AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH
(AIUB)
Faculty of Science and Technology
Department of Computer Science and Engineering

MID TERM REPORT

SECTION: B & C

Advance Database Management System

Submitted to:

Rezwan Ahmed

Assistant Professor

Computer Science

Department of CSE

Semester: Summer 2021-22

Date of Submission: 23/07/2022

Project Name: Air-Ticket Online Booking System

Serial no	Student's Name	ID	Dept.
1	SHADRIL HASSAN SHIFAT(C)	20-42451-1	CSE
2	ANIKA SABA IBTE SUM(C)	20-43242-1	CSE
3	PRITOM DEBNATH(B)	20-42414-1	CSE
4	MAHBUBA SHARMIN RUBA(B)	19-41565-3	CSE

Table of Contents

Introduction:

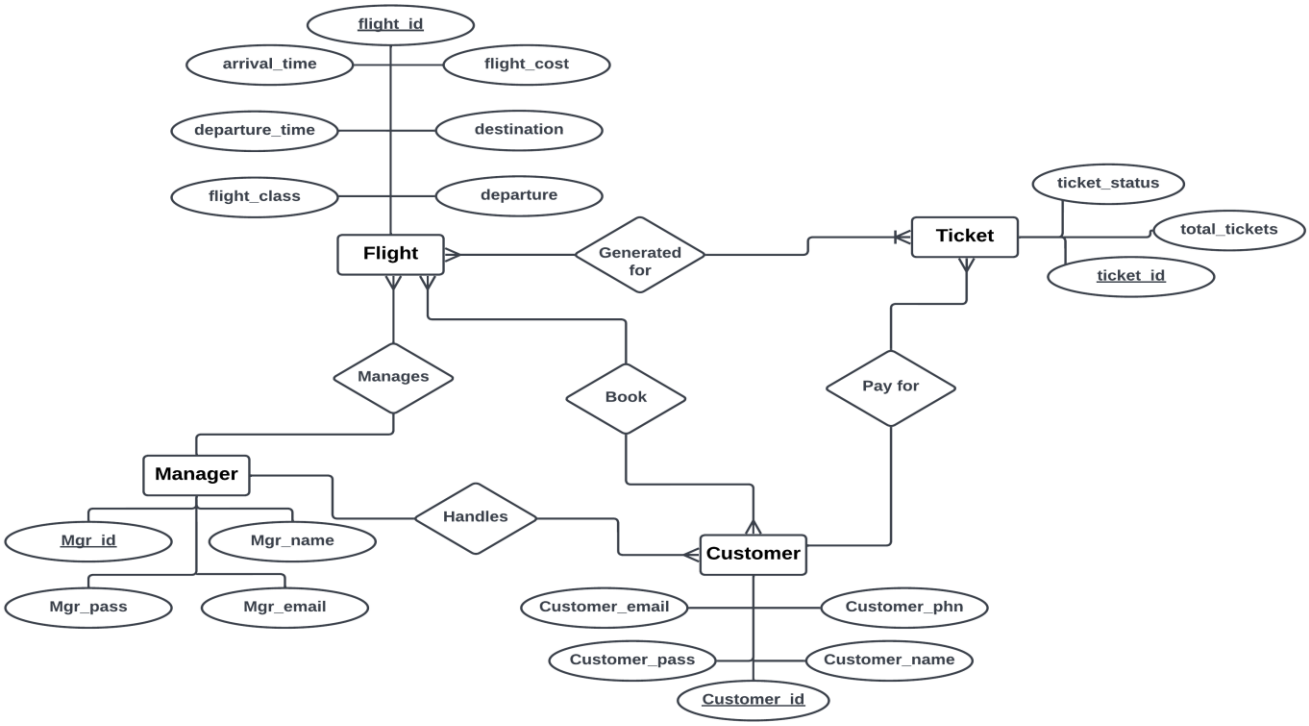
Our Air-Ticket Online Booking System is an implementation of a general Air-Ticketing application, which helps the customers to book the available air tickets. This system also covers various features like login of the customers, managing the functionalities of the application by the manager, customers can choose their ticket types and do online payment. During this pandemic situation, staying safe is the big issue for us. So, we designed our system user friendly so that customer can easily book the tickets and receive the tickets from online through the email. As Covid-19 situation is going out of our hands, we should be more careful making less gathering. That's why online booking of air tickets is mostly needed at this critical situation.

System Summary:

In this pandemic situation, many countries have forged ahead advancement of modern technologies. To achieve this in our country, technological collaborations are needed. Our proposed system makes sure that the customer has complete freedom, where the customers can log in to this system and can book their tickets by themselves. In our proposed system only, the registered users can book the tickets, view timing, availability of tickets and cancel their tickets. In this proposal, the entire work is done online and tickets with ID is also provided for passengers as a printed document.

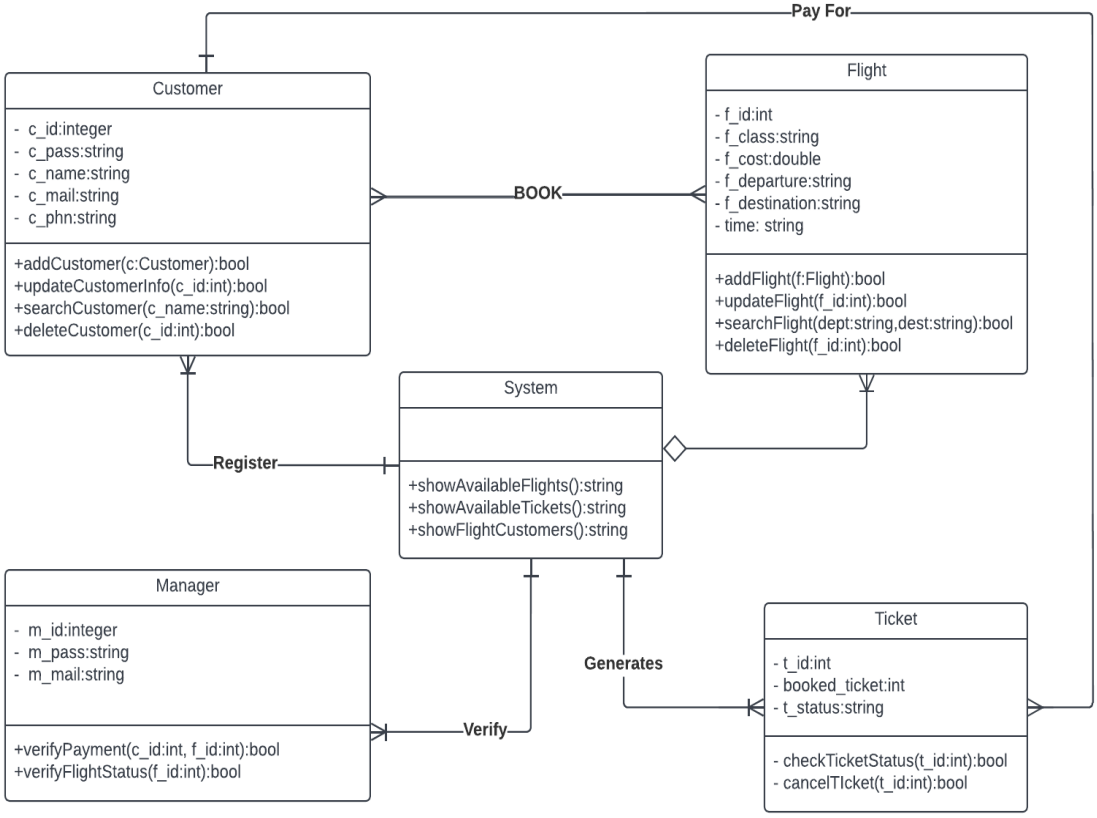
ERD Diagram:

Scenario Description: In an Air-ticket online booking system, a manager may handle many customers. The system stores customer name, id, mobile number, password, and e-mail. A customer is identified by a customer id. In this system, it stores manager name, id, password, and email. A manager is identified by manager id. One manager can manage by many flights. The system also stores flight id, arrival time, departure time, destination, cost, departure, and class. A flight is identified by a flight id. Many flights are generated by many tickets. The system stores ticket id, status, and total tickets. Many customers check many flights. One customer pays for many tickets.



Class Diagram:

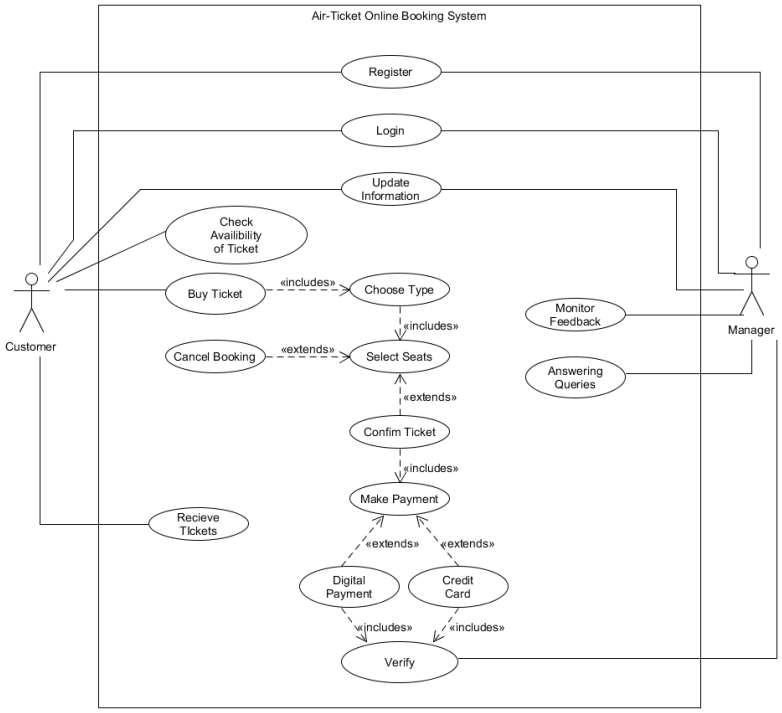
Customers can register to the system by providing their name, mobile no, address, and email. Anyone can see the flight list provided by the system. But to book the tickets one must log into the system. The system has the details of the flights. So, flight is a part of the system. A flight has its departure time and flight list is also included. Customers can book one or many tickets. Ticket type and seat no. must be chosen before confirming. Airport Manager must register himself by providing his name, email, and his id. He checks the system for verifying the payment method.



Use Case Diagram:

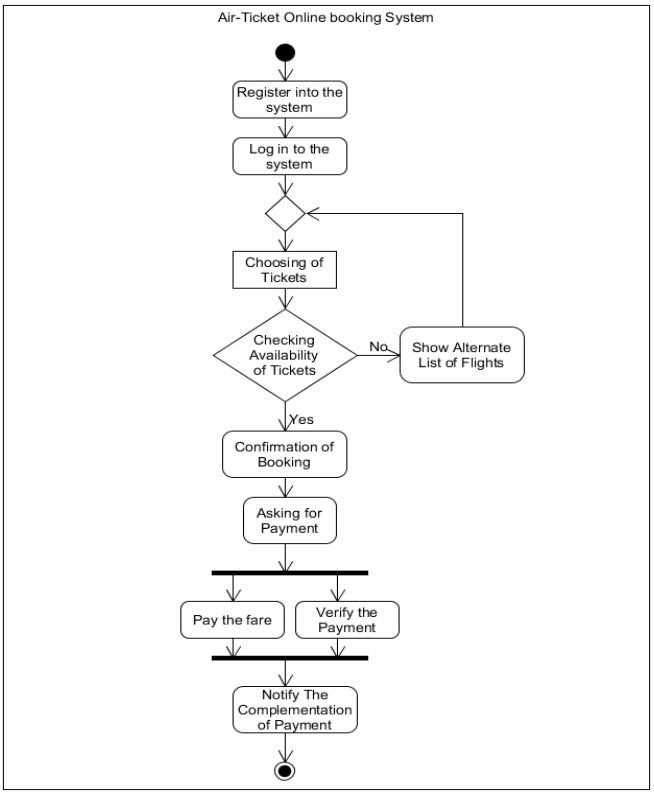
Use case diagram consists of use cases and actors and shows the interaction between them. The main purpose is to show the interaction between the use cases and the actor. To represent the system requirement from user's perspective. The use cases are the functions that are to be performed in the module. An actor could be the end-user of the system or an external system.

In our air-ticket online booking system, the customer will first register into the system for buying air tickets. They need to login into the system for getting access of the system. After that customer can check the availability of tickets from the system. If they want to buy tickets, they must choose the type of ticket. After choosing type, they must select seats. They have to pay for the tickets at the time they confirm their tickets, or they can cancel it too. They can pay by digital payment (bKash, Nagad & Rocket) or credit card. Manager can verify the payment method. After successfully confirming their payment, they will receive their ticket from the system. On the other hand, air-ticket manager also needs to register before login into the system. The manager needs to login into the system so that he can monitor the feedback forms and answer customer queries. Both customers and manager can update their information.

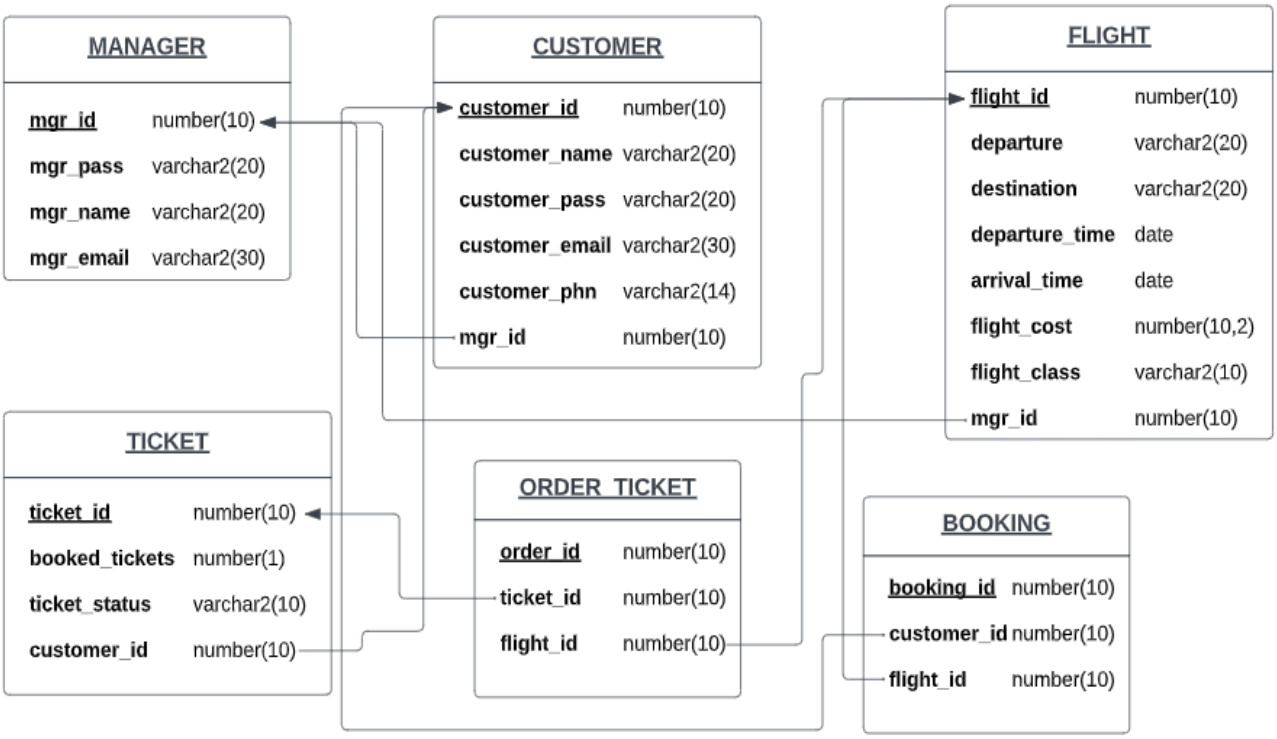


Activity Diagram:

In our Air-Ticket Online Booking System at first a customer registers himself/ herself to the system. After that he/she can log in to the system. Then they can choose the ticket type of their chosen flight and also the seats. If tickets are available, then they can proceed to confirm the booking. When a customer confirms the booking, the system asks for the payment. While a customer pays the fare of the tickets, the manager also verifies the payment. After verifying, the system notifies the customer about the complementation of the payment.



Schema Diagram:



Screenshots of Sample Data:

MANAGER Table:

Home > SQL > SQL Commands

Autocommit Display 10 Save Run

```
create sequence seq_mgr_id increment by 1 start with 1 nocache nocycle;

create table MANAGER(mgr_id number(10) primary key, mgr_pass varchar2(20), mgr_name varchar2(20), mgr_email varchar2(30));

INSERT INTO MANAGER(mgr_id, mgr_pass, mgr_name, mgr_email) VALUES(seq_mgr_id.NEXTVAL, 'tiger', 'shadril', 'shadrilhassan@outlook.com');
INSERT INTO MANAGER(mgr_id, mgr_pass, mgr_name, mgr_email) VALUES(seq_mgr_id.NEXTVAL, 'tiger1', 'shadril', 'shadrilhassan1@outlook.com');
INSERT INTO MANAGER(mgr_id, mgr_pass, mgr_name, mgr_email) VALUES(seq_mgr_id.NEXTVAL, 'scott', 'pritom', 'pritom@outlook.com');
INSERT INTO MANAGER(mgr_id, mgr_pass, mgr_name, mgr_email) VALUES(seq_mgr_id.NEXTVAL, 'debnath', 'debnath', 'debnath@outlook.com');
INSERT INTO MANAGER(mgr_id, mgr_pass, mgr_name, mgr_email) VALUES(seq_mgr_id.NEXTVAL, 'hassan', 'hassan', 'hassan@outlook.com');

delete from MANAGER where mgr_id=5;

select * from MANAGER;
```

Results Explain Describe Saved SQL History

MGR_ID	MGR_PASS	MGR_NAME	MGR_EMAIL
1	tiger	shadril	shadrilhassan@outlook.com
2	tiger1	shadril	shadrilhassan1@outlook.com
3	scott	pritom	pritom@outlook.com
4	debnath	debnath	debnath@outlook.com
6	hassan	hassan	hassan@outlook.com

5 rows returned in 0.00 seconds CSV Export

CUSTOMER Table:

Home > SQL > SQL Commands

Autocommit Display 10 Save Run

```
create sequence seq_customer_id increment by 1 start with 1 nocache nocycle;

drop table CUSTOMER;

create table CUSTOMER(customer_id number(10) primary key, customer_name varchar2(20), customer_pass varchar2(20), customer_email varchar2(30), customer_phn
varchar2(14), mgr_id number (10), foreign key(mgr_id) references MANAGER (mgr_id));

insert into CUSTOMER(customer_id, customer_name, customer_pass, customer_email, customer_phn, mgr_id) VALUES (seq_customer_id.NEXTVAL, 'Abir', 'coolman',
'abir@yahoo.com','01754402481',1);
insert into CUSTOMER(customer_id, customer_name, customer_pass, customer_email, customer_phn, mgr_id) VALUES (seq_customer_id.NEXTVAL, 'Nafis', 'sawroop',
'nafis@gmail.com','01954403842',1);
insert into CUSTOMER(customer_id, customer_name, customer_pass, customer_email, customer_phn, mgr_id) VALUES (seq_customer_id.NEXTVAL, 'Gourob', 'adhikary',
'gourob@yahoo.com','01791522500',3);
insert into CUSTOMER(customer_id, customer_name, customer_pass, customer_email, customer_phn, mgr_id) VALUES (seq_customer_id.NEXTVAL, 'Meraz', 'm@hasan',
'merz@yahoo.com','01977723500',4);
insert into CUSTOMER(customer_id, customer_name, customer_pass, customer_email, customer_phn, mgr_id) VALUES (seq_customer_id.NEXTVAL, 'Bin', 'Bin1',
'b10@yahoo.com','018533012345',2);

select * from customer;
```

Results Explain Describe Saved SQL History

CUSTOMER_ID	CUSTOMER_NAME	CUSTOMER_PASS	CUSTOMER_EMAIL	CUSTOMER_PHN	MGR_ID
1	Abir	coolman	abir@yahoo.com	01754402481	1
2	Nafis	sawroop	nafis@gmail.com	01954403842	1
3	Gourob	adhikary	gourob@yahoo.com	01791522500	3
4	Meraz	m@hasan	merz@yahoo.com	01977723500	4
5	Bin	Bin1	b10@yahoo.com	018533012345	2

5 rows returned in 0.00 seconds CSV Export

TICKET Table:

Home > SQL > SQL Commands

Autocommit Display 10 Save Run

```
create sequence seq_ticket_id increment by 1 start with 1 nocache nocycle;

drop table TICKET;

create table TICKET (ticket_id number(10) primary key, total_ticket number(1), ticket_status varchar2(10), customer_id number (10), foreign key(customer_id)
references CUSTOMER (customer_id));

insert into TICKET values (seq_ticket_id.NEXTVAL, 1, 'booked',2);
insert into TICKET values (seq_ticket_id.NEXTVAL, 2, 'available',3);
insert into TICKET values (seq_ticket_id.NEXTVAL, 1, 'booked',1);
insert into TICKET values (seq_ticket_id.NEXTVAL, 3, 'available',3);
insert into TICKET values (seq_ticket_id.NEXTVAL, 1, 'available',4);

select * from TICKET;
```

Results Explain Describe Saved SQL History

TICKET_ID	TOTAL_TICKET	TICKET_STATUS	CUSTOMER_ID
1	1	booked	2
2	2	available	3
3	1	booked	1
4	3	available	3
5	1	available	4

FLIGHT Table:

Home > SQL > SQL Commands

Autocommit Display 10 Save Run

```
create sequence seq_flight_id increment by 1 start with 1 nocache nocycle;

drop table FLIGHT;

create table FLIGHT(flight_id number(10) primary key, departure varchar2(20), destination varchar2(20), departure_time date, arrival_time date, flight_cost number
(10,2), flight_class varchar2(10), mgr_id number (10), foreign key(mgr_id) references MANAGER(mgr_id));

INSERT INTO FLIGHT(flight_id, departure, destination, departure_time, arrival_time, flight_cost, flight_class, mgr_id) VALUES (seq_flight_id.NEXTVAL, 'dhaka','cox
bazar', to_date ('5-aug-22 10:00 a.m.','dd-mon-yy hh:mi a.m.'), to_date ('5-aug-22 11:30 a.m.','dd-mon-yy hh:mi a.m.'), 7000, 'Economy',2);
INSERT INTO FLIGHT(flight_id, departure,destination, departure_time, arrival_time, flight_cost, flight_class, mgr_id) VALUES (seq_flight_id.NEXTVAL,
'dhaka','chittagong', to_date ('6-sep-22 10:00 a.m.','dd-mon-yy hh:mi a.m.'), to_date ('6-sep-22 11:30 a.m.','dd-mon-yy hh:mi a.m.'), 5000, 'Business',3);
INSERT INTO FLIGHT(flight_id, departure,destination, departure_time, arrival_time, flight_cost, flight_class, mgr_id) VALUES (seq_flight_id.NEXTVAL, 'dhaka','cox
bazar', to_date ('6-sep-22 11:00 a.m.','dd-mon-yy hh:mi a.m.'), to_date ('6-sep-22 12:30 a.m.','dd-mon-yy hh:mi a.m.'), 10000, 'Business',2);
INSERT INTO FLIGHT(flight_id, departure,destination, departure_time, arrival_time, flight_cost, flight_class, mgr_id) VALUES (seq_flight_id.NEXTVAL,
'jessore','sylhet', to_date ('7-sep-22 11:00 a.m.','dd-mon-yy hh:mi a.m.'), to_date ('7-sep-22 12:30 a.m.','dd-mon-yy hh:mi a.m.'), 9500, 'ECONOMY',4);
INSERT INTO FLIGHT(flight_id, departure,destination, departure_time, arrival_time, flight_cost, flight_class, mgr_id) VALUES (seq_flight_id.NEXTVAL,
'rajshahi','dhaka', to_date('8-sep-22 12:00 a.m.','dd-mon-yy hh:mi a.m.'), to_date ('8-sep-22 12:30 a.m.','dd-mon-yy hh:mi a.m.'), 8000, 'Business',1);

select * from FLIGHT;
```

Results Explain Describe Saved SQL History

FLIGHT_ID	DEPARTURE	DESTINATION	DEPARTURE_TIME	ARRIVAL_TIME	FLIGHT_COST	FLIGHT_CLASS	MGR_ID
1	dhaka	cox bazar	05-AUG-22	05-AUG-22	7000	Economy	2
3	dhaka	chittagong	06-SEP-22	06-SEP-22	5000	Business	3
4	dhaka	cox bazar	06-SEP-22	06-SEP-22	10000	Business	2
5	jessore	sylhet	07-SEP-22	07-SEP-22	9500	ECONOMY	4
6	rajshahi	dhaka	08-SEP-22	08-SEP-22	8000	Business	1

5 rows returned in 0.00 seconds CSV Export

BOOKING Table:

Home > SQL > SQL Commands

Autocommit Display 10 Save Run

```
create sequence seq_booking_id increment by 1 start with 1 nocache nocycle;

drop table BOOKING;

create table BOOKING (booking_id number (10) primary key, customer_id number (10), flight_id number (10), foreign key(customer_id) references
CUSTOMER(customer_id), foreign key(flight_id) references FLIGHT (flight_id));

insert into BOOKING values (seq_booking_id.NEXTVAL,1,3);
insert into BOOKING values (seq_booking_id.NEXTVAL,4,4);
insert into BOOKING values (seq_booking_id.NEXTVAL,3,6);
insert into BOOKING values (seq_booking_id.NEXTVAL,5,1);
insert into BOOKING values (seq_booking_id.NEXTVAL,2,5);


select * from BOOKING;
```

Results Explain Describe Saved SQL History

BOOKING_ID	CUSTOMER_ID	FLIGHT_ID
1	1	3
2	4	4
4	3	6
5	5	1
6	2	5

5 rows returned in 0.00 seconds CSV Export

ORDER_TICKET Table:

Home > SQL > SQL Commands

Autocommit Display 10 Save Run

```
create sequence seq_order_id increment by 1 start with 1 nocache nocycle;

drop table ORDER_TICKET;

create table ORDER_TICKET(order_id number (10) primary key, ticket_id number (10), flight_id number (10), foreign key(ticket_id) references TICKET(ticket_id),
foreign key(flight_id) references FLIGHT (flight_id));

insert into ORDER_TICKET values (seq_order_id.NEXTVAL,5,1);
insert into ORDER_TICKET values (seq_order_id.NEXTVAL,4,1);
insert into ORDER_TICKET values (seq_order_id.NEXTVAL,1,3);
insert into ORDER_TICKET values (seq_order_id.NEXTVAL,2,1);
insert into ORDER_TICKET values (seq_order_id.NEXTVAL,3,5);

select * from ORDER_TICKET;
```

Results Explain Describe Saved SQL History

ORDER_ID	TICKET_ID	FLIGHT_ID
2	5	1
3	4	1
5	1	3
7	2	1
8	3	5

5 rows returned in 0.00 seconds CSV Export

Query Writing:

Question:

1. Find customer name, flight cost, total tickets of a customer which was approved by mgr_id 3.
2. Find the available flights with lowest price.
3. Find the flight cost of a business class with destination to cox bazar.
4. Find the flight wise total booked tickets.
5. Find the name of the customer who booked the maximum number of flights.
6. Find customer name and departure time of a flight with destination to dhaka.
7. Find the destination of lowest cost business class flight from departure dhaka.
8. Find the manager's name who approved maximum flights.
9. Find all the customers who booked flight.
10. Find all flight details with maximum booked tickets.

Answer:

1. select c.customer_name, f.flight_cost, t.total_ticket from customer c, flight f, ticket t, order_ticket ot, booking b where c.customer_id=b.customer_id and b.flight_id=f.flight_id and t.ticket_id=ot.ticket_id and ot.flight_id=f.flight_id and f.mgr_id=3;

2. select * from flight where flight_cost=(select min(flight_cost) from flight);

3. select flight_cost from flight where flight_class='Business' and destination='cox bazar';

4. select f.flight_id, sum(t.total_ticket) from flight f, ticket t, order_ticket ot where t.ticket_id=ot.ticket_id and ot.flight_id=f.flight_id group by f.flight_id;

5. select customer_name from customer where customer_id in (select c.customer_id from customer c, flight f, booking b where c.customer_id=b.customer_id and b.flight_id=f.flight_id group by c.customer_id having count(c.customer_id) in (select max(count(c.customer_id)) from customer c, flight f, booking b where c.customer_id=b.customer_id and b.flight_id=f.flight_id group by c.customer_id));

6. select c.customer_name, f.departure_time from customer c, flight f, booking b where c.customer_id=b.customer_id and b.flight_id=f.flight_id and destination='cox bazar';

7. select destination from flight where flight_class='Business' and flight_cost in (select min(flight_cost) from flight);

8. select mgr_name from manager where mgr_id in (select m.mgr_id from manager m, flight f where m.mgr_id=f.mgr_id group by m.mgr_id having count(m.mgr_id) in (select max(count(m.mgr_id)) from manager m, flight f where m.mgr_id=f.mgr_id group by m.mgr_id));

9. select c.customer_name, c.customer_email from customer c, ticket t where c.customer_id=t.customer_id and ticket_status='booked';

10. select * from flight where flight_id in (select f.flight_id from flight f, ticket t, order_ticket ot where t.ticket_id=ot.ticket_id and ot.flight_id=f.flight_id and ticket_status='booked' group by f.flight_id having sum(t.total_ticket) in (select max(sum(t.total_ticket)) from flight f, ticket t, order_ticket ot where t.ticket_id=ot.ticket_id and ot.flight_id=f.flight_id and ticket_status='booked' group by f.flight_id));

User Interface for Login and Registration: