



AMERICAN INTERNATIONAL UNIVERSITY -BANGLADESH

PROJECT : Airplane Ticket buying management system

Course

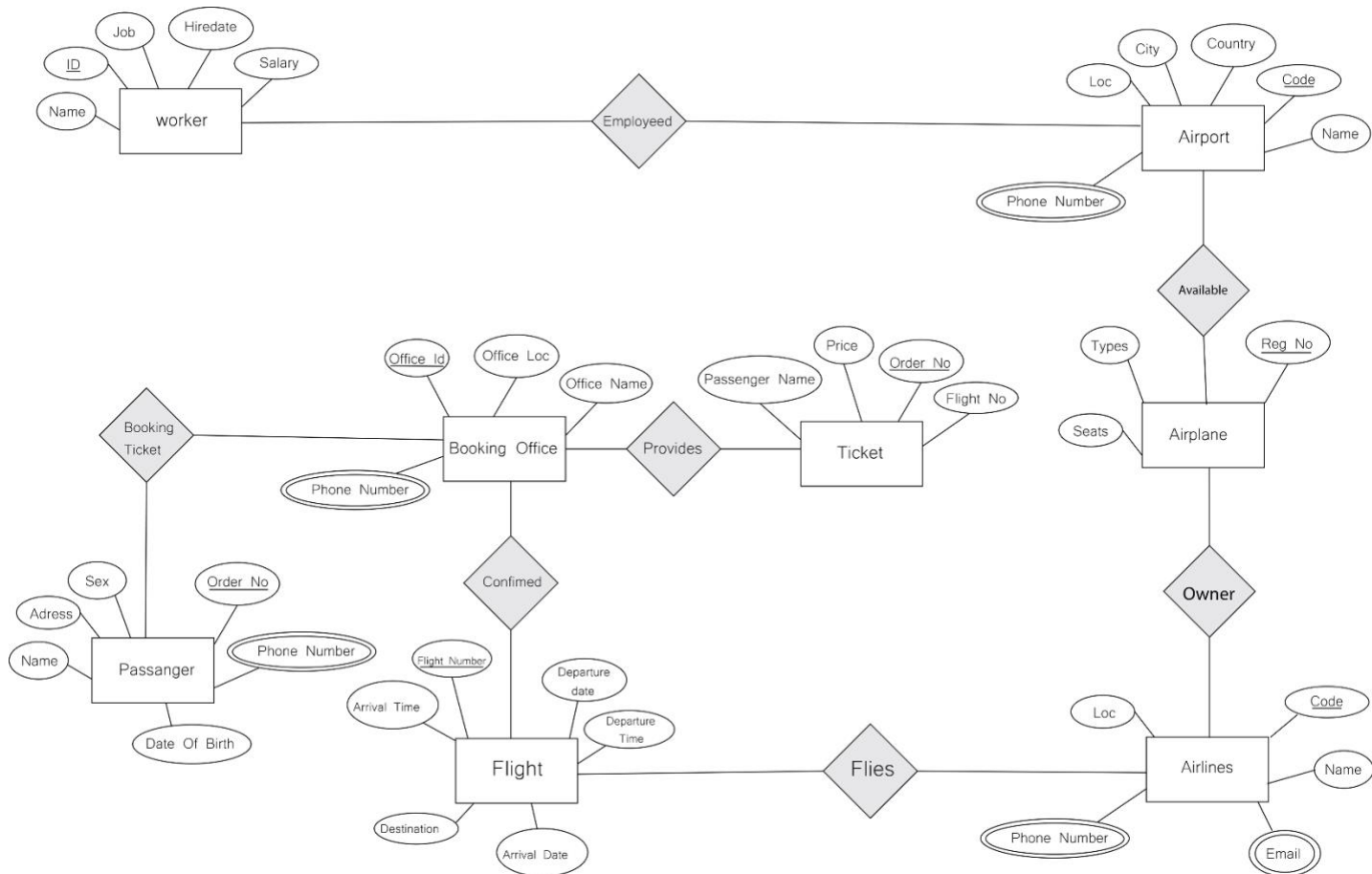
Introduction to Database

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Objective :

The main objective of this project is to develop a basic data base on the management system of buying airplane ticket.

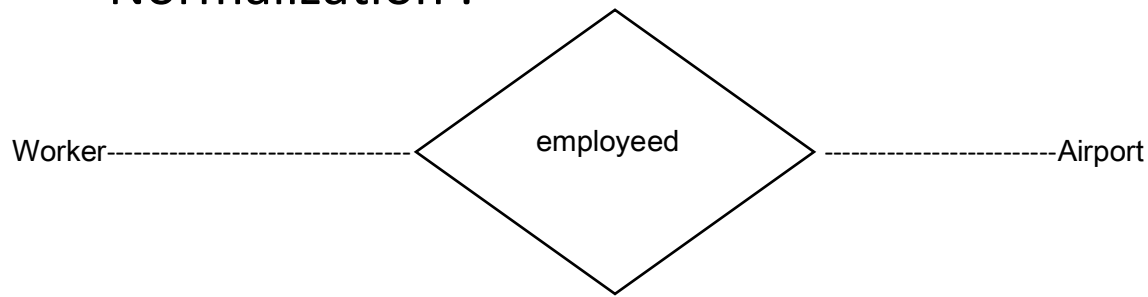
# ER Diagram



# Tables :

- 1)Worker
- 2)Airport
- 3)Airplane
- 4)Airline
- 5)Flight
- 6)BookingOffice
- 7)Passenger
- 8)Ticket

## Normalization :



UNF :

(ID,Name,Job,Hiredate,Salary,Code,Name,Country,City,Loc,Phone)

1NF :

Phone Has Multi Value Attribute

2NF :

(ID,Name,Job,Hiredate,Salary)

(Code,Name,Country,City,Loc,Phone)

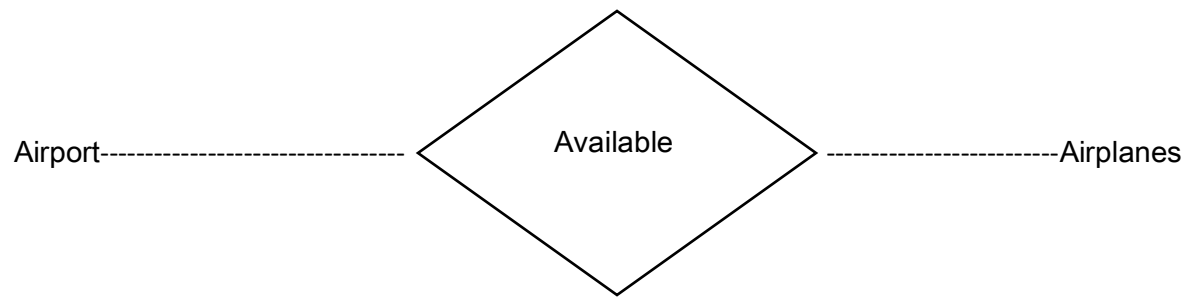
3NF :

Already in 3NF

Table :

Worker (ID,Name,Job,Hiredate,Salary,Code)

Airport (Code,Name,Country,City,Loc,Phone)



UNF : (Code,Name,Country,City,Loc,Phone,Reg No)

1NF :

Phone Has Multi Value Attribute

2NF :

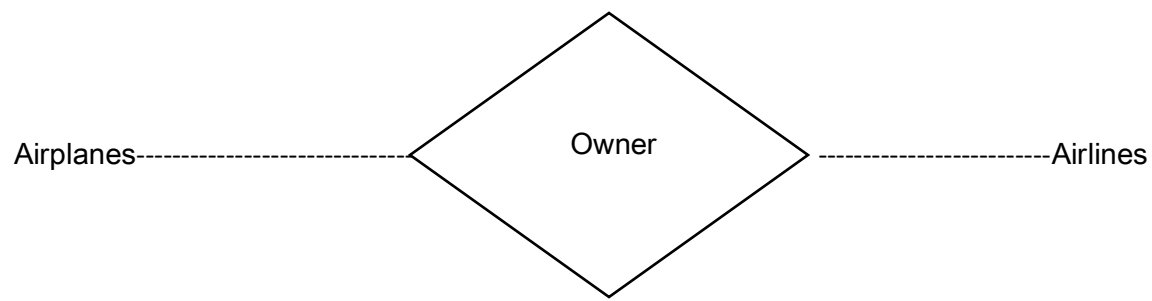
(Code,Name,Country,City,Loc,Phone)

(Reg No,Types,Seats)

Table :

Airport (Code,Name,Country,City,Loc,Phone,Reg no)

Airplane (Reg No,Types,Seats)



UNF : owner (Code,Name,Types,Seats,Loc,Phone,Reg No,email,)

1NF :

Phone,Email Has Multi Value Attribute

2NF :

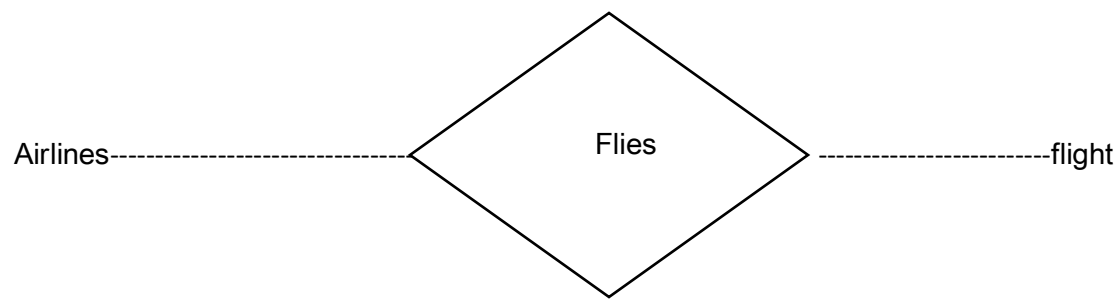
(Reg No,types,seats)

(Code,Name,Phone,Loc,Email)

Table:

Airplane (Reg No,Types,Seats,(code))

Airline (Code,Name,Phone,Loc,Email)



UNF : Flies (Code,Name,Loc,Phone,Email,FlightNo,Arrival Time,Destination,Arrival Date,Departure Time,Departure Date)

1NF :

Phone,Email Has Multi Value Attribute

2NF :

(Code,Name,Phone,Loc,Email)

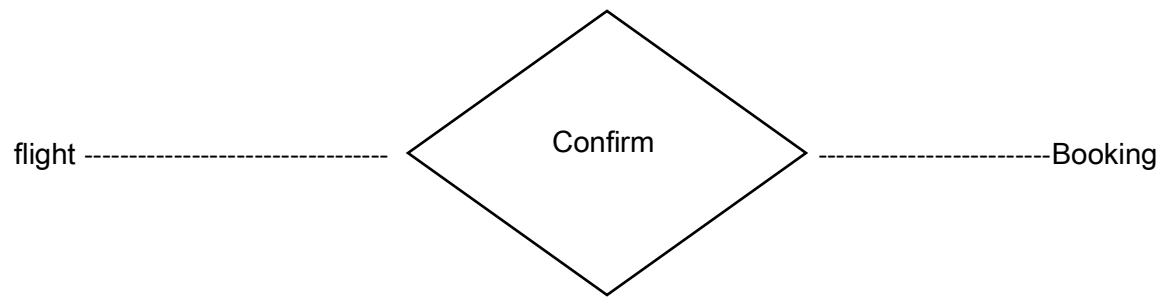
(Arrival Time,Destination,Arrival Date,Departure Time,Departure Date)

Table:

Airline (Code,Name,Phone,Loc,Email,Flight No)

Flight (FlightNo,Arrival Time,Destination,Arrival Date,Departure Time,Departure Date)





UNF : (Flight no,Office ID,Office Name,Office Loc,Phone,Arrival Time,Destination,Arrival Date,Departure Time,Departure Date)

1NF :

Phone Has Multi Value Attribute

2NF :

(Flight No,Arrival Time,Destination,Arrival Date,Departure Time,Departure Date)

(Office ID,Office Name,Office Loc,Phone)

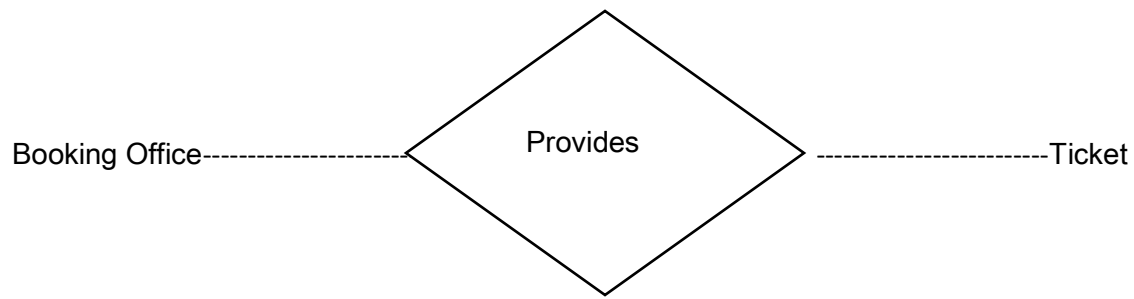
3NF:

Already In 3NF

Table:

Flight (FlightNo,Arrival Time,Destination,Arrival Date,Departure Time,Departure Date,Office ID )

Booking Office (Office ID,Office Name,Office Loc,Phone)



UNF : Provides(Flight no,Office ID,Office Name,Office Loc,Phone,Order No,Price)

1NF :

Phone Has Multi Value Attribute

2NF :

(Office ID,Office Name,Office Loc,Phone)

(Ticket No,Price,Flight No)

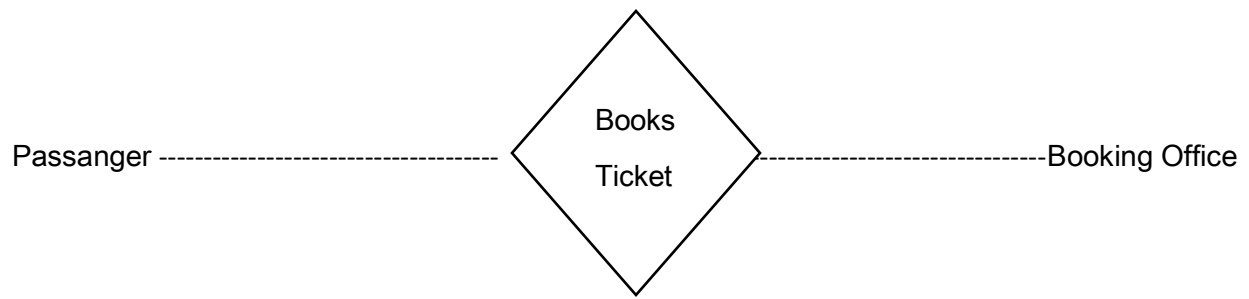
3NF:

Already In 3NF

Table:

Booking Office (Office ID,Office Name,Office Loc,Phone,Ticket No)

Ticket (Ticket No,Price,Flight No)



UNF : Books Ticket (Order No,Name,Address,Sex,Phone,Office ID,Office Name,Office Loc,Ofiice Phone, Ticket No)

1NF :

Phone Has Multi Value Attribute

2NF :

(Order No,Name,Address,Sex,Phone)

(Office ID,Office Name,Office Loc,Ofiice Phone, Ticket No)

3NF:

Already In 3NF

Table:

Passanger (Order No,Name,Address,Sex,Phone,(Office ID) )

Booking Office (Office ID,Office Name,Office Loc,Ofiice Phone, Ticket No)

### 1) Worker

Results Explain Describe Saved SQL History

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
WORKER	EMPID	Number	-	4	0	1	-	-	-
	NAME	Varchar2	10	-	-	-	✓	-	-
	JOB	Varchar2	9	-	-	-	✓	-	-
	HIREDATE	Date	7	-	-	-	✓	-	-
	SAL	Number	-	7	2	-	✓	-	-
	CODE	Varchar2	7	-	-	-	✓	-	-

## DESC AIRPORT

Results Explain Describe Saved SQL History

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
AIRPORT	CODE	Varchar2	7	-	-	1	-	-	-
	NAME	Varchar2	30	-	-	-	✓	-	-
	COUNTRY	Varchar2	19	-	-	-	✓	-	-
	CITY	Varchar2	11	-	-	-	✓	-	-
	LOC	Varchar2	19	-	-	-	✓	-	-
	PHONE	Char	11	-	-	-	✓	-	-
	REGNO	Varchar2	5	-	-	-	✓	-	-
1 - 7									

### 3) Airplane

DESC AIRPLANE

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **AIRPLANE**[illegible]

#### 4) Airline

DESC AIRLINE

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **AIRLINE**[illegible]

## 5) Flight

```
|DESC FLIGHT|
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **FLIGHT**

[illegible]

## 6) BookingOff

DESC BOOKINGOFF

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **BOOKINGOFF**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
BOOKINGOFF	OFFICEID	Varchar2	4	-	-	1	-	-	-
	NAME	Varchar2	10	-	-	-	✓	-	-
	LOC	Varchar2	14	-	-	-	✓	-	-
	PHN	Char	11	-	-	-	✓	-	-
	TICKETNO	Number	-	10	0	-	✓	-	-

1 - 5

## 7) Ticket

DESC TICKET

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **TICKET**

[illegible]

## 8) Passenger

DESC PASSENGER

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **PASSENGER**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PASSENGER	<u>ORDERNO</u>	Varchar2	14	-	-	1	-	-	-
	<u>NAME</u>	Varchar2	10	-	-	-	✓	-	-
	<u>ADDRESS</u>	Varchar2	14	-	-	-	✓	-	-
	<u>SEX</u>	Varchar2	7	-	-	-	✓	-	-
	<u>PHN</u>	Char	11	-	-	-	✓	-	-
	<u>OFFICEID</u>	Varchar2	5	-	-	-	✓	-	-

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## Tables Data :

```
SELECT * FROM WORKER
```

Results	Explain	Describe	Saved SQL	History	
EMPID	NAME	JOB	HIREDATE	SAL	CODE
169	Hamim	Security	17-DEC-08	8000	DAC
121	Shafin	Manager	07-JUN-01	90000	DAC
131	Rafin	Officer	27-SEP-05	70000	DAC
101	Abid	Officer	22-MAY-07	75000	CGP
203	Musa	Security	03-JUL-07	7500	CGP
213	Fahim	Manager	09-OCT-10	95000	CGP
217	Uddin	Clerk	09-OCT-10	9500	CGP
117	Abul	Clerk	09-OCT-10	8500	DAC
317	Shafiq	Manager	19-NOV-13	85000	DAC
717	Qalif	Security	29-NOV-11	15000	zyl
710	Alif	Manager	27-MAR-08	15000	zyl
713	Sara	Officer	27-FEB-09	50000	zyl
633	Bina	Clerk	27-FEB-09	10000	zyl
33	Amina	Clerk	02-JAN-05	10000	JSR
3	Shafiq	Officer	03-AUG-07	40000	JSR
13	Rayhan	Manager	23-JUL-03	60000	JSR
11	Zaman	Security	03-JAN-14	9000	JSR
901	Pranto	Officer	13-APR-15	40000	CXB
938	Asif	Manager	23-JAN-12	70000	CXB
948	Labib	Clerk	11-SEP-06	15000	CXB
741	Atiq	Security	09-JUN-13	8000	CXB

### 1)Worker

### 2)Airport

```
SELECT * FROM AIRPORT
```

Results

Explain

Describe

Saved SQL

History

CODE	NAME	COUNTRY	CITY	LOC	PHONE	REGNO
DAC	Shahjalal Int. Airport	Bangladesh	DHAKA	Airport Road	02-7911042	BL
JSR	Jessore Airport	Bangladesh	Jessore	AirporT BY Road	37-7911042	AL
CGP	Shah Amanat Int. Airport	Bangladesh	CHITTAGONG	Airport Road,ctg	312500900	CL
zyl	Osmani Int. Airport	Bangladesh	SYLHET	Airport Road,SYLT	716982900	SL
CXB	Coxs Bazar Airport	Bangladesh	Coxs Bazar	Sadar Upazilla	0341-52353	CX

### 3)Airplane

```
SELECT * FROM AIRPLANE
```

**Results** Explain Describe Saved SQL History

REGNO	TYPES	SEATS	CODENO
BL	BUSINESS	278	UA72
AL	BUSINESS	278	NA11
CL	FIRST	278	BB1
SL	SECOND	278	RA64
CX	THIRD	158	UB98

## 4)Airline

```
SELECT * FROM AIRLINE
```

**Results** Explain Describe Saved SQL History

CODENO	NAME	PHONE	EMAIL	FLIGHTNO
UA72	United Airways	037-364271	unitedair@support.bd	ZR162
NA11	NovoAir	01715942013	Novo@bd.com	VQ723
BB1	Biman Bangladesh Airlines	01675842670	airlines@bd.gov	LT291
RA64	Regent Airways	01934722007	regentair@bd.com	RA775
UB98	US-Bangla Airlines	027-368542	airUS.Ban@bd.com	QM210

## 5)Flight

```
SELECT * FROM FLIGHT
```

**Results** Explain Describe Saved SQL History

FLIGHTNO	ARRIVAL_TIME	ARRIVAL_DATE	DESTINATION	DEPARTURE_TIME	DEPARTURE_DATE	OFFICEID
ZR162	22:30	26-APR-18	KOLKATA	23:00	26-APR-18	A11
VQ723	17:30	27-APR-18	RAJSHAHI	18:10	28-APR-18	A31
LT291	19:30	25-APR-18	RANGPUR	20:20	25-APR-18	Z73
RA775	00:30	25-APR-18	RANGPUR	00:50	25-APR-18	L21
UB98	01:30	01-MAY-18	MUMBAI	01:50	01-MAY-18	Q75

## 6)BookingOff



```
SELECT * FROM BOOKINGOFF
```

**Results** Explain Describe Saved SQL History

OFFICEID	NAME	LOC	PHN	TICKETNO
A11	PRANTOUR	AZIMPUR	01711509087	564171
A31	TOURCOM	MIRPUR	01698722012	743299
Z73	ROYALLINES	GULSHAN	01826909670	875243
L21	VIPTRAVELS	AGRABAD	01911709367	198753
Q75	CLASSIC	SHITAKUNDA	01521409887	158973

## 7) Passenger

```
SELECT * FROM PASSENGER
```

**Results** Explain Describe Saved SQL History

ORDERNO	NAME	ADDRESS	SEX	PHN	OFFICEID
V211	KHALID	BARIDHARA	MALE	01521441889	A11
LN11	HASSAN	BARIDHARA	MALE	01721881007	A11
CN11	HASAN	BARIDHARA	MALE	01611881007	A31
B691	FARIA	KOLATULI	FEMALE	01711881007	A31
B991	SADIA	KAKOLI	FEMALE	01917896163	Z73
W751	NOYON	CHASHARA	MALE	01711896263	L21
XM25	LABIB	UTTARA	MALE	01796800750	Q75

## 8) Ticket

```
SELECT * FROM TICKET
```

**Results** Explain Describe Saved SQL

TICKETNO	PRICE	FLIGHTNO
158973	15000	ZR162
198753	10000	VQ723
875243	8000	LT291
743299	7500	RA775
564171	25000	QM210

SQL Command :

1) Find out the workers name that starts with A

```
select * from worker where worker.name like 'A%'
```

Results

EMPID	NAME	JOB	HIREDATE	SAL	CODE
101	Abid	Officer	22-MAY-07	75000	CGP
117	Abul	Clerk	09-OCT-10	8500	DAC
710	Alif	Manager	27-MAR-08	15000	zyl
33	Amina	Clerk	02-JAN-05	10000	JSR
938	Asif	Manager	23-JAN-12	70000	CXB
741	Atiq	Security	09-JUN-13	8000	CXB

2) Find out airport and airplane details

```
select airport.*,types,seats from airport,airplane where airport.regno=airplane.regno
```

**Results** Explain Describe Saved SQL History

CODE	NAME	COUNTRY	CITY	LOC	PHONE	REGNO	TYPES	SEATS
DAC	Shahjalal Int. Airport	Bangladesh	DHAKA	Airport Road	02-7911042	BL	BUSINESS	278
JSR	Jessore Airport	Bangladesh	Jessore	AirporT BY Road	37-7911042	AL	BUSINESS	278
CGP	Shah Amanat Int. Airport	Bangladesh	CHITTAGONG	Airport Road,ctg	312500900	CL	FIRST	278
zyl	Osmani Int. Airport	Bangladesh	SYLHET	Airport Road,SYLT	716982900	SL	SECOND	278
CXB	Coxs Bazar Airport	Bangladesh	Coxs Bazar	Sadar Upazilla	0341-52353	CX	THIRD	158

5 rows returned in 0.01 seconds

[CSV Export](#)

3)Find out passenger name,destination,address,office name,ticketno .

```
select flight.destination,passenger.name,passenger.address,bookingoff.name,ticketno from flight,bookingoff,passenger where flight.officeid=bookingoff.officeid and passenger.officeid=bookingoff.officeid
```

**Results** Explain Describe Saved SQL History

DESTINATION	NAME	ADDRESS	NAME	TICKETNO
KOLKATA	KHALID	BARIDHARA	PRANTOUR	564171
KOLKATA	HASSAN	BARIDHARA	PRANTOUR	564171
RAJSHAHI	HASAN	BARIDHARA	TOURCOM	743299
RAJSHAHI	FARIA	KOLATULI	TOURCOM	743299
RANGPUR	SADIA	KAKOLI	ROYALLINES	875243
RANGPUR	NOYON	CHASHARA	VIPTRAVELS	198753
MUMBAI	LABIB	UTTARA	CLASSIC	158973

7 rows returned in 0.00 seconds

[CSV Export](#)

4)Find out the destination that costs more than 10000

```
select destination,price from flight,ticket where flight.flightno=ticket.flightno and price>10000
```

**Results** Explain Describe Saved SQL History

DESTINATION	PRICE
KOLKATA	15000

1 rows returned in 0.11 seconds

[CSV Export](#)

5) Find out the passenger whose name starts with F

```
select * from passenger where passenger.name like 'F%'
```

**Results** Explain Describe Saved SQL History

ORDERNO	NAME	ADDRESS	SEX	PHN	OFFICEID
B691	FARIA	KOLATULI	FEMALE	01711881007	A31

1 rows returned in 0.00 seconds

[CSV Export](#)

## 6) find out Officers

```
select * from worker where job='Officer'
```

Results Explain Describe Saved SQL History

EMPID	NAME	JOB	HIREDATE	SAL	CODE
131	Rafin	Officer	27-SEP-05	70000	DAC
101	Abid	Officer	22-MAY-07	75000	CGP
713	Sara	Officer	27-FEB-09	50000	zyl
3	Shafiq	Officer	03-AUG-07	40000	JSR
901	Pranto	Officer	13-APR-15	40000	CXB

## 7) find out the names of Manager and their duty in airport

```
select worker.name,worker.job,airport.name,airport.country from worker,airport where worker.code=airport.code and worker.job='Manager'
```

Results Explain Describe Saved SQL History

NAME	JOB	NAME	COUNTRY
Shafin	Manager	Shahjalal Int. Airport	Bangladesh
Fahim	Manager	Shah Amanat Int. Airport	Bangladesh
Shafiq	Manager	Shahjalal Int. Airport	Bangladesh
Alif	Manager	Osmani Int. Airport	Bangladesh
Rayhan	Manager	Jessore Airport	Bangladesh
Asif	Manager	Coxs Bazar Airport	Bangladesh

## 8)Find out the officer whose salary is less than 75000

```
select worker.name,worker.job,sal,airport.name,airport.country from worker,airport where worker.code=airport.code and worker.job='Officer' and worker.sal < 75000
```

Results Explain Describe Saved SQL History

NAME	JOB	SAL	NAME	COUNTRY
Rafin	Officer	70000	Shahjalal Int. Airport	Bangladesh
Sara	Officer	50000	Osmani Int. Airport	Bangladesh
Shafiq	Officer	40000	Jessore Airport	Bangladesh
Pranto	Officer	40000	Coxs Bazar Airport	Bangladesh

## 9) Find out passenger name and their booking office address.

```
select passenger.name,bookingoff.loc from bookingoff,passenger where passenger.officeid=bookingoff.officeid
```

Results Explain Describe Saved SQL History

NAME	LOC
KHALID	AZIMPUR
HASSAN	AZIMPUR
HASAN	MIRPUR
FARIA	MIRPUR
SADIA	GULSHAN
NOYON	AGRABAD
LABIB	SHITAKUNDA

## 10) Find out airlines and booking office name accordingly

```
select airline.name,bookingoff.name from airline,flight,bookingoff where airline.flightno=flight.flightno and flight.officeid=bookingoff.officeid
```

**Results** Explain Describe Saved SQL History

NAME	NAME
United Airways	PRANTOUR
NovoAir	TOURCOM
Biman Bangladesh Airlines	ROYALLINES
Regent Airways	VIPTRAVELS

This project helped me to understand how can we store many data and never loose them . I faced problem when I was normalizing this data .Normalization is very sensitive. I have learnt how SQL works and the program thinks. Now future plan is to observe our surrounding more carefully and try to make a database based on that .