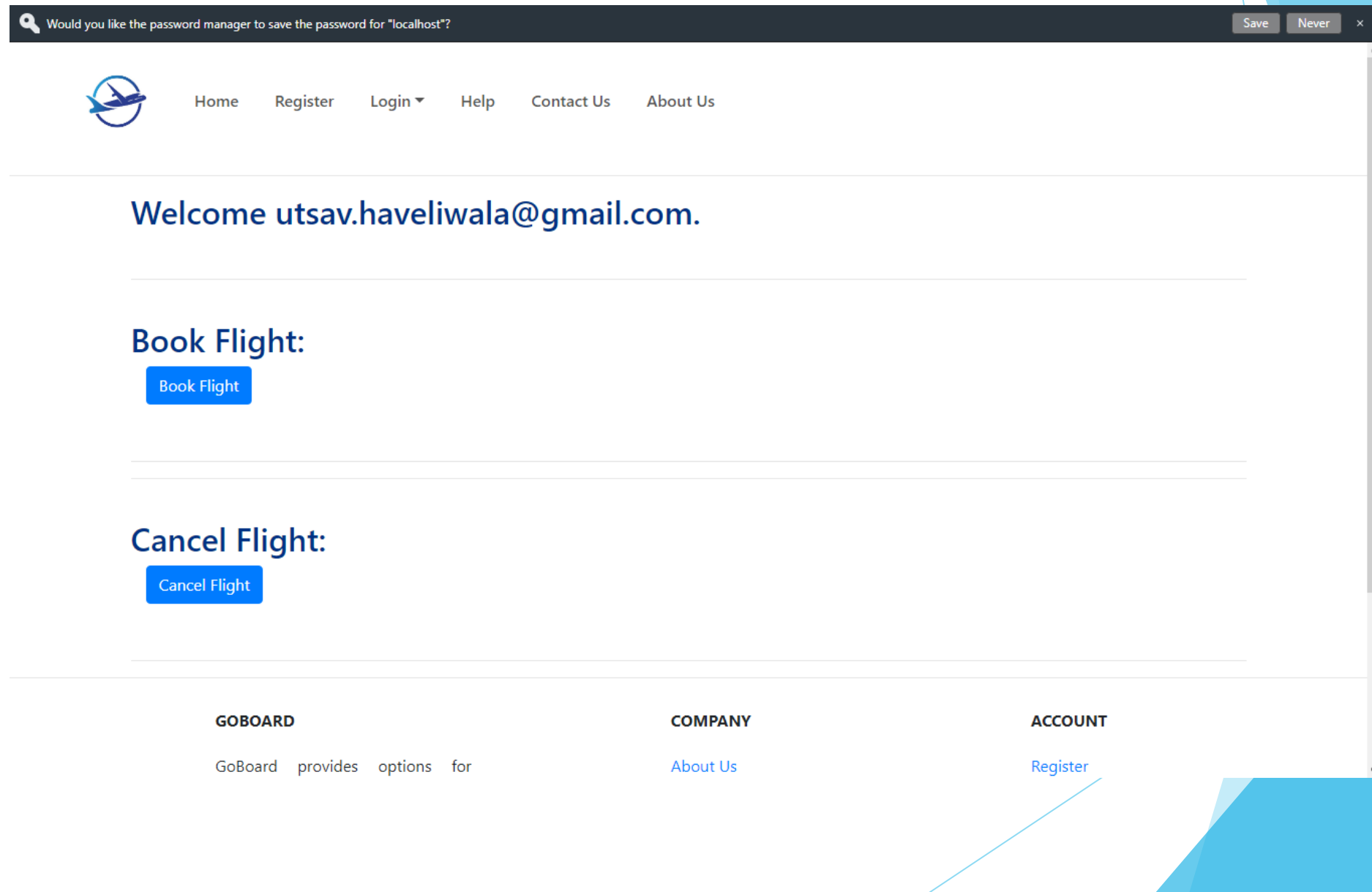
### COMPANY

[About Us](#)[Contact Us](#)[Terms & Condition](#)[Help](#)

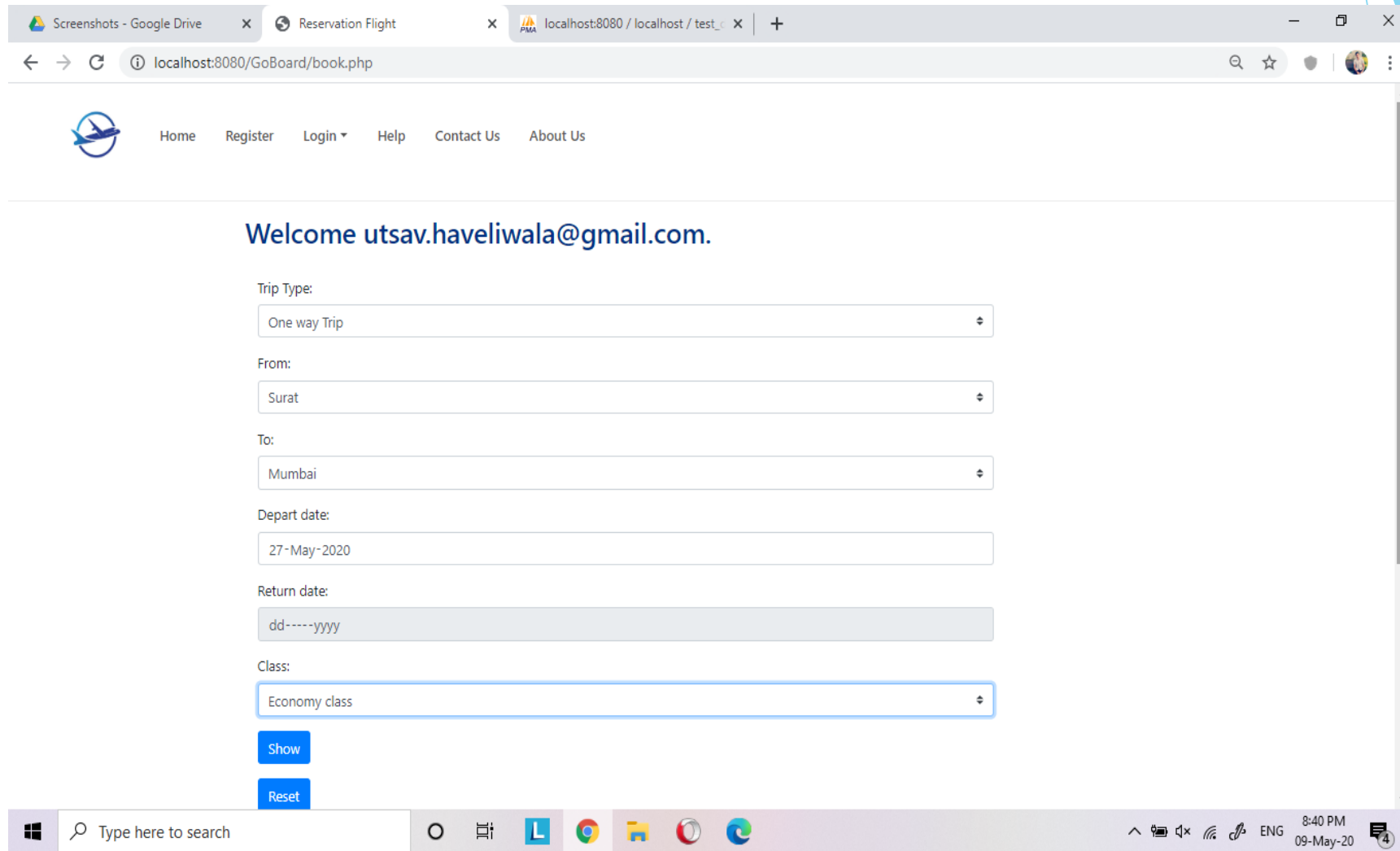
### ACCOUNT

[Register](#)[Log in](#)

# Interface 4: Passenger Account Page



# Interface 5: Flight Ticket Booking Page



The screenshot shows a web browser window with the address bar displaying 'localhost:8080/GoBoard/book.php'. The page features a navigation bar with a logo and links for Home, Register, Login, Help, Contact Us, and About Us. Below the navigation bar, a welcome message reads 'Welcome utsav.haveliwala@gmail.com.' The main form contains several input fields: 'Trip Type' (One way Trip), 'From' (Surat), 'To' (Mumbai), 'Depart date' (27-May-2020), 'Return date' (dd-----yyyy), and 'Class' (Economy class). At the bottom of the form are 'Show' and 'Reset' buttons. The Windows taskbar at the bottom shows the search bar, task view button, and several application icons, with the system clock indicating 8:40 PM on 09-May-20.

Screenshots - Google Drive x Reservation Flight x localhost:8080 / localhost / test\_c x +

localhost:8080/GoBoard/book.php

Home Register Login Help Contact Us About Us

Welcome utsav.haveliwala@gmail.com.

Trip Type:  
One way Trip

From:  
Surat

To:  
Mumbai

Depart date:  
27-May-2020

Return date:  
dd-----yyyy

Class:  
Economy class

Show

Reset

Type here to search

8:40 PM  
09-May-20

# Interface 6: Flight Information Page

Screenshots - Google Drive x List of Flight x localhost:8080 / localhost / test\_ x +

localhost:8080/GoBoard/list.php

Home Register Login Help Contact Us About Us

## Show Flight Record:

### Record Found

Flight_Name	Flight_No	Company_Name	From_Loc	To_Loc	Time	Date	Class	Rate	Book
Air India	AI985	AIR INDIA	Surat	Mumbai	8:00	2020-05-27	Economy class	6000	<a href="#">Book</a>
Air India	AI986	AIR INDIA	Surat	Mumbai	15:21	2020-05-27	Economy class	4900	<a href="#">Book</a>
Air Asia	AS653	AIR ASIA	Surat	Mumbai	14:20	2020-05-27	Economy class	4900	<a href="#">Book</a>
Thai Airways	AS655	THAI AIRWAYS	Surat	Mumbai	21:35	2020-05-27	Economy class	6500	<a href="#">Book</a>

[Close](#)

### GOBOARD

GoBoard provides options for viewing different flights available with different timings for a particular date and provides

### COMPANY

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[Contact Us](#)  
[Terms & Condition](#)

### ACCOUNT

[Register](#)  
[Log Out](#)

Type here to search

8:40 PM 09-May-20

# Interface 7: Ticket Reservation Page



[Home](#) [Register](#) [Login ▾](#) [Help](#) [Contact Us](#) [About Us](#)

## Fill Your Details:

You are booking your ticket from Surat to Mumbai of Flight No : AI986 Dated: 2020-05-27.

Serial No	Passport ID	Name	Sex	Age
1.	<input type="text" value="U1508199"/>	<input type="text" value="Utsav Haveliwala"/>	<input type="text" value="Male"/>	<input type="text" value="22"/>
2.	<input type="text" value="R0803199"/>	<input type="text" value="Rahul Gandhi"/>	<input type="text" value="Male"/>	<input type="text" value="21"/>
3.	<input type="text"/>	<input type="text"/>	<input type="text" value="Male"/>	<input type="text"/>
4.	<input type="text"/>	<input type="text"/>	<input type="text" value="Male"/>	<input type="text"/>

Submit

Close



# Interface 8: Ticket Confirmation Page



[Home](#) [Register](#) [Login ▼](#) [Help](#) [Contact Us](#) [About Us](#)

## Invoice Of Ticket

User_Id	Passport_Id	Name	sex	age	Flight_No	From_Loc	To_Loc	Time	Date	Rate
utsav.haveliwala@gmail.com	U1508199	Utsav Haveliwala	male	22	AI986	Surat	Mumbai	15:21	2020-05-27	4900
utsav.haveliwala@gmail.com	R0803199	Rahul Gandhi	male	21	AI986	Surat	Mumbai	15:21	2020-05-27	4900

Pay Rs. 9800

Close

# Interface 9: Ticket Cancellation Page

[Home](#)[Register](#)[Login ▾](#)[Help](#)[Contact Us](#)[About Us](#)

## Ticket Cancellation:

User\_Id:

Flight No:

Date:



### GOBOARD

GoBoard provides options for viewing different flights available with different timings for a particular date and provides

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### ACCOUNT

[Register](#)[Log Out](#)

# Interface 9: Payment Page

Payment




Confirm Payment of Rs.9800

Owner	CVV
<input type="text" value="Utsav Haveliwala"/>	<input type="text" value="786"/>

Card Number

Expiration Date

<input type="text" value="August"/>	<input type="text" value="2020"/>
-------------------------------------	-----------------------------------



Confirm

# Implementation (Database Design)

# Table 1: Database

The screenshot displays the phpMyAdmin web interface in a browser window. The address bar shows 'localhost/phpmyadmin/index.php'. The left sidebar shows the 'test\_db (6)' database selected, with a list of tables: admin, book, city, flight, images, and signup. The main panel shows the 'Structure' tab for the 'test\_db' database. It lists 6 tables with their respective actions, records, types, collations, sizes, and overheads.

Table	Action	Records	Type	Collation	Size	Overhead
<input type="checkbox"/> admin		~1	InnoDB	latin1_swedish_ci	16.0 KiB	-
<input type="checkbox"/> book		~0	InnoDB	latin1_swedish_ci	16.0 KiB	-
<input type="checkbox"/> city		~10	InnoDB	latin1_swedish_ci	16.0 KiB	-
<input type="checkbox"/> flight		~5	InnoDB	latin1_swedish_ci	16.0 KiB	-
<input type="checkbox"/> images		~2	InnoDB	latin1_swedish_ci	16.0 KiB	-
<input type="checkbox"/> signup		~2	InnoDB	latin1_swedish_ci	16.0 KiB	-
6 table(s)	Sum	~20	InnoDB	latin1_swedish_ci	96.0 KiB	0 B

Below the table list, there are links for 'Check All / Uncheck All' and 'With selected:'. Further down, there are links for 'Print view' and 'Data Dictionary'. At the bottom, there is a section for 'Create new table on database test\_db' with fields for 'Name' and 'Number of fields', and a 'Go' button. A link 'Open new phpMyAdmin window' is also present.

# Table 2: Booking Table

localhost:8080 / localhost / test\_c x +

localhost:8080/phpmyadmin/index.php?db=test\_db&token=93c05abfd02cff1a86e09539b451d87

phpMyAdmin

Database: test\_db (7)

test\_db (7)

- admin
- book
- city
- flight
- images
- passport
- signup

Server: localhost Database: test\_db Table: book "InnoDB free: 11264 kB; ('Passport\_Id') REFER 'test\_db/passport'('Passport\_Id')"

Browse Structure SQL Search Insert Export Import Operations Empty Drop

Field	Type	Collation	Attributes	Null	Default	Extra	Action
<input type="checkbox"/> User_Id	varchar(30)	latin1_swedish_ci		No			
<input type="checkbox"/> Passport_Id	varchar(8)	latin1_swedish_ci		No			
<input type="checkbox"/> Name	varchar(50)	latin1_swedish_ci		No			
<input type="checkbox"/> Sex	varchar(5)	latin1_swedish_ci		No			
<input type="checkbox"/> Age	int(3)			No			
<input type="checkbox"/> Flight_No	varchar(10)	latin1_swedish_ci		No			
<input type="checkbox"/> From_Loc	varchar(10)	latin1_swedish_ci		No			
<input type="checkbox"/> To_Loc	varchar(10)	latin1_swedish_ci		No			
<input type="checkbox"/> Time	varchar(10)	latin1_swedish_ci		No			
<input type="checkbox"/> Date	varchar(11)	latin1_swedish_ci		No			
<input type="checkbox"/> B_time	varchar(50)	latin1_swedish_ci		Yes	NULL		
<input type="checkbox"/> Gate	varchar(50)	latin1_swedish_ci		Yes	NULL		
<input type="checkbox"/> <u>Seat_No</u>	int(10)			No		auto_increment	
<input type="checkbox"/> Rate	varchar(10)	latin1_swedish_ci		No			
<input type="checkbox"/> Paid	int(1)			No			

Check All / Uncheck All With selected:

Print view Relation view Propose table structure

Add 1 field(s) At End of Table At Beginning of Table After User\_Id Go

Indexes: ?					Space usage			Row Statistics	
Keyname	Type	Cardinality	Action	Field	Type	Usage	Statements	Value	
PRIMARY	PRIMARY	4		Seat_No	Data	16,384 B	Format	Compact	
Passport_Id	INDEX	4		Passport_Id	Index	16,384 B	Collation	latin1_swedish_ci	
Create an index on 1 columns Go					Total	32,768 B	Next Autoindex	18	
							Creation	Mar 16, 2020 at 02:21 PM	

Type here to search

8:26 PM 09-May-20

# Table 3: City Table

Server: localhost ▶ Database: test\_db ▶ Table: city "InnoDB free: 11264 kB"

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#) [Import](#) [Operations](#) [Empty](#) [Drop](#)

Field	Type	Collation	Attributes	Null	Default	Extra	Action
<input type="checkbox"/> City	varchar(20)	latin1_swedish_ci		No			

↑ [Check All / Uncheck All](#) With selected:

[Print view](#) [Relation view](#) [Propose table structure](#)

Add 1 field(s) ☒ At End of Table ☐ At Beginning of Table ☐ After City [Go](#)

Indexes: ⓘ					Space usage		Row Statistics	
Keyname	Type	Cardinality	Action	Field	Type	Usage	Statements	Value
PRIMARY	PRIMARY	25		City	Data	16,384 B	Format	Compact
Create an index on 1 columns <a href="#">Go</a>					Index	0 B	Collation	latin1_swedish_ci
					Total	16,384 B	Creation	Mar 16, 2020 at 02:21 PM

[Open new phpMyAdmin window](#)

Type here to search

8:26 PM 09-May-20

# Table 4: Flight Table

localhost:8080 / localhost / test\_ x +

localhost:8080/phpmyadmin/index.php?db=test\_db&token=93c05abfd02cff1a86e09539b451d87

phpMyAdmin



































































Database: test\_db (7)







test\_db (7)

- admin
- book
- city
- flight
- images
- passport
- signup

Server: localhost ▶ Database: test\_db ▶ Table: flight "InnoDB free: 11264 kB"



Browse Structure SQL Search Insert Export Import Operations Empty Drop

	Field	Type	Collation	Attributes	Null	Default	Extra	Action
<input type="checkbox"/>	Flight_Name	varchar(30)	latin1_swedish_ci		No			     
<input type="checkbox"/>	Flight_No	varchar(20)	latin1_swedish_ci		No			     
<input type="checkbox"/>	Company_Name	varchar(20)	latin1_swedish_ci		Yes	NULL		     
<input type="checkbox"/>	From_Loc	varchar(20)	latin1_swedish_ci		Yes	NULL		     
<input type="checkbox"/>	To_Loc	varchar(20)	latin1_swedish_ci		Yes	NULL		     
<input type="checkbox"/>	Time	varchar(10)	latin1_swedish_ci		Yes	NULL		     
<input type="checkbox"/>	Date	date			Yes	NULL		     
<input type="checkbox"/>	B_time	varchar(50)	latin1_swedish_ci		No			     
<input type="checkbox"/>	Gate	varchar(50)	latin1_swedish_ci		No			     
<input type="checkbox"/>	Class	varchar(20)	latin1_swedish_ci		Yes	NULL		     
<input type="checkbox"/>	Rate	varchar(10)	latin1_swedish_ci		Yes	NULL		     

Check All / Uncheck All With selected:      

Print view Relation view Propose table structure

Add 1 field(s) At End of Table At Beginning of Table After Flight\_Name Go

Indexes: ?				Space usage		Row Statistics		
Keyname	Type	Cardinality	Action	Field	Type	Usage	Statements	Value
PRIMARY	PRIMARY	51	 	Flight_No	Data	16,384 B	Format	Compact
Create an index on 1 columns Go					Index	0 B	Collation	latin1_swedish_ci
					Total	16,384 B	Creation	Mar 16, 2020 at 02:21 PM

Open new phpMyAdmin window

Type here to search

8:26 PM 09-May-20



# Table 6: Passengers Table

localhost:8080 / localhost / test\_c x +

localhost:8080/phpmyadmin/index.php?db=test\_db&token=93c05abfdf02cff1a86e09539b451d87

phpMyAdmin

























Database: test\_db (7)






test\_db (7)

- admin
- book
- city
- flight
- images
- passport
- signup

Server: localhost Database: test\_db Table: signup "InnoDB free: 11264 kB"



Browse Structure SQL Search Insert Export Import Operations Empty Drop

	Field	Type	Collation	Attributes	Null	Default	Extra	Action
<input type="checkbox"/>	Email	varchar(30)	latin1_swedish_ci		No			     
<input type="checkbox"/>	Password	varchar(20)	latin1_swedish_ci		Yes	NULL		     
<input type="checkbox"/>	ContactNo	varchar(10)	latin1_swedish_ci		Yes	NULL		     
<input type="checkbox"/>	Address	varchar(30)	latin1_swedish_ci		Yes	NULL		     

Check All / Uncheck All With selected:     

Print view Relation view Propose table structure

Add 1 field(s) At End of Table At Beginning of Table After Email Go

Indexes: 0					Space usage		Row Statistics	
Keyname	Type	Cardinality	Action	Field	Type	Usage	Statements	Value
PRIMARY	PRIMARY	14	 	Email	Data	16,384 B	Format	Compact
Create an index on 1 columns Go					Index	0 B	Collation	latin1_swedish_ci
					Total	16,384 B	Creation	Mar 16, 2020 at 02:21 PM

Open new phpMyAdmin window

Type here to search

8:26 PM 09-May-20

# Table 7: Admin Table

Server: localhost ▶ Database: test\_db ▶ Table: admin "InnoDB free: 11264 kB"

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#) [Import](#) [Operations](#) [Empty](#) [Drop](#)

Field	Type	Collation	Attributes	Null	Default	Extra	Action
<input type="checkbox"/> Email	varchar(30)	latin1_swedish_ci		No			
<input type="checkbox"/> Password	varchar(20)	latin1_swedish_ci		Yes	NULL		

↑ [Check All](#) / [Uncheck All](#) With selected:

[Print view](#) [Relation view](#) [Propose table structure](#)

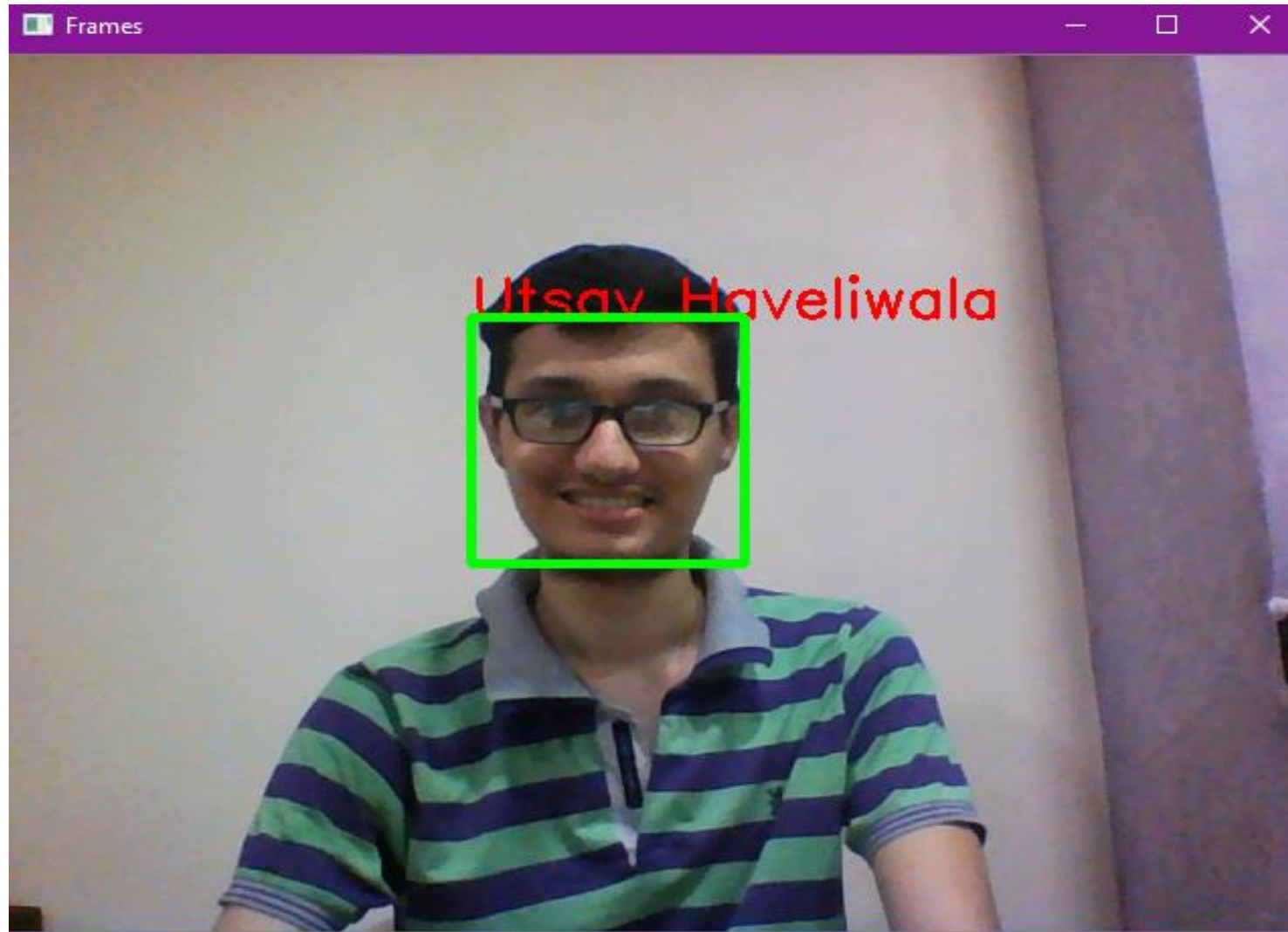
[Add](#) 1 field(s) ☒ At End of Table ☐ At Beginning of Table ☐ After Email [Go](#)

Indexes: ?					Space usage		Row Statistics	
Keyname	Type	Cardinality	Action	Field	Type	Usage	Statements	Value
PRIMARY	PRIMARY	1		Email	Data	16,384 B	Format	Compact
Create an index on 1 columns <a href="#">Go</a>					Index	0 B	Collation	latin1_swedish_ci
					Total	16,384 B	Creation	Mar 16, 2020 at 02:21 PM

[Open new phpMyAdmin window](#)


# Implementation (Face Recognition Algorithm)

# Recognizing Face



# Boarding Pass

Utsav Haveliwala's Boarding Pass




## BOARDING PASS

Passanger Name: **Utsav Haveliwala**

From: **Surat**      Carrier:

To: **Ahmedabad**      Date: **2020/05/27**      Time: **6:55**

Flight	Seat	Gate	Board till:
<b>ID856</b>	<b>16</b>	<b>Y</b>	<b>6:25</b>



## BOARDING PASS

Passanger Name: **Utsav Haveliwala**

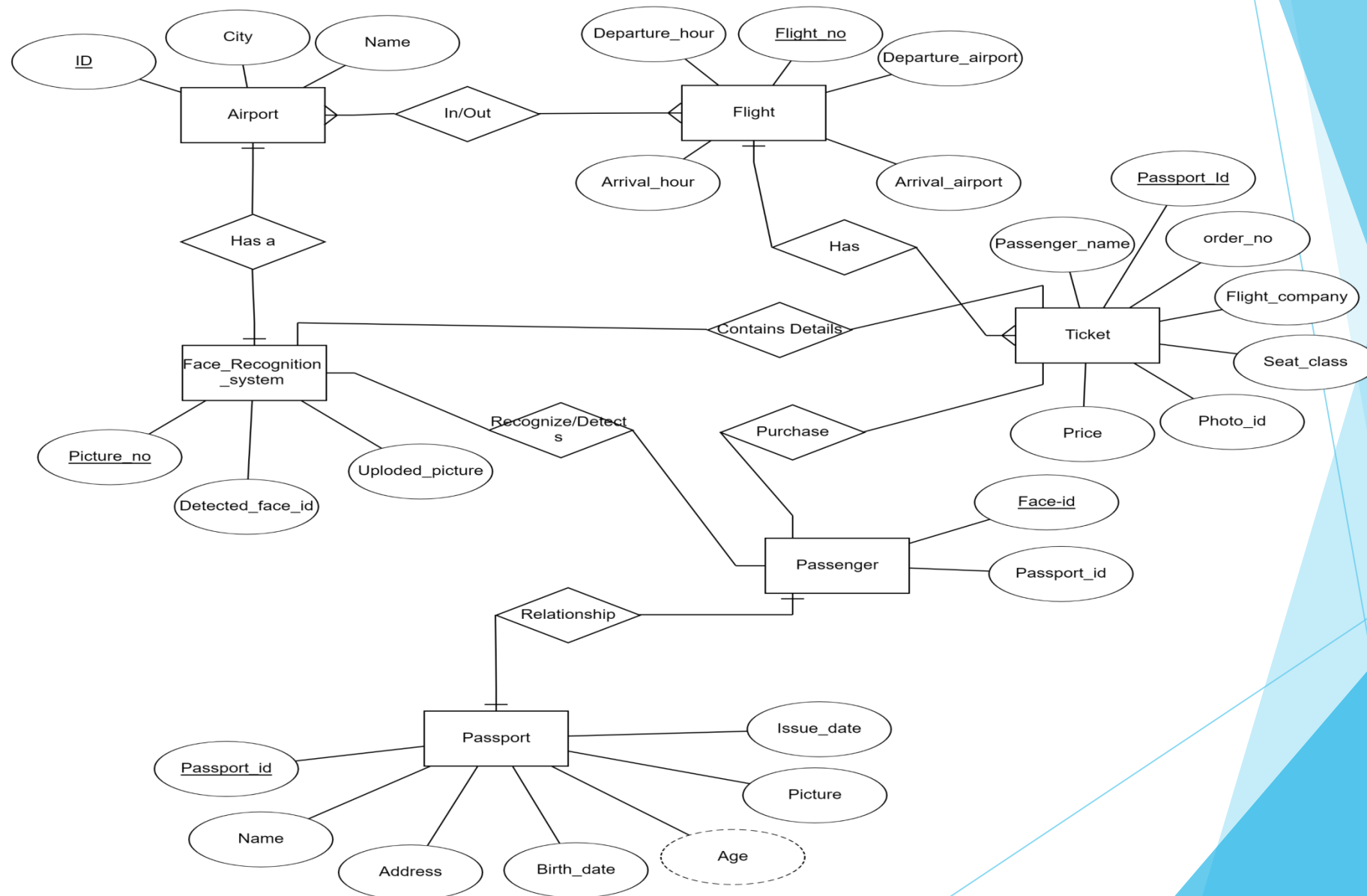
From: **Surat**

To: **Ahmedabad**

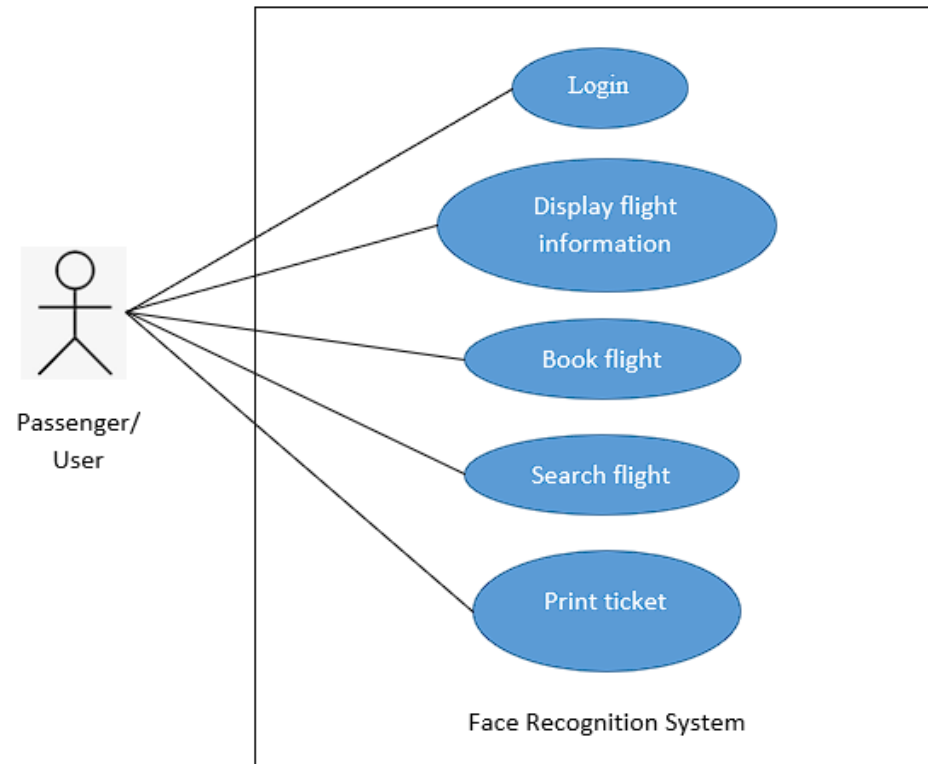
Date:	Time:	Gate:
<b>2020/05/27</b>	<b>6:55</b>	<b>Y</b>

Flight:	Seat:	Board till:
<b>ID856</b>	<b>16</b>	<b>6:25</b>

# ❖ ER-Diagram

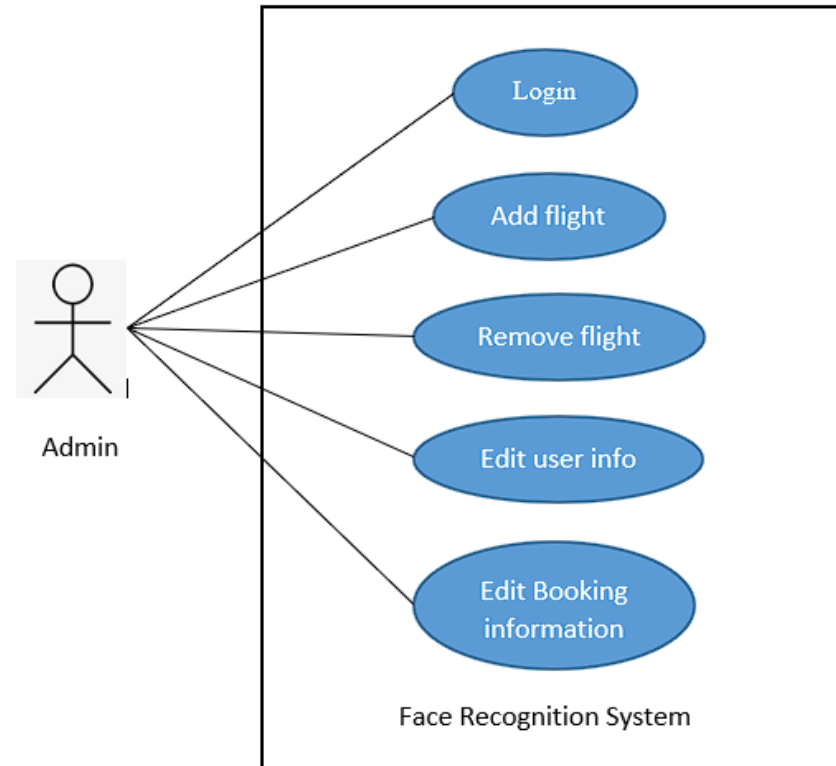


# ❖ Use-case Diagram



Use – case diagram of  
Passenger/User

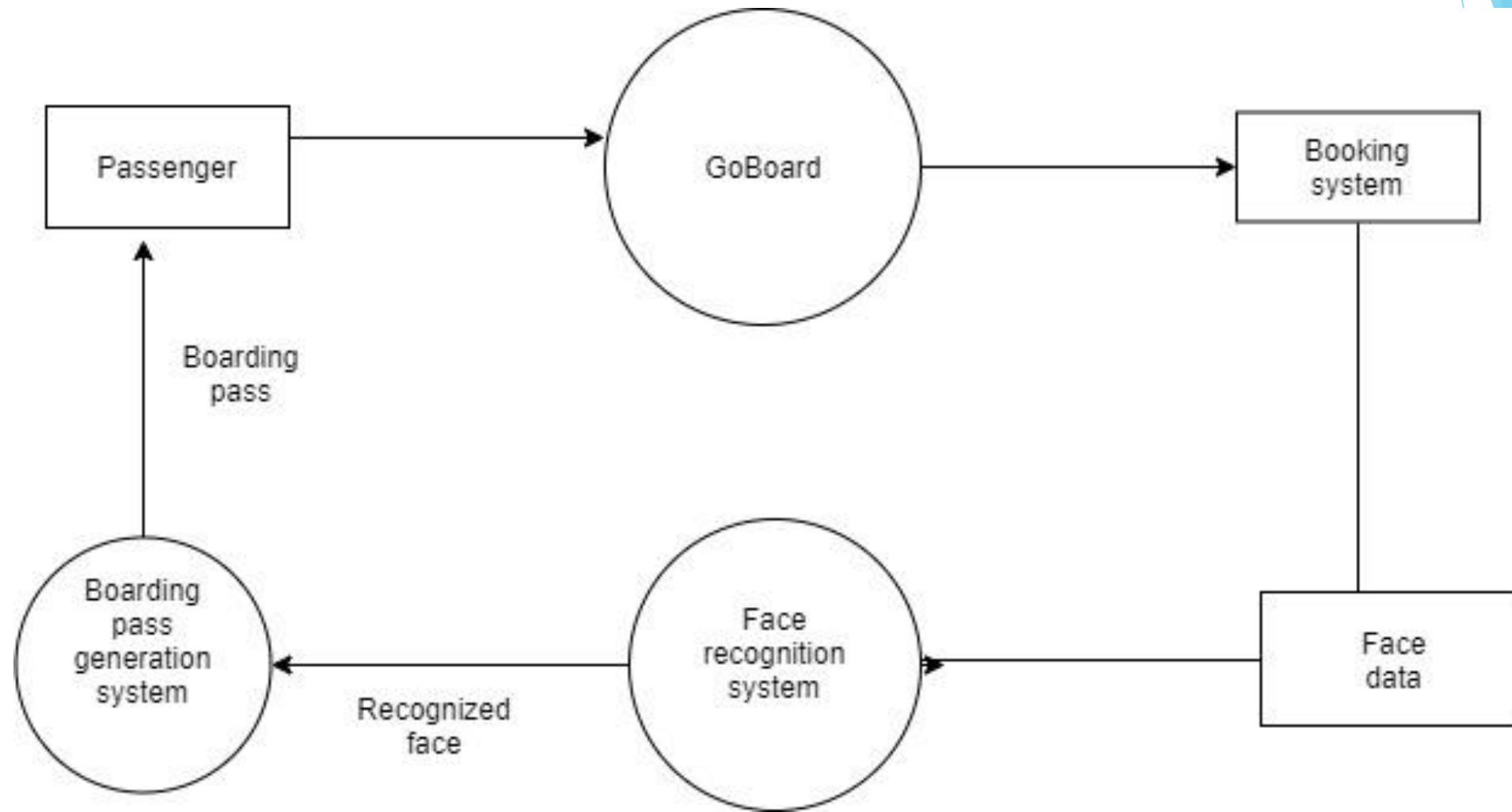
# Use-case Diagram



Use-case diagram of Admin



# ❖ DFD



## ❖ Conclusion And Future Scope

- To conclude, in many countries passengers are facing the problem of standing for long time in queue and waiting for too long. The waiting time can be curtailed by the given system. The passengers do not have to wait long as compared to traditional system. The security flaws can be overcome by this system.
- As machine learning is a tremendously trending now a days. Many organizations are enforcing face recognition system for their system. The face recognition system can be equipped with any organization to for the lap of clover.
- Even many airports have introduced this system since 2014 and many are going to introduce the same.

## ❖ References

No	References
1.	<a href="https://www.researchgate.net/publication/228790347"><u>https://www.researchgate.net/publication/228790347</u></a> A Summary of literature review Face Recognition
2.	<a href="https://www.researchgate.net/publication/233864740"><u>https://www.researchgate.net/publication/233864740</u></a> Face Recognition A Literature Review
3.	<a href="http://ijcttjournal.org/Volume5/number-4/IJCTT-V5N4P136.pdf"><u>http://ijcttjournal.org/Volume5/number-4/IJCTT-V5N4P136.pdf</u></a>

Thank You