### Mit Katwala

## **NUID 1440383**

## INFO 6210 Database Management and Database Design, Section 6

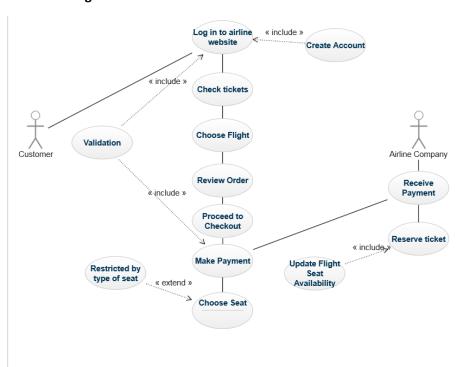
## **Final Project: Database for Airline Company**

# **Project Goal:**

The goal of the project is to build a database system for an airline company to manage its flight bookings, customers and schedules. It a system which is dependent on time and money as customers will be paying to book their seat, so a relational database system is essential.

To manage thousands of transactions per day, avoid overbooking of flights and provide more flexibility to the customers an online Airline Reservation System is required.

### **Use Case Diagram:**



#### **Users:**

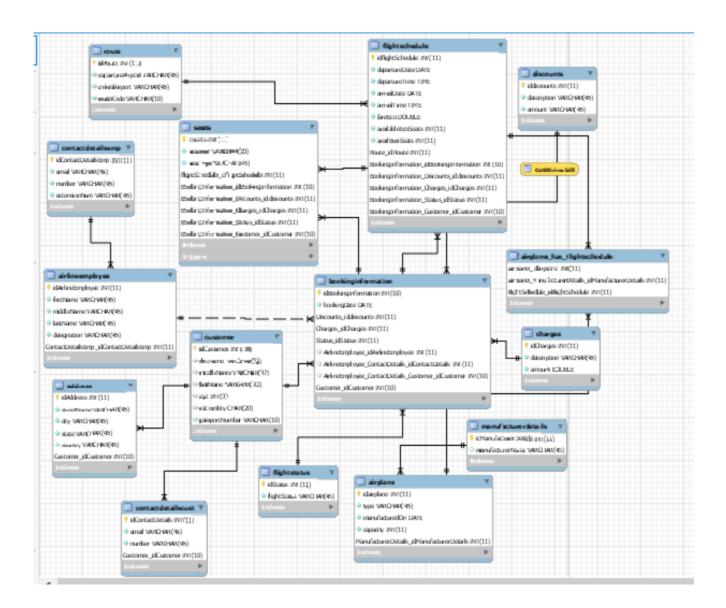
**Customer:** a customer will log into the airline website and book the seat according to his/her travel schedule.

**Airline Company Employee:** The seats need to be blocked while the user is in payment phase and reserved after payment has been received by the airline company. Sometimes booking

happens over phone so it is important to include the employees working for the airline company in the system

**Business Rules:** 

**ER Model:** 



## **Screenshots:**

## 1) TRIGGERS:

a) On INSERT INTO seats table the total available seat for business or economy class in flightSchedule table decrements by one

```
CREATE TRIGGER Seat_Insert

AFTER INSERT
ON airlinecompanyschema.seats
FOR EACH ROW

BEGIN
SET @newseatnum = NEW.flightSchedule_idflightSchedule;
IF NEW.seatType = 'E' THEN
UPDATE airlinecompanyschema.flightschedule SET availableEcoSeats =
availableEcoSeats - 1
WHERE flightSchedule.idflightSchedule = @newseatnum;
ELSE
UPDATE airlinecompanyschema.flightschedule SET availBusiSeats = availBusiSeats - 1
WHERE flightSchedule.idflightSchedule = @newseatnum;
END IF;
END;
$$
```

Table on which Event occurs: (seats)

	idseats	seatnum	seatType	flightSchedule_idflightSch	edule BookingInfo	rmation_idBookingInformation	BookingInforma
•	1	A31	В	1	1		1
	2	A40	E	1	1		1
	3	B10	В	2	2		2
	4	B10	В	2	2		2
	5	C40	E	1	1		1
5							;

Before event table on which action will be taken: (flightSchedule)

idflightSchedule	departureDate	departureTime	arrivalDate	arrivalTime	fareEco	availableEcoSeats	availBusiSeats
1	2018-12-12	06:30:00	2018-12-13	06:00:00	2000	118	19
2	2018-12-16	08:00:00	2018-12-16	16:45:00	800	90	8
3	2018-12-18	09:00:00	2018-12-19	06:00:00	1500	50	5
4	2018-12-27	05:00:00	2018-12-28	22:00:00	1000	45	50
5	2018-12-29	06:30:00	2018-12-31	19:00:00	1200	29	17
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# After event:

**INSERT INTO seats** 

VALUES (6,'F40','E',5,5,2,2,1,5);

idflightSchedule	departureDate	departureTime	arrivalDate	arrivalTime	fareEco	availableEcoSeats	availBusiSeats
1	2018-12-12	06:30:00	2018-12-13	06:00:00	2000	118	19
2	2018-12-16	08:00:00	2018-12-16	16:45:00	800	90	8
3	2018-12-18	09:00:00	2018-12-19	06:00:00	1500	50	5
4	2018-12-27	05:00:00	2018-12-28	22:00:00	1000	45	50
5	2018-12-29	06:30:00	2018-12-31	19:00:00	1200	28	17

b) ON Update to type of seats in the seats table, the corresponding available seats in flightSchedule will increment or decrement accordingly

```
DELIMITER $$
  CREATE TRIGGER Seat_Update
      AFTER UPDATE
      ON airlinecompanyschema.seats
      FOR EACH ROW
BEGIN
     SET @newseatnum = NEW.flightSchedule_idflightSchedule;
IF NEW.seatType = 'E' THEN
\Box
          UPDATE airlinecompanyschema.flightschedule
          SET availableEcoSeats = availableEcoSeats - 1,
                 availBusiSeats = availBusiSeats +1
          WHERE flightSchedule.idflightSchedule = @newseatnum;
      ELSE
          UPDATE airlinecompanyschema.flightschedule
          SET availableEcoSeats = availableEcoSeats + 1,
                 availBusiSeats = availBusiSeats -
          WHERE flightSchedule.idflightSchedule = @newseatnum;
      END IF;
```

Before Event: (flightSchedule)

idflightSchedule	departureDate	departureTime	arrivalDate	arrivalTime	fareEco	availableEcoSeats	availBusiSeats
1	2018-12-12	06:30:00	2018-12-13	06:00:00	2000	118	19
2	2018-12-16	08:00:00	2018-12-16	16:45:00	800	90	8
3	2018-12-18	09:00:00	2018-12-19	06:00:00	1500	50	5
4	2018-12-27	05:00:00	2018-12-28	22:00:00	1000	45	50
5	2018-12-29	06:30:00	2018-12-31	19:00:00	1200	28	17

After Event:

UPDATE seats
SET seatType = "B"
WHERE idseats = 6;

idflightSchedule	departureDate	departureTime	arrivalDate	arrivalTime	fareEco	availableEcoSeats	availBusiSeats
1	2018-12-12	06:30:00	2018-12-13	06:00:00	2000	119	18
2	2018-12-16	08:00:00	2018-12-16	16:45:00	800	90	8
3	2018-12-18	09:00:00	2018-12-19	06:00:00	1500	50	5
4	2018-12-27	05:00:00	2018-12-28	22:00:00	1000	45	50
5	2018-12-29	06:30:00	2018-12-31	19:00:00	1200	29	16

Seats table after trigger event:

idseats	seatnum	seatType	flightSchedule_idflightSchedule	${\tt BookingInformation\_idBookingInformation}$	BookingInformatio
1	A31	В	1	1	1
2	A40	E	1	1	1
3	B10	В	2	2	2
4	B10	В	2	2	2
5	C40	В	1	1	1
6	F40	В	5	5	2
	-	-	Partition	THE PARTY OF THE P	FFFFFF

## 2) USER DEFINED FUNCTIONS:

a) business\_class\_cost(): This function can be used to calculate the cost of a seat of type business class by multiplying a number with the price of economy class ticket. This number and flight id is given as input to the function

```
DELIMITER $
CREATE FUNCTION business_class_cost(flightid int,multiplier double)
RETURNS DOUBLE
DETERMINISTIC

BEGIN

DECLARE businessclassprize double;
SELECT (fareEco*multiplier) INTO businessclassprize FROM flightschedule
WHERE idflightSchedule = flightid;
RETURN businessclassprize;
END;
$
```

Output: Calculating the cost for the business class ticket for flightId = 5 by multiplying with 4

b) flights\_on\_schedule(): It calculates the number of flights which are currently scheduled by checking the status flag on every row in flightschedule table

```
DELIMITER $
          CREATE FUNCTION flights_on_schedule()
   71 •
   72
          RETURNS INT
   73
          DETERMINISTIC
   74
        BEGIN
   75
              DECLARE scheduledflights int;
              SELECT COUNT(idflightSchedule) INTO scheduledflights FROM flightschedule
   76
   77
              WHERE BookingInformation Status idStatus = 1;
   78
              RETURN scheduledflights;
         -END;
   79
   80
   81
   82 •
          SELECT flights_on_schedule() AS TotalFlightsScheduled
   83
          FROM flightschedule WHERE idflightSchedule = 1;
Result Grid Filter Rows:
                                         Export: Wrap Cell Content: IA
   TotalFlightsScheduled
 5
```

3) VIEW: I am using a view to generate a customer bill for customer after considering any available discounts or extra charges

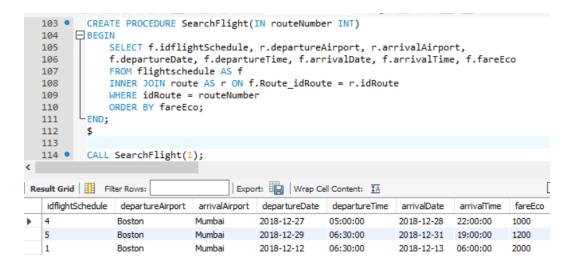
Output: Generated Bill for every customer in the database

	firstName	idflightSchedule	departureAirport	arrivalAirport	fareEco	discountedPercent	chargedAmount	TotalBill
•	Mit	1	Boston	Mumbai	2000	0	0	2000
	Krina	4	Boston	Mumbai	1000	10	120	1020
	Ajay	2	Mumbai	NewYork	800	5	30	790
	Ronak	3	Pune	London	1500	5	0	1425
	Xi	5	Boston	Mumbai	1200	5	100	1240

## 4) STORED PROCEDURE:

I have implemented a stored procedure for searching flights as searching for the best flight is a common application for most airline companies and that is what customers are looking

for. Here the function takes an input as a route number which contains the departure and arrival locations and returns all the flights with the same location with lowest fare first



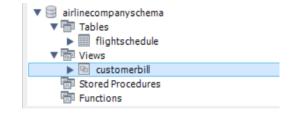
### 5) USER PRIVILEGES:

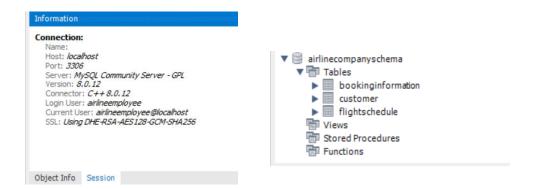
```
CREATE USER 'customer1'@localhost identified by 'customer1';
GRANT SELECT ON CustomerBill to 'customer1'@localhost;
GRANT SELECT ON flightschedule to 'customer1'@localhost;

CREATE USER 'airlineemployee'@localhost identified by 'airlineemployee';
GRANT SELECT ON customer to 'airlineemployee'@localhost;
GRANT SELECT ON flightschedule to 'airlineemployee'@localhost;
GRANT SELECT ON bookinginformation to 'airlineemployee'@localhost;
```

Output: Here Customer has been given a privilege to access the view to generate final bill and flight schedule table. The airline employees have access to customer data, flight schedule and booking information.



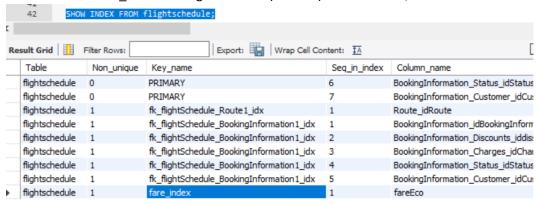




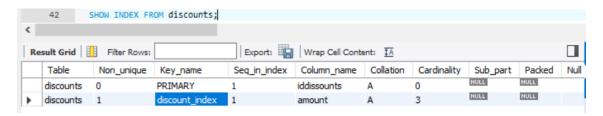
### 6) INDEX

I have added an index to fareEco column in flightschedule table, amount column in discount and charges table as these columns are used frequently for calculations and analysis.

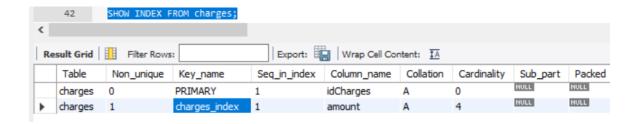
a) CREATE INDEX fare\_index ON flightschedule(fareEco) USING BTREE;



b) CREATE INDEX discount\_index ON discounts(amount) USING BTREE;



c) CREATE INDEX charges\_index ON charges(amount) USING BTREE;



## 7) TRANSACTIONS

a) READ WRITE to insert new seats in seat table as per booking

```
SET TRANSACTION READ WRITE;

BEGIN;
INSERT INTO seats
VALUES (7,'P10','E',5,5,2,2,1,5);
SELECT * FROM seats;
COMMIT;
```

idsea	ats seatnum	seatType	flightSchedule_idflightSchedule	BookingInformation_idBookingInformation	BookingInformation
1	A31	В	1	1	1
2	A40	E	1	1	1
3	B10	В	2	2	2
4	B10	В	2	2	2
5	C40	В	1	1	1
6	F40	В	5	5	2
7	P10	E	5	5	2

b) READ ONLY access as user should not be able to edit flight schedule information

```
SET TRANSACTION READ ONLY;

BEGIN;

SELECT * FROM flightschedule;

COMMIT;
```

	idflightSchedule	departureDate	departureTime	arrivalDate	arrivalTime	fareEco	availableEcoSeats	availBusiSeats
•	1	2018-12-12	06:30:00	2018-12-13	06:00:00	2000	119	18
	2	2018-12-16	08:00:00	2018-12-16	16:45:00	800	90	8
	3	2018-12-18	09:00:00	2018-12-19	06:00:00	1500	50	5
	4	2018-12-27	05:00:00	2018-12-28	22:00:00	1000	45	50
	5	2018-12-29	06:30:00	2018-12-31	19:00:00	1200	28	16

### **APPENDIX**

```
-- MySQL dump 10.13 Distrib 8.0.12, for Win64 (x86 64)
-- Host: localhost Database: airlinecompanyschema
-- Server version
                                           8.0.12
/*!40101 SET @OLD CHARACTER SET CLIENT=@@CHARACTER SET CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD COLLATION CONNECTION=@@COLLATION CONNECTION */;
SET NAMES utf8;
/*!40103 SET @OLD_TIME_ZONE=@@TIME_ZONE */;
/*!40103 SET TIME ZONE='+00:00' */;
/*!40014 SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0 */;
/*!40014 SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS,
FOREIGN KEY CHECKS=0 */;
/*!40101 SET @OLD_SQL_MODE=@@SQL_MODE,
SQL MODE='NO AUTO VALUE ON ZERO' */;
/*!40111 SET @OLD SQL NOTES=@@SQL NOTES, SQL NOTES=0 */;
-- Table structure for table `address`
DROP TABLE IF EXISTS 'address';
/*!40101 SET @saved cs client = @@character set client */;
SET character set client = utf8mb4;
CREATE TABLE `address` (
 'idAddress' int(11) NOT NULL,
 `streetName` varchar(45) NOT NULL,
 `city` varchar(45) NOT NULL,
 'state' varchar(45) NOT NULL,
 `country` varchar(45) NOT NULL,
 `Customer idCustomer` int(10) unsigned NOT NULL,
 PRIMARY KEY ('idAddress', 'Customer idCustomer'),
 KEY `fk_Address_Customer1_idx` (`Customer_idCustomer`),
 CONSTRAINT `fk_Address_Customer1` FOREIGN KEY (`Customer_idCustomer') REFERENCES
`customer` (`idcustomer`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;
```

```
-- Dumping data for table 'address'
LOCK TABLES 'address' WRITE;
/*!40000 ALTER TABLE `address` DISABLE KEYS */;
INSERT INTO `address` VALUES (1,'1171 boylston st','Boston','MA','USA',1),(2,'New Link
Road', 'Mumbai', 'MH', 'India', 2), (3, 'S V Road', 'Mumbai', 'MH', 'Indian', 3), (4, 'Park
Drive', 'Boston', 'MA', 'USA', 4), (5, 'Mission Main', 'Boston', 'MA', 'USA', 5);
/*!40000 ALTER TABLE `address` ENABLE KEYS */;
UNLOCK TABLES;
-- Table structure for table 'airlineemployee'
DROP TABLE IF EXISTS 'airlineemployee';
/*!40101 SET @saved cs client = @@character set client */;
SET character set client = utf8mb4;
CREATE TABLE 'airlineemployee' (
 'idAirlineEmployee' int(11) NOT NULL,
 `firstName` varchar(45) NOT NULL,
 'middleName' varchar(45) NOT NULL,
 'lastName' varchar(45) NOT NULL,
 'designation' varchar(45) NOT NULL,
 `ContactDetailsEmp_idContactDetailsEmp` int(11) NOT NULL,
 PRIMARY KEY ('idAirlineEmployee', 'ContactDetailsEmp'),
 KEY `fk_AirlineEmployee_ContactDetailsEmp1_idx`
('ContactDetailsEmp idContactDetailsEmp'),
 CONSTRAINT `fk_AirlineEmployee_ContactDetailsEmp1` FOREIGN KEY
('ContactDetailsEmp idContactDetailsEmp') REFERENCES 'contactdetailsemp'
('idcontactdetailsemp')
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character set client = @saved cs client */;
-- Dumping data for table `airlineemployee`
LOCK TABLES 'airlineemployee' WRITE;
/*!40000 ALTER TABLE `airlineemployee` DISABLE KEYS */;
INSERT INTO 'airlineemployee' VALUES
(1,'Max','Harry','Potter','Agent',1),(2,'Peter','Robert','comey','Agent',2),(3,'Sam','Ravi','Weasl
ey','Agent',3);
```

```
/*!40000 ALTER TABLE `airlineemployee` ENABLE KEYS */;
UNLOCK TABLES;
-- Table structure for table `airplane`
DROP TABLE IF EXISTS 'airplane';
/*!40101 SET @saved cs client = @@character set client */;
SET character_set_client = utf8mb4;
CREATE TABLE `airplane` (
 'idairplane' int(11) NOT NULL,
 'type' varchar(45) NOT NULL,
 'manufacturedOn' date NOT NULL,
 `capacity` int(11) NOT NULL,
 `ManufacturerDetails_idManufacturerDetails` int(11) NOT NULL,
 PRIMARY KEY ('idairplane', 'ManufacturerDetails idManufacturerDetails'),
 KEY 'fk airplane ManufacturerDetails1 idx'
(`ManufacturerDetails_idManufacturerDetails`),
 CONSTRAINT `fk_airplane_ManufacturerDetails1` FOREIGN KEY
(`ManufacturerDetails idManufacturerDetails`) REFERENCES `manufacturerdetails`
('idmanufacturerdetails')
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;
-- Dumping data for table 'airplane'
LOCK TABLES 'airplane' WRITE;
/*!40000 ALTER TABLE `airplane` DISABLE KEYS */;
INSERT INTO 'airplane' VALUES (1,'Aribus313','2008-11-11',140,1),(2,'Boeing 777','2012-12-
03',130,2),(3,'Airbus 311','2017-01-12',150,3);
/*!40000 ALTER TABLE `airplane` ENABLE KEYS */;
UNLOCK TABLES;
-- Table structure for table 'airplane_has_flightschedule'
DROP TABLE IF EXISTS 'airplane_has_flightschedule';
/*!40101 SET @saved_cs_client = @@character_set_client */;
SET character set client = utf8mb4;
CREATE TABLE 'airplane_has_flightschedule' (
```

```
`airplane idairplane` int(11) NOT NULL,
 `airplane ManufacturerDetails idManufacturerDetails` int(11) NOT NULL,
 `flightSchedule idflightSchedule` int(11) NOT NULL,
 PRIMARY KEY
(`airplane_idairplane`,`airplane_ManufacturerDetails_idManufacturerDetails`,`flightSchedul
e idflightSchedule`),
 KEY 'fk airplane has flightSchedule flightSchedule1 idx'
(`flightSchedule_idflightSchedule`),
 KEY 'fk airplane has flightSchedule airplane1 idx'
(`airplane_idairplane`,`airplane_ManufacturerDetails_idManufacturerDetails`),
 CONSTRAINT `fk_airplane_has_flightSchedule_airplane1` FOREIGN KEY
('airplane idairplane', 'airplane ManufacturerDetails idManufacturerDetails') REFERENCES
`airplane` (`idairplane`, `manufacturerdetails_idmanufacturerdetails`),
 CONSTRAINT `fk_airplane_has_flightSchedule_flightSchedule1` FOREIGN KEY
('flightSchedule idflightSchedule') REFERENCES 'flightschedule' ('idflightSchedule')
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;
-- Dumping data for table `airplane_has_flightschedule`
LOCK TABLES 'airplane has flightschedule' WRITE;
/*!40000 ALTER TABLE `airplane has flightschedule` DISABLE KEYS */;
/*!40000 ALTER TABLE `airplane has flightschedule` ENABLE KEYS */;
UNLOCK TABLES;
-- Table structure for table 'bookinginformation'
DROP TABLE IF EXISTS 'bookinginformation';
/*!40101 SET @saved cs client = @@character set client */;
SET character set client = utf8mb4;
CREATE TABLE 'bookinginformation' (
 `idBookingInformation` int(10) unsigned NOT NULL AUTO_INCREMENT,
 'bookingDate' date NOT NULL,
 `Discounts_iddissounts` int(11) NOT NULL,
 `Charges idCharges` int(11) NOT NULL,
 `Status idStatus` int(11) NOT NULL,
 `AirlineEmployee_idAirlineEmployee` int(11) DEFAULT NULL,
 `AirlineEmployee_ContactDetails_idContactDetails` int(11) DEFAULT NULL,
 `AirlineEmployee_ContactDetails_Customer_idCustomer` int(10) unsigned DEFAULT NULL,
 `Customer_idCustomer` int(10) unsigned NOT NULL,
```

```
PRIMARY KEY
('idBookingInformation', 'Discounts' iddissounts', 'Charges idCharges', 'Status idStatus', 'Cus
tomer idCustomer`),
 KEY 'fk BookingInformation Discounts1 idx' ('Discounts iddissounts'),
 KEY `fk_BookingInformation_Charges1_idx` (`Charges_idCharges`),
 KEY 'fk BookingInformation Status1 idx' ('Status idStatus'),
 KEY 'fk BookingInformation AirlineEmployee1 idx'
(`AirlineEmployee_idAirlineEmployee`,`AirlineEmployee_ContactDetails_idContactDetails`,`
AirlineEmployee ContactDetails Customer idCustomer`),
 KEY `fk_BookingInformation_Customer1_idx` (`Customer_idCustomer`),
 CONSTRAINT `fk BookingInformation AirlineEmployee1` FOREIGN KEY
(`AirlineEmployee idAirlineEmployee`), REFERENCES 'airlineemployee` ('idairlineemployee'),
 CONSTRAINT `fk_BookingInformation_Charges1` FOREIGN KEY (`Charges_idCharges`)
REFERENCES `charges` (`idcharges`),
 CONSTRAINT 'fk BookingInformation Customer1' FOREIGN KEY ('Customer idCustomer')
REFERENCES 'customer' ('idcustomer'),
 CONSTRAINT 'fk BookingInformation Discounts1' FOREIGN KEY ('Discounts iddissounts')
REFERENCES 'discounts' ('iddissounts'),
 CONSTRAINT 'fk BookingInformation Status1' FOREIGN KEY ('Status idStatus')
REFERENCES 'flightstatus' ('idstatus')
) ENGINE=InnoDB AUTO INCREMENT=6 DEFAULT CHARSET=utf8;
/*!40101 SET character set client = @saved cs client */;
-- Dumping data for table 'bookinginformation'
LOCK TABLES 'bookinginformation' WRITE;
/*!40000 ALTER TABLE `bookinginformation` DISABLE KEYS */;
INSERT INTO `bookinginformation` VALUES (1,'2018-11-11',1,1,1,1,1,1,1,1),(2,'2018-05-
11',2,3,1,2,2,2,2),(3,'2018-03-12',2,1,1,3,3,3,3),(4,'2018-12-13',3,4,1,1,1,1,4),(5,'2018-12-
13',2,2,1,2,2,2,5);
/*!40000 ALTER TABLE `bookinginformation` ENABLE KEYS */;
UNLOCK TABLES;
-- Table structure for table `charges`
DROP TABLE IF EXISTS 'charges';
/*!40101 SET @saved_cs_client = @@character_set_client */;
SET character_set_client = utf8mb4;
CREATE TABLE 'charges' (
 `idCharges` int(11) NOT NULL,
```

```
`description` varchar(45) NOT NULL,
 'amount' double NOT NULL,
 PRIMARY KEY ('idCharges'),
 KEY `charges_index` (`amount`) USING BTREE
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character set client = @saved cs client */;
-- Dumping data for table `charges`
LOCK TABLES 'charges' WRITE;
/*!40000 ALTER TABLE `charges` DISABLE KEYS */;
INSERT INTO `charges` VALUES (1,'No Charge',0),(2,'Meal Option',100),(3,'Overweight
Luggage',30),(4,'Extra bags',120);
/*!40000 ALTER TABLE `charges` ENABLE KEYS */;
UNLOCK TABLES;
-- Table structure for table `contactdetailscust`
DROP TABLE IF EXISTS 'contactdetailscust';
/*!40101 SET @saved_cs_client = @@character_set_client */;
SET character set client = utf8mb4;
CREATE TABLE `contactdetailscust` (
 'idContactDetails' int(11) NOT NULL,
 `email` varchar(45) NOT NULL,
 'number' varchar(45) CHARACTER SET utf8 COLLATE utf8 bin NOT NULL,
 'Customer idCustomer' int(10) unsigned NOT NULL,
 PRIMARY KEY ('idContactDetails', 'Customer idCustomer'),
 KEY `fk_ContactDetailsCust_Customer1_idx` (`Customer_idCustomer`),
 CONSTRAINT `fk ContactDetailsCust Customer1` FOREIGN KEY (`Customer idCustomer`)
REFERENCES 'customer' ('idcustomer')
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;
-- Dumping data for table `contactdetailscust`
LOCK TABLES 'contactdetailscust' WRITE:
/*!40000 ALTER TABLE `contactdetailscust` DISABLE KEYS */;
```

```
INSERT INTO `contactdetailscust` VALUES
(1, 'mit@gmail.com', '9834782938', 1), (2, 'ajay@gmail.com', '9837458372', 2), (3, 'ronak@hotma
il.com','9837458291',3),(4,'krina@yahoo.com','8737465245',4),(5,'xi@gmail.com','98374652
/*!40000 ALTER TABLE `contactdetailscust` ENABLE KEYS */;
UNLOCK TABLES;
-- Table structure for table `contactdetailsemp`
DROP TABLE IF EXISTS 'contactdetailsemp';
/*!40101 SET @saved_cs_client = @@character_set_client */;
SET character_set_client = utf8mb4;
CREATE TABLE `contactdetailsemp` (
 'idContactDetailsEmp' int(11) NOT NULL,
 'email' varchar(45) NOT NULL,
 'number' varchar(45) NOT NULL,
 `extensionNum` varchar(45) NOT NULL,
 PRIMARY KEY (`idContactDetailsEmp`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;
-- Dumping data for table `contactdetailsemp`
LOCK TABLES `contactdetailsemp` WRITE;
/*!40000 ALTER TABLE `contactdetailsemp` DISABLE KEYS */;
INSERT INTO 'contactdetailsemp' VALUES
(1, 'max@gmail.com', '9837645276', '098'), (2, 'peter@hotmail.com', '8273652745', '001'), (3, 'sa
m@hotmail.com','9847652364','337');
/*!40000 ALTER TABLE `contactdetailsemp` ENABLE KEYS */;
UNLOCK TABLES;
-- Table structure for table `customer`
DROP TABLE IF EXISTS 'customer';
/*!40101 SET @saved_cs_client = @@character_set_client */;
SET character_set_client = utf8mb4;
CREATE TABLE 'customer' (
 'idCustomer' int(10) unsigned NOT NULL AUTO_INCREMENT,
```

```
`firstName` varchar(32) NOT NULL,
 'middleName' varchar(32) DEFAULT NULL,
 `lastName` varchar(32) DEFAULT NULL,
 'age' int(3) DEFAULT NULL,
 'nationality' char(20) DEFAULT NULL,
 `passportNumber` varchar(10) DEFAULT NULL,
 PRIMARY KEY ('idCustomer')
) ENGINE=InnoDB AUTO_INCREMENT=6 DEFAULT CHARSET=utf8;
/*!40101 SET character set client = @saved cs client */;
-- Dumping data for table `customer`
LOCK TABLES 'customer' WRITE;
/*!40000 ALTER TABLE `customer` DISABLE KEYS */;
INSERT INTO 'customer' VALUES
(1, 'Mit', 'Dev', 'Katwala', 23, 'Indian', 'M908374652'), (2, 'Ajay', 'Mohan', 'Das', 24, 'Indian', 'M98475
9274'),(3,'Ronak','S','Parkhiya',25,'Indian','M918438180'),(4,'Krina','D','Mehta',24,'Indian','M
983467581'),(5,'Xi','M','Chang',19,'Chinese','C983492042');
/*!40000 ALTER TABLE `customer` ENABLE KEYS */;
UNLOCK TABLES;
-- Temporary view structure for view `customerbill`
DROP TABLE IF EXISTS 'customerbill';
/*!50001 DROP VIEW IF EXISTS `customerbill`*/;
SET @saved_cs_client = @@character_set_client;
SET character set client = utf8mb4;
/*!50001 CREATE VIEW `customerbill` AS SELECT
1 AS `firstName`,
1 AS 'idflightSchedule',
1 AS 'departureAirport',
1 AS `arrivalAirport`,
1 AS `fareEco`,
1 AS 'discountedPercent',
1 AS `chargedAmount`,
1 AS `TotalBill`*/;
SET character_set_client = @saved_cs_client;
-- Table structure for table 'discounts'
```

```
DROP TABLE IF EXISTS 'discounts';
/*!40101 SET @saved_cs_client = @@character_set_client */;
SET character_set_client = utf8mb4;
CREATE TABLE 'discounts' (
 'iddissounts' int(11) NOT NULL,
 'description' varchar(45) NOT NULL,
 `amount` varchar(45) NOT NULL,
 PRIMARY KEY ('iddissounts'),
 KEY 'discount_index' ('amount') USING BTREE
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;
-- Dumping data for table 'discounts'
LOCK TABLES 'discounts' WRITE;
/*!40000 ALTER TABLE `discounts` DISABLE KEYS */;
INSERT INTO 'discounts' VALUES (1,'No Discount','0'),(2,'Festivaltime','5'),(3,'Infant less than
18 years old','10');
/*!40000 ALTER TABLE `discounts` ENABLE KEYS */;
UNLOCK TABLES;
-- Table structure for table `flightschedule`
DROP TABLE IF EXISTS 'flightschedule';
/*!40101 SET @saved cs client = @@character set client */;
SET character_set_client = utf8mb4;
CREATE TABLE 'flightschedule' (
 'idflightSchedule' int(11) NOT NULL,
 'departureDate' date NOT NULL,
 `departureTime` time NOT NULL,
 'arrivalDate' date NOT NULL,
 `arrivalTime` time NOT NULL,
 `fareEco` double NOT NULL,
 `availableEcoSeats` int(11) NOT NULL,
 `availBusiSeats` int(11) NOT NULL,
 `Route_idRoute` int(11) NOT NULL,
 `BookingInformation idBookingInformation` int(10) unsigned NOT NULL,
```

`BookingInformation\_Discounts\_iddissounts` int(11) NOT NULL,

```
`BookingInformation Charges idCharges` int(11) NOT NULL,
 'BookingInformation Status idStatus' int(11) NOT NULL,
 `BookingInformation Customer idCustomer` int(10) unsigned NOT NULL,
 PRIMARY KEY
('idflightSchedule', 'Route_idRoute', 'BookingInformation_idBookingInformation', 'BookingInf
ormation Discounts iddissounts', 'BookingInformation Charges idCharges', 'BookingInform
ation Status idStatus', 'BookingInformation Customer idCustomer'),
 KEY `fk_flightSchedule_Route1_idx` (`Route_idRoute`),
 KEY 'fk flightSchedule BookingInformation1 idx'
(`BookingInformation idBookingInformation`,`BookingInformation Discounts iddissounts`,`
BookingInformation_Charges_idCharges`,`BookingInformation_Status_idStatus`,`BookingInf
ormation Customer idCustomer'),
 KEY 'fare index' ('fareEco') USING BTREE,
 CONSTRAINT `fk_flightSchedule_BookingInformation1` FOREIGN KEY
(`BookingInformation idBookingInformation`, `BookingInformation Discounts iddissounts`,
`BookingInformation_Charges_idCharges`, `BookingInformation_Status_idStatus`,
`BookingInformation Customer idCustomer') REFERENCES 'bookinginformation'
('idbookinginformation', 'discounts iddissounts', 'charges idcharges', 'status idstatus',
`customer idcustomer`),
 CONSTRAINT `fk_flightSchedule_Route1` FOREIGN KEY (`Route_idRoute`) REFERENCES
`route` (`idroute`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character set client = @saved cs client */;
-- Dumping data for table 'flightschedule'
LOCK TABLES 'flightschedule' WRITE;
/*!40000 ALTER TABLE `flightschedule` DISABLE KEYS */;
INSERT INTO `flightschedule` VALUES (1,'2018-12-12','06:30:00','2018-12-
13','06:00:00',2000,119,18,1,1,1,1,1,1),(2,'2018-12-16','08:00:00','2018-12-
16','16:45:00',800,90,8,2,2,2,3,1,2),(3,'2018-12-18','09:00:00','2018-12-
19','06:00:00',1500,50,5,3,3,2,1,1,3),(4,'2018-12-27','05:00:00','2018-12-
28','22:00:00',1000,45,50,1,4,3,4,1,4),(5,'2018-12-29','06:30:00','2018-12-
31','19:00:00',1200,29,16,1,5,2,2,1,5);
/*!40000 ALTER TABLE `flightschedule` ENABLE KEYS */;
UNLOCK TABLES;
-- Table structure for table `flightstatus`
DROP TABLE IF EXISTS 'flightstatus';
```

```
/*!40101 SET @saved_cs_client = @@character_set_client */;
SET character_set_client = utf8mb4;
CREATE TABLE 'flightstatus' (
 'idStatus' int(11) NOT NULL,
 `flightStatus` varchar(45) NOT NULL,
 PRIMARY KEY ('idStatus')
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;
-- Dumping data for table `flightstatus`
LOCK TABLES 'flightstatus' WRITE;
/*!40000 ALTER TABLE `flightstatus` DISABLE KEYS */;
INSERT INTO `flightstatus` VALUES (1, 'Schedule'), (2, 'Cancelled');
/*!40000 ALTER TABLE `flightstatus` ENABLE KEYS */;
UNLOCK TABLES;
-- Table structure for table `manufacturerdetails`
DROP TABLE IF EXISTS 'manufacturerdetails';
/*!40101 SET @saved cs client = @@character set client */;
SET character_set_client = utf8mb4;
CREATE TABLE 'manufacturerdetails' (
 `idManufacturerDetails` int(11) NOT NULL,
 'manufacturerName' varchar(45) DEFAULT NULL,
 PRIMARY KEY ('idManufacturerDetails')
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;
-- Dumping data for table 'manufacturerdetails'
LOCK TABLES 'manufacturerdetails' WRITE;
/*!40000 ALTER TABLE `manufacturerdetails` DISABLE KEYS */;
INSERT INTO `manufacturerdetails` VALUES (1, 'Raytheon'), (2, 'Safran'), (3, 'Leonardo');
/*!40000 ALTER TABLE `manufacturerdetails` ENABLE KEYS */;
UNLOCK TABLES;
```

```
-- Table structure for table `route`
DROP TABLE IF EXISTS 'route';
/*!40101 SET @saved_cs_client = @@character_set_client */;
SET character set client = utf8mb4;
CREATE TABLE 'route' (
 'idRoute' int(11) NOT NULL,
 `departureAirport` varchar(45) NOT NULL,
 `arrivalAirport` varchar(45) NOT NULL,
 `routeCode` varchar(10) NOT NULL,
 PRIMARY KEY ('idRoute')
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;
-- Dumping data for table `route`
LOCK TABLES 'route' WRITE;
/*!40000 ALTER TABLE `route` DISABLE KEYS */;
INSERT INTO 'route' VALUES
(1,'Boston','Mumbai','BOS123'),(2,'Mumbai','NewYork','MUM909'),(3,'Pune','London','MUM
889');
/*!40000 ALTER TABLE `route` ENABLE KEYS */;
UNLOCK TABLES;
-- Table structure for table 'seats'
DROP TABLE IF EXISTS 'seats';
/*!40101 SET @saved cs client = @@character set client */;
SET character set client = utf8mb4;
CREATE TABLE 'seats' (
 `idseats` int(11) NOT NULL,
 'seatnum' varchar(20) NOT NULL,
 `seatType` varchar(45) NOT NULL,
 `flightSchedule idflightSchedule` int(11) NOT NULL,
 `BookingInformation idBookingInformation` int(10) unsigned NOT NULL,
 `BookingInformation_Discounts_iddissounts` int(11) NOT NULL,
 `BookingInformation_Charges_idCharges` int(11) NOT NULL,
 `BookingInformation_Status_idStatus` int(11) NOT NULL,
 `BookingInformation_Customer_idCustomer` int(10) unsigned NOT NULL,
```

#### PRIMARY KEY

```
('idseats', 'flightSchedule idflightSchedule', 'BookingInformation idBookingInformation', 'Bo
okingInformation Discounts iddissounts', 'BookingInformation Charges idCharges', 'Bookin
gInformation Status idStatus', BookingInformation Customer idCustomer'),
 KEY `fk_seats_flightSchedule1_idx` (`flightSchedule_idflightSchedule`),
 KEY 'fk seats BookingInformation1 idx'
(`BookingInformation idBookingInformation`,`BookingInformation Discounts iddissounts`,`
BookingInformation_Charges_idCharges`,`BookingInformation_Status_idStatus`,`BookingInf
ormation Customer idCustomer'),
 CONSTRAINT `fk_seats_BookingInformation1` FOREIGN KEY
(`BookingInformation_idBookingInformation`, `BookingInformation_Discounts_iddissounts`,
`BookingInformation Charges idCharges`, `BookingInformation Status idStatus`,
`BookingInformation_Customer_idCustomer`) REFERENCES `bookinginformation`
('idbookinginformation', 'discounts_iddissounts', 'charges_idcharges', 'status_idstatus',
'customer idcustomer'),
 CONSTRAINT `fk_seats_flightSchedule1` FOREIGN KEY (`flightSchedule_idflightSchedule`)
REFERENCES 'flightschedule' ('idflightSchedule')
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character set client = @saved cs client */;
-- Dumping data for table 'seats'
LOCK TABLES 'seats' WRITE;
/*!40000 ALTER TABLE `seats` DISABLE KEYS */;
INSERT INTO 'seats' VALUES
(1,'A31','B',1,1,1,1,1,1),(2,'A40','E',1,1,1,1,1,1),(3,'B10','B',2,2,2,3,1,2),(4,'B10','B',2,2,2,3,1,2),
(5,'C40','B',1,1,1,1,1,1),(6,'F40','B',5,5,2,2,1,5);
/*!40000 ALTER TABLE `seats` ENABLE KEYS */;
UNLOCK TABLES;
/*!50003 SET @saved_cs_client = @@character_set_client */;
/*!50003 SET @saved cs results = @@character set results */;
/*!50003 SET @saved col connection = @@collation connection */;
/*!50003 SET character_set_client = utf8mb4 */;
/*!50003 SET character_set_results = utf8mb4 */;
/*!50003 SET collation connection = utf8mb4 0900 ai ci */;
/*!50003 SET @saved_sql_mode
                                  = @@sql_mode */;
/*!50003 SET sql mode
                             = 'STRICT TRANS TABLES, NO ENGINE SUBSTITUTION' */;
DELIMITER;;
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER
'Seat Insert' AFTER INSERT ON 'seats' FOR EACH ROW BEGIN
  SET @newseatnum = NEW.flightSchedule_idflightSchedule;
  IF NEW.seatType = 'E' THEN
```

```
UPDATE
```

```
airlinecompanyschema.flightschedule SET availableEcoSeats = availableEcoSeats - 1
                                                WHERE flightSchedule.idflightSchedule
= @newseatnum;
  ELSE
                                                UPDATE
airlinecompanyschema.flightschedule SET availBusiSeats = availBusiSeats - 1
                                                WHERE flightSchedule.idflightSchedule
= @newseatnum;
  END IF;
END */;;
DELIMITER;
/*!50003 SET sql_mode
                             = @saved_sql_mode */;
/*!50003 SET character_set_client = @saved_cs_client */;
/*!50003 SET character set results = @saved cs results */;
/*!50003 SET collation_connection = @saved_col_connection */;
/*!50003 SET @saved cs client = @@character set client */;
/*!50003 SET @saved cs results = @@character set results */;
/*!50003 SET @saved col connection = @@collation connection */;
/*!50003 SET character_set_client = utf8mb4 */;
/*!50003 SET character set results = utf8mb4 */;
/*!50003 SET collation_connection = utf8mb4_0900_ai_ci */;
/*!50003 SET @saved sql mode
                                  = @@sql mode */;
/*!50003 SET sql mode
                             = 'STRICT_TRANS_TABLES,NO_ENGINE_SUBSTITUTION' */;
DELIMITER;;
/*!50003 CREATE*/ /*!50017 DEFINER=`root`@`localhost`*/ /*!50003 TRIGGER
'Seat Update' AFTER UPDATE ON 'seats' FOR EACH ROW BEGIN
                                             SET @newseatnum =
NEW.flightSchedule idflightSchedule;
  IF NEW.seatType = 'E' THEN
    UPDATE airlinecompanyschema.flightschedule
    SET availableEcoSeats = availableEcoSeats - 1,
       availBusiSeats = availBusiSeats +1
                                                WHERE flightSchedule.idflightSchedule
= @newseatnum;
                                              ELSE
    UPDATE airlinecompanyschema.flightschedule
    SET availableEcoSeats = availableEcoSeats + 1,
                                                         availBusiSeats = availBusiSeats
- 1
                                                WHERE flightSchedule.idflightSchedule
= @newseatnum;
  END IF;
END */;;
```

```
DELIMITER:
/*!50003 SET sql mode
                       = @saved sql mode */;
/*!50003 SET character set client = @saved cs client */;
/*!50003 SET character set results = @saved cs results */;
/*!50003 SET collation_connection = @saved_col_connection */;
-- Dumping events for database 'airlinecompanyschema'
-- Dumping routines for database 'airlinecompanyschema'
/*!50003 DROP FUNCTION IF EXISTS 'business class cost' */;
/*!50003 SET @saved cs client = @@character set client */;
/*!50003 SET @saved cs results = @@character set results */;
/*!50003 SET @saved col connection = @@collation connection */;
/*!50003 SET character set client = utf8mb4 */;
/*!50003 SET character set results = utf8mb4 */;
/*!50003 SET collation connection = utf8mb4 0900 ai ci */;
/*!50003 SET @saved sql mode
                                 = @@sql mode */;
/*!50003 SET sql mode
                            = 'STRICT TRANS TABLES, NO ENGINE SUBSTITUTION' */;
DELIMITER:
CREATE DEFINER='root'@'localhost' FUNCTION 'business class cost'(flightid int,multiplier
double) RETURNS double
  DETERMINISTIC
BEGIN
                                             DECLARE businessclassprize double;
  SELECT (fareEco*multiplier) INTO businessclassprize FROM flightschedule
  WHERE idflightSchedule = flightid;
  RETURN businessclassprize;
END;;
DELIMITER;
/*!50003 SET sql mode
                            = @saved sql mode */;
/*!50003 SET character_set_client = @saved_cs_client */;
/*!50003 SET character set results = @saved cs results */;
/*!50003 SET collation connection = @saved col connection */;
/*!50003 DROP FUNCTION IF EXISTS `flights_on_schedule` */;
/*!50003 SET @saved cs client = @@character set client */;
/*!50003 SET @saved cs results = @@character set results */;
/*!50003 SET @saved col connection = @@collation connection */;
/*!50003 SET character set client = utf8mb4 */;
/*!50003 SET character set results = utf8mb4 */;
/*!50003 SET collation connection = utf8mb4 0900 ai ci */;
```

```
/*!50003 SET @saved sql mode
                                 = @@sql mode */;
/*!50003 SET sql mode
                            = 'STRICT_TRANS_TABLES,NO_ENGINE_SUBSTITUTION' */;
DELIMITER ;;
CREATE DEFINER='root'@'localhost' FUNCTION 'flights on schedule'() RETURNS int(11)
  DETERMINISTIC
BEGIN
                                             DECLARE scheduledflights int;
  SELECT COUNT(idflightSchedule) INTO scheduledflights FROM flightschedule
  WHERE BookingInformation_Status idStatus = 1;
  RETURN scheduledflights;
END;;
DELIMITER;
/*!50003 SET sql_mode
                            = @saved_sql_mode */;
/*!50003 SET character_set_client = @saved_cs_client */;
/*!50003 SET character set results = @saved cs results */;
/*!50003 SET collation_connection = @saved_col_connection */;
/*!50003 DROP PROCEDURE IF EXISTS `SearchFlight` */;
/*!50003 SET @saved cs client = @@character set client */;
/*!50003 SET @saved cs results = @@character set results */;
/*!50003 SET @saved col connection = @@collation connection */;
/*!50003 SET character set client = utf8mb4 */;
/*!50003 SET character set results = utf8mb4 */;
/*!50003 SET collation connection = utf8mb4 0900 ai ci */;
/*!50003 SET @saved_sql_mode
                                 = @@sql mode */;
                            = 'STRICT TRANS TABLES, NO ENGINE SUBSTITUTION' */;
/*!50003 SET sql mode
DELIMITER;;
CREATE DEFINER=`root`@`localhost` PROCEDURE `SearchFlight`(IN routeNumber INT)
BEGIN
                                             SELECT f.idflightSchedule,
r.departureAirport, r.arrivalAirport, f.departureDate, f.departureTime, f.arrivalDate,
f.arrivalTime, f.fareEco
  FROM flightschedule AS f
                                             INNER JOIN route AS r ON f.Route idRoute
= r.idRoute
  WHERE idRoute = routeNumber
  ORDER BY fareEco:
END;;
DELIMITER;
/*!50003 SET sql mode
                            = @saved sql mode */;
/*!50003 SET character set client = @saved cs client */;
/*!50003 SET character_set_results = @saved_cs_results */;
/*!50003 SET collation connection = @saved col connection */;
```

```
-- Final view structure for view `customerbill`
/*!50001 DROP VIEW IF EXISTS `customerbill`*/;
/*!50001 SET @saved_cs_client
                                  = @@character_set_client */;
/*!50001 SET @saved cs results
                                   = @@character set results */;
/*!50001 SET @saved col connection = @@collation connection */;
/*!50001 SET character_set_client = utf8mb4 */;
/*!50001 SET character set results = utf8mb4 */;
/*!50001 SET collation connection = utf8mb4 0900 ai ci */;
/*!50001 CREATE ALGORITHM=UNDEFINED */
/*!50013 DEFINER=`root`@`localhost` SQL SECURITY DEFINER */
/*!50001 VIEW `customerbill` AS select `customer`. `firstName` AS
`firstName`,`flightschedule`.`idflightSchedule` AS
`idflightSchedule`,`route`.`departureAirport` AS `departureAirport`,`route`.`arrivalAirport`
AS `arrivalAirport`, `flightschedule`. `fareEco` AS `fareEco`, `discounts`. `amount` AS
`discountedPercent`,`charges`.`amount` AS `chargedAmount`,((`flightschedule`.`fareEco` +
`charges`.`amount`) - ((`discounts`.`amount` / 100) * `flightschedule`.`fareEco`)) AS
`TotalBill` from (((((`bookinginformation` `b` join `flightschedule`
on(('b'.'idBookingInformation' =
`flightschedule`.`BookingInformation idBookingInformation`))) join `charges`
on(('b'.'Charges_idCharges' = 'charges'.'idCharges'))) join 'discounts'
on(('b'.'Discounts iddissounts' = 'discounts'.'iddissounts'))) join 'customer'
on(('customer'.'idCustomer' = 'b'.'Customer_idCustomer'))) join 'route'
on(('flightschedule'.'Route idRoute' = 'route'.'idRoute'))) */;
/*!50001 SET character_set_client = @saved_cs_client */;
/*!50001 SET character set results = @saved cs results */;
/*!50001 SET collation connection = @saved col connection */;
/*!40103 SET TIME ZONE=@OLD TIME ZONE */;
/*!40101 SET SQL MODE=@OLD SQL MODE */;
/*!40014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */;
/*!40014 SET UNIQUE CHECKS=@OLD UNIQUE CHECKS */;
/*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
/*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
/*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
/*!40111 SET SQL NOTES=@OLD SQL NOTES */;
```

-- Dump completed on 2018-12-13 5:07:31





finalBackup.sql

finalER.mwb