

# DBT ASSIGNMENT-1

NAME: ASHWIN KRISHNA P

SRN: PES1201801465

SEM:5 , SECTION: F

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## Creating the AIRDT Database:

```
CREATE DATABASE [AIRDT]
CONTAINMENT = NONE
ON PRIMARY
( NAME = N'AIRDT', FILENAME = N'E:\Temp1\AIRDT.mdf' , SIZE = 8192KB , FILEGROWTH = 65536KB )
LOG ON
( NAME = N'AIRDT_log', FILENAME = N'F:\Temp2\AIRDT_log.ldf' , SIZE = 8192KB , FILEGROWTH = 65536KB )
GO
```

Then I set appropriate configuration for the database. After that I created 2 different filegroups.

## Creating File Groups:

```
ALTER DATABASE [AIRDT] ADD FILEGROUP [FGROUP1]
GO
ALTER DATABASE [AIRDT] ADD FILEGROUP [FGROUP2]
GO
```

Here I am creating 2 filegroups on 2 different disks.

```
ALTER DATABASE [AIRDT] ADD FILE ( NAME = N'FILE1', FILENAME = N'E:\Data\FILE1.ndf' , SIZE = 8192KB , FILEGROWTH = 65536KB ) TO FILEGROUP [FGROUP1]
GO
ALTER DATABASE [AIRDT] ADD FILE ( NAME = N'FILE2', FILENAME = N'F:\Data\FILE2.ndf' , SIZE = 8192KB , FILEGROWTH = 65536KB ) TO FILEGROUP [FGROUP2]
GO
```

Now we can see available Filegroups:

```
SELECT name AS AvailableFilegroups
FROM sys.filegroups
WHERE type = 'FG'
```

	AvailableFilegroups
1	PRIMARY
2	FGROUP1
3	FGROUP2

Then I created CITY\_PARTITION table. This table is partitioned across 2 filegroups FGROUP1 and FGROUP2.

```
CREATE PARTITION FUNCTION CitycodeRangePF1 (NUMERIC(10))
AS RANGE LEFT FOR VALUES (200000) ;
GO
```

```
CREATE PARTITION SCHEME CitycodeRangePS1
AS PARTITION CitycodeRangePF1
TO (FGROUP1, FGROUP2) ;
GO
```

```
CREATE TABLE CITY_PARTITION
(CITYCODE NUMERIC(10) NOT NULL,
CNAME VARCHAR(15) NOT NULL,
STATE VARCHAR(15),
COUNTRY VARCHAR(30),
PRIMARY KEY(CITYCODE)) ON CitycodeRangePS1(CITYCODE);
GO
```

Here CitycodeRangePF1 is Partition Function, CitycodeRangePS1 is Partition Scheme, partition key is CITY\_CODE, and partition range is given as 200000. So all the CITY\_CODE values lesser than 200000 are stored in FGROUPO1 and all the CITY\_CODE values greater than 200000 are stored in FGROUPO2.

### Inserting some proper values into the CITY\_PARTITION table:

```
INSERT INTO CITY_PARTITION (CITYCODE,CNAME, STATE, COUNTRY) VALUES(100000,'Louisville','Kentucky','United States');
INSERT INTO CITY_PARTITION (CITYCODE,CNAME, STATE, COUNTRY) VALUES (581187,'Chandigarh','Chandigarh','India');
INSERT INTO CITY_PARTITION (CITYCODE,CNAME, STATE, COUNTRY) VALUES (190908,'Fort Worth','Texas','United States');
INSERT INTO CITY_PARTITION (CITYCODE,CNAME, STATE, COUNTRY) VALUES(487787,'Delhi','Delhi','India');
INSERT INTO CITY_PARTITION (CITYCODE,CNAME, STATE, COUNTRY) VALUES(230532,'Mumbai','Maharashtra','India');
INSERT INTO CITY_PARTITION (CITYCODE,CNAME, STATE, COUNTRY) VALUES(120190,'San Francisco','California','United States');
INSERT INTO CITY_PARTITION (CITYCODE,CNAME, STATE, COUNTRY) VALUES(121232,'Frankfurt','Hesse','Germany');
INSERT INTO CITY_PARTITION (CITYCODE,CNAME, STATE, COUNTRY) VALUES(121112,'Houston','Texas','United States');
INSERT INTO CITY_PARTITION (CITYCODE,CNAME, STATE, COUNTRY) VALUES(132222,'New York City','New York','United States');
INSERT INTO CITY_PARTITION (CITYCODE,CNAME, STATE, COUNTRY) VALUES(111211,'Tampa','Florida','United States');
```

### Inserting large number of records into CITY\_PARTITION table:

I used rand() function to generate 6-digit numeric values.

```
set nocount on

select @@TRANCOUNT

begin transaction T1

declare @i int,
        @n numeric(10),
        @c varchar(10)

set @i = 1
while @i <= 700000
begin

    select @n = RAND()*(999999-100000)+100000,
           @c = convert(varchar, @i)

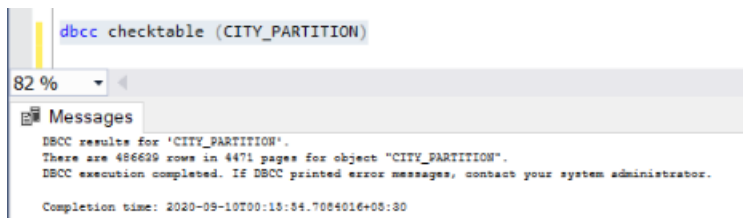
    insert into CITY_PARTITION (CITYCODE, CNAME, STATE, COUNTRY)
    select @n, @c + 'abc', @c+'xyz', @c+'pqr'

    set @i = @i + 1
end
go

commit transaction T1

set nocount off
```

In this way I have inserted more than 4 Lakh records into the table.



We can see that there are 486629 rows in 4471 pages.

INDEXDEFRAG removes unnecessary empty pages. So After doing

DBCC INDEXDEFRAG(AIRDT,CITY\_PARTITION)

```
DBCC results for 'CITY_PARTITION'.
There are 486629 rows in 3169 pages for object 'CITY_PARTITION'.
DBCC execution completed. If DBCC printed error messages, contact your system administrator.

Completion time: 2020-09-10T00:27:45.3651888+05:30
```

So now the number of pages got reduced from 4471 to 3169.

Now we can see how these 486629 rows has been partitioned across 2 filegroups:

```
SELECT
p.partition_number AS PartitionNumber,
f.name AS PartitionFilegroup,
p.rows AS NumberOfRows
FROM sys.partitions p
JOIN sys.destination_data_spaces dds ON p.partition_number = dds.destination_id
JOIN sys.filegroups f ON dds.data_space_id = f.data_space_id
WHERE OBJECT_NAME(OBJECT_ID) = 'CITY_PARTITION'
```

	PartitionNumber	PartitionFilegroup	NumberOfRows
1	1	FGROUP1	54110
2	2	FGROUP2	432529

Performing simple queries and analysing the execution plan:

```
select * from CITY_PARTITION where CNAME='Delhi';
```

Clustered Index Scan (Clustered)	
Scanning a clustered index, entirely or only a range.	
Physical Operation	Clustered Index Scan
Logical Operation	Clustered Index Scan
Actual Execution Mode	Row
Estimated Execution Mode	Row
Storage	RowStore
Number of Rows Read	486639
Actual Number of Rows for All Executions	1
Actual Number of Batches	0
Estimated I/O Cost	2.35218
Estimated Operator Cost	2.88779 (100%)
Estimated Subtree Cost	2.88779
Estimated CPU Cost	0.535617
Estimated Number of Executions	1
Number of Executions	1
Estimated Number of Rows Per Execution	1
Estimated Number of Rows to be Read	486639
Estimated Row Size	54 B
Actual Rebinds	0
Actual Rewinds	0
Partitioned	True
Actual Partition Count	2
Ordered	False
Node ID	0
Predicate	
[AIRD].[dbo].[CITY_PARTITION].[CNAME]=[@1]	
Object	
[AIRD].[dbo].[CITY_PARTITION].	
[PK_CITY_PAR_D50A2A65DD14A0D1]	
Output List	
[AIRD].[dbo].[CITY_PARTITION].CITYCODE, [AIRD].[dbo].	
[CITY_PARTITION].CNAME, [AIRD].[dbo].[CITY_PARTITION].STATE,	
[AIRD].[dbo].[CITY_PARTITION].COUNTRY	

We can see that, Actual number of rows for execution is just 1, but it has to read all 486639 rows.

Estimated I/O Cost: 2.35218

Estimated Subtree Cost: 2.88779

Creating a Non-Clustered index on CNAME of CITY\_PARTITION table:

```
create index city_name_idx on CITY_PARTITION(CNAME) ON FGROUP2;
```

I have created index on FGROUP2

So we can also have index for a table on a different filegroup.

After creating the index , Execution plan for the same above query:

Index Seek (NonClustered)	
Scan a particular range of rows from a nonclustered index.	
Physical Operation	Index Seek
Logical Operation	Index Seek
Actual Execution Mode	Row
Estimated Execution Mode	Row
Storage	RowStore
Number of Rows Read	1
Actual Number of Rows for All Executions	1
Actual Number of Batches	0
Estimated I/O Cost	0.003125
Estimated Operator Cost	0.0032831 (50%)
Estimated CPU Cost	0.0001581
Estimated Subtree Cost	0.0032831
Estimated Number of Executions	1
Number of Executions	1
Estimated Number of Rows Per Execution	1
Estimated Number of Rows to be Read	1
Estimated Row Size	28 B
Actual Rebinds	0
Actual Rewinds	0
Ordered	True
Node ID	2
<b>Object</b>	
[AIRDT].[dbo].[CITY_PARTITION].[city_name_idx]	
<b>Output List</b>	
[AIRDT].[dbo].[CITY_PARTITION].CITYCODE, [AIRDT].[dbo].[CITY_PARTITION].CNAME	
<b>Seek Predicates</b>	
Seek Keys[1]: Prefix: [AIRDT].[dbo].[CITY_PARTITION].CNAME = Scalar Operator('Delhi')	

Now it does index seek. So the I/O cost is significantly reduced.

Estimated I/O Cost: 0.003125

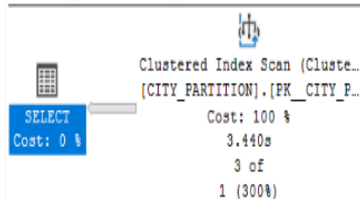
Estimated Subtree Cost: 0.0032831

So a Significant reduction in cost is observed!

Let us analyse one more query:

```
select * from CITY_PARTITION where COUNTRY='India';
```

Query 1: Query cost (relative to the batch): 100%  
 SELECT \* FROM [CITY\_PARTITION] WHERE [COUNTRY]=@1  
 Missing Index (Impact 99.8762): CREATE NONCLUSTERED INDEX [<Name of Missing Index, sysname,>] ON [dbo].[CITY\_PARTITION] ([COUNTRY])



We can notice the system suggesting to create a non-clustered index.

We can also notice that the I/O cost is High.

Estimated I/O Cost: 2.35218

Estimated Subtree Cost: 2.88779

Clustered Index Scan (Clustered)	
Scanning a clustered index, entirely or only a range.	
Physical Operation	Clustered Index Scan
Logical Operation	Clustered Index Scan
Actual Execution Mode	Row
Estimated Execution Mode	Row
Storage	RowStore
Number of Rows Read	486639
Actual Number of Rows for All Executions	3
Actual Number of Batches	0
Estimated I/O Cost	2.35218
Estimated Operator Cost	2.88779 (100%)
Estimated Subtree Cost	2.88779
Estimated CPU Cost	0.535617
Estimated Number of Executions	1
Number of Executions	1
Estimated Number of Rows Per Execution	1.00286
Estimated Number of Rows to be Read	486639
Estimated Row Size	46 B
Actual Rebinds	0
Actual Rewinds	0
Partitioned	True
Actual Partition Count	2
Ordered	False
Node ID	0
<b>Predicate</b>	
[AIRDT].[dbo].[CITY_PARTITION].[COUNTRY]='India'	
<b>Object</b>	
[AIRDT].[dbo].[CITY_PARTITION].	
[PK_CITY_PAR_D50A2A65DD14A0D1]	
<b>Output List</b>	
[AIRDT].[dbo].[CITY_PARTITION].CITYCODE, [AIRDT].[dbo].	
[CITY_PARTITION].CNAME, [AIRDT].[dbo].[CITY_PARTITION].STATE,	
[AIRDT].[dbo].[CITY_PARTITION].COUNTRY	

## Creating a Non-clustered index:

```
create index country_name_idx on CITY_PARTITION(COUNTRY) ON FGROUP2;
```

Execution plan after creating the index:

Index Seek (NonClustered)	
Scan a particular range of rows from a nonclustered index.	
Physical Operation	Index Seek
Logical Operation	Index Seek
Actual Execution Mode	Row
Estimated Execution Mode	Row
Storage	RowStore
Number of Rows Read	3
Actual Number of Rows for All Executions	3
Actual Number of Batches	0
Estimated I/O Cost	0.003125
Estimated Operator Cost	0.0032831 (50%)
Estimated CPU Cost	0.0001581
Estimated Subtree Cost	0.0032831
Estimated Number of Executions	1
Number of Executions	1
Estimated Number of Rows Per Execution	1.00068
Estimated Number of Rows to be Read	1.00068
Estimated Row Size	28 B
Actual Rebinds	0
Actual Rewinds	0
Ordered	True
Node ID	2
<b>Object</b>	
[AIRDT].[dbo].[CITY_PARTITION].[country_name_idx]	
<b>Output List</b>	
[AIRDT].[dbo].[CITY_PARTITION].CITYCODE, [AIRDT].[dbo].	
[CITY_PARTITION].COUNTRY	
<b>Seek Predicates</b>	
Seek Keys[1]: Prefix: [AIRDT].[dbo].[CITY_PARTITION].COUNTRY =	
Scalar Operator('India')	

Estimated I/O Cost: 0.003125

Estimated Subtree Cost: 0.0032831

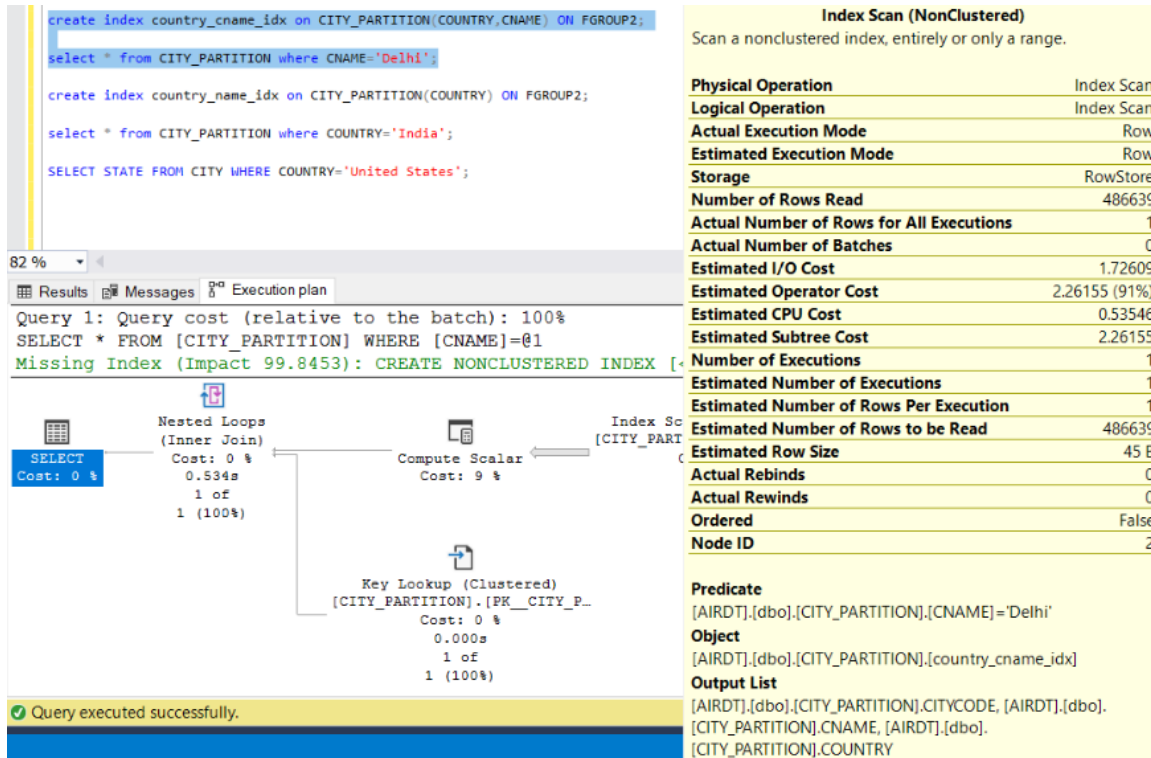
So here also we observe a significant cost reduction!

```
create index country_cname_idx on CITY_PARTITION(COUNTRY,CNAME) ON FGROUP2;
```

Now for the query ,

```
select * from CITY_PARTITION where CNAME='Delhi';
```

Execution plan looks like:



Estimated I/O cost: 1.72609

Estimated Subtree Cost: 2.26155

We can notice that the cost is not reduced much. So we can say that this composite index is not efficient.

**So we saw how to create tables and indexes on multiple disks, how to partition a table across different disks, and analysing the efficiency of the indexes by looking at the execution plan.**

### Creating remaining tables:

I have created some tables on FGROU1, some on FGROU2, or if not any Filegroup is mentioned then it gets created on PRIMARY.

For the remaining tables I have not done any modifications in the structure except creating some of them in different File Groups.

So Here I am just creating them, Inserting some values into them and then Projecting the whole tables.

## AIRPORT Table:

```
CREATE TABLE AIRPORT
(AP_NAME VARCHAR(100) NOT NULL,
STATE VARCHAR(15),
COUNTRY VARCHAR(30),
CNAME VARCHAR(15),
CITYCODE NUMERIC(10),
PRIMARY KEY(AP_NAME),
FOREIGN KEY(CITYCODE) REFERENCES CITY(CITYCODE) ON DELETE CASCADE) ON FGROUP1 ;

SELECT * FROM AIRPORT;

INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME, CITYCODE) VALUES('Louisville International Airport','Kentucky','United States','Louisville',100000);
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME, CITYCODE) VALUES('Chandigarh International Airport','Chandigarh','India','Chandigarh',581187);
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME, CITYCODE) VALUES('Dallas/Fort Worth International Airport','Texas','United States','Fort Worth',190908);
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME, CITYCODE) VALUES('Indira Gandhi International Airport','Delhi','India','Delhi',487787);
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME, CITYCODE) VALUES('Chhatrapati Shivaji International Airport','Maharashtra','India','Mumbai',230532);
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME, CITYCODE) VALUES('San Francisco International Airport','California','United States','San Francisco',120190);
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME, CITYCODE) VALUES('Frankfurt Airport','Hesse','Germany','Frankfurt',121232);
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME, CITYCODE) VALUES('George Bush Intercontinental Airport','Texas','United States','Houston',121112);
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME, CITYCODE) VALUES('John F. Kennedy International Airport','New York','United States','New York City',132222);
INSERT INTO AIRPORT (AP_NAME, STATE, COUNTRY, CNAME, CITYCODE) VALUES('Tampa International Airport','Florida','United States','Tampa',111211);

DROP TABLE AIRPORT;
```

82 %

Results Messages Execution plan

	AP_NAME	STATE	COUNTRY	CNAME	CITYCODE
1	Chandigarh International Airport	Chandigarh	India	Chandigarh	581187
2	Chhatrapati Shivaji International Airport	Maharashtra	India	Mumbai	230532
3	Dallas/Fort Worth International Airport	Texas	United States	Fort Worth	190908
4	Frankfurt Airport	Hesse	Germany	Frankfurt	121232
5	George Bush Intercontinental Airport	Texas	United States	Houston	121112
6	Indira Gandhi International Airport	Delhi	India	Delhi	487787
7	John F. Kennedy International Airport	New York	United States	New York City	132222
8	Louisville International Airport	Kentucky	United States	Louisville	100000
9	San Francisco International Airport	California	United States	San Francis...	120190
10	Tampa International Airport	Florida	United States	Tampa	111211

## AIRLINE Table:

```
CREATE TABLE AIRLINE
(AIRLINEID VARCHAR(3) NOT NULL,
AL_NAME VARCHAR(50),
THREE_DIGIT_CODE VARCHAR(3),
PRIMARY KEY(AIRLINEID)) ON FGROUP1;

-- Inserting values for Table: AIRLINE --

INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('AA','American Airlines','001');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('AI','Air India Limited','098');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('LH','Lufthansa','220');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('BA','British Airways','125');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('QR','Qatar Airways','157');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('9W','Jet Airways','589');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('EK','Emirates','176');
INSERT INTO AIRLINE (AIRLINEID, AL_NAME, THREE_DIGIT_CODE) VALUES('EY','Ethiad Airways','607');

select * from AIRLINE
```

82 %

Results Messages Execution plan

	AIRLINEID	AL_NAME	THREE_DIGIT_CODE
1	9W	Jet Airways	589
2	AA	American Airlines	001
3	AI	Air India Limited	098
4	BA	British Airways	125
5	EK	Emirates	176
6	EY	Ethiad Airways	607
7	LH	Lufthansa	220
8	QR	Qatar Airways	157



## CONTAIN Table after creating inserting some values:

```
CREATE TABLE CONTAIN
(
  AIRLINEID VARCHAR(3) NOT NULL,
  AP_NAME VARCHAR(100) NOT NULL,
  PRIMARY KEY(AIRLINEID, AP_NAME),
  FOREIGN KEY(AIRLINEID) REFERENCES AIRLINE (AIRLINEID) ON DELETE CASCADE,
  FOREIGN KEY(AP_NAME) REFERENCES AIRPORT (AP_NAME) ON DELETE CASCADE) ON FGROUP2;
```

	AIRLINEID	AP_NAME
1	AA	George Bush Intercontinental Airport
2	AA	John F. Kennedy International Airport
3	AA	Louisville International Airport
4	AA	San Francisco International Airport
5	AA	Tampa International Airport
6	AI	Chandigarh International Airport
7	AI	Chhatrapati Shivaji International Airport
8	AI	Dallas/Fort Worth International Airport
9	AI	George Bush Intercontinental Airport
10	AI	Indira Gandhi International Airport
11	BA	Chandigarh International Airport
12	BA	Chhatrapati Shivaji International Airport
13	BA	Frankfurt Airport
14	BA	John F. Kennedy International Airport
15	BA	San Francisco International Airport
16	LH	Chhatrapati Shivaji International Airport
17	LH	Dallas/Fort Worth International Airport
18	LH	Frankfurt Airport
19	LH	John F. Kennedy International Airport
20	LH	San Francisco International Airport
21	QR	Chhatrapati Shivaji International Airport
22	QR	Dallas/Fort Worth International Airport
23	QR	John F. Kennedy International Airport
24	QR	Louisville International Airport
25	QR	Tampa International Airport

## FLIGHT Table after creating and inserting some values:

```
CREATE TABLE FLIGHT
(
  FLIGHT_CODE VARCHAR(10) NOT NULL,
  SOURCE VARCHAR(3),
  DESTINATION VARCHAR(3),
  ARRIVAL VARCHAR(10),
  DEPARTURE VARCHAR(10),
  STATUS VARCHAR(10),
  DURATION VARCHAR(30),
  FLIGHTTYPE VARCHAR(10),
  LAYOVER_TIME VARCHAR(30),
  NO_OF_STOPS INT,
  AIRLINEID VARCHAR(3),
  PRIMARY KEY(FLIGHT_CODE),
  FOREIGN KEY(AIRLINEID) REFERENCES AIRLINE (AIRLINEID) ON DELETE CASCADE) ON FGROUP1;
```

	FLIGHT_CODE	SOURCE	DESTINATION	ARRIVAL	DEPARTURE	STATUS	DURATION	FLIGHTTYPE	LAYOVER_TIME	NO_OF_STOPS	AIRLINEID
1	9W2334	IAH	DEL	23:00	13:45	On-time	23hrs	Direct	0	0	9W
2	AA4367	SFO	FRA	18:10	18:55	On-time	21hrs	Non-stop	0	0	AA
3	AI2014	BOM	DFW	02:10	03:15	On-time	24hr	Connecting	3	1	AI
4	BA1689	FRA	DEL	10:20	10:55	On-time	14hrs	Non-stop	0	0	BA
5	BA3056	BOM	DFW	02:15	02:55	On-time	29hrs	Connecting	3	1	BA
6	EK3456	BOM	SFO	18:50	19:40	On-time	30hrs	Non-stop	0	0	EK
7	EY1234	JFK	TPA	19:20	20:05	On-time	16hrs	Connecting	5	2	EY
8	LH9876	JFK	BOM	05:50	06:35	On-time	18hrs	Non-stop	0	0	LH
9	QR1902	IXC	IAH	22:00	22:50	Delayed	28hrs	Non-stop	5	1	QR
10	QR2305	BOM	DFW	13:00	13:55	Delayed	21hr	Non-stop	0	0	QR



```

CREATE TABLE PASSENGER1
(PID INT NOT NULL,
PASSPORTNO VARCHAR(10) NOT NULL,
PRIMARY KEY(PID, PASSPORTNO));

-- Inserting values in table: PASSENGER1--
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(1, 'A1234568');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(2, 'B9876541');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(3, 'C2345698');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(4, 'D1002004');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(5, 'X9324666');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(6, 'B8765430');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(7, 'J9801235');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(8, 'A1122334');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(9, 'Q1243567');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(10, 'S1243269');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(11, 'E3277889');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(12, 'K3212322');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(13, 'P3452390');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(14, 'W7543336');
INSERT INTO PASSENGER1(PID, PASSPORTNO) VALUES(15, 'R8990566');

select * from PASSENGER1

```

And the PASSENGER1 table looks like:

Results		Messages
	PID	PASSPORTNO
1	1	A1234568
2	2	B9876541
3	3	C2345698
4	4	D1002004
5	5	X9324666
6	6	B8765430
7	7	J9801235
8	8	A1122334
9	9	Q1243567
10	10	S1243269
11	11	E3277889
12	12	K3212322
13	13	P3452390
14	14	W7543336
15	15	R8990566

## PASSENGER2 table:

```
CREATE TABLE PASSENGER2
(PASSPORTNO VARCHAR(10) NOT NULL, FNAME VARCHAR(20),
M VARCHAR(1), LNAME VARCHAR(20),
ADDRESS VARCHAR(100), PHONE BIGINT,
AGE INT, SEX VARCHAR(1),
PRIMARY KEY(PASSPORTNO));
--INSERTING VALUES IN TABLE PASSENGER2--
INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('A1234568', 'ALEN', 'M', 'SMITH', '2230 NORTHSIDE, APT 11, ALBANY, NY', 8080367290, 30, 'M');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('B9876541', 'ANKITA', 'V', 'AHIR', '3456 VIKAS APTS, APT 102, DOMBIVLI, INDIA', 8080367280, 26, 'F');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('C2345698', 'KHYATI', 'A', 'MISHRA', '7820 MCCALLUM COURTS, APT 234, AKRON, OH', 8082267280, 30, 'F');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('D1002004', 'ANKITA', 'S', 'PATIL', '7720 MCCALLUM BLVD, APT 1082, DALLAS, TX', 9080367266, 23, 'F');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('X9324666', 'TEJASHREE', 'B', 'PANDIT', '9082 ESTAES OF RICHARDSON, RICHARDSON, TX', 9004360125, 28, 'F');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('B8765430', 'LAKSHMI', 'P', 'SHARMA', '1110 FIR HILLS, APT 903, AKRON, OH', 7666190505, 30, 'F');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('J9801235', 'AKHILESH', 'D', 'JOSHI', '345 CHATHAM COURTS, APT 678, MUMBAI, INDIA', 9080369290, 29, 'M');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('A1122334', 'MANAN', 'S', 'LAKHANI', '5589 CHTHAM REFLECTIONS, APT 349 HOUSTON, TX', 9004335126, 25, 'F');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('Q1243567', 'KARAN', 'M', 'MOTANI', '4444 FRANKFORD VILLA, APT 77, GUILDERLAND, NY', 9727626643, 22, 'M');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('S1243269', 'ROM', 'A', 'SOLANKI', '7720 MCCALLUM BLVD, APT 2087, DALLAS, TX', 9004568903, 60, 'M');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('E3277889', 'John', 'A', 'GATES', '1234 BAKER APTS, APT 59, HESSE, GERMANY', 9724569986, 10, 'M');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('K3212322', 'SARA', 'B', 'GOMES', '6785 SPLITSVILLA, APT 34, MIAMI, FL', 9024569226, 15, 'F');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('P3452390', 'ALIA', 'V', 'BHAT', '548 MARKET PLACE, SAN Francisco, CA', 9734567800, 10, 'F');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('W7543336', 'JOHN', 'P', 'SMITH', '6666 ROCK HILL, APT 2902, TAMPA, FL', 4624569986, 55, 'M');

INSERT INTO PASSENGER2(PASSPORTNO, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX)
VALUES('R8990566', 'RIA', 'T', 'GUPTA', '3355 PALENCIA, APT 2065, MUMBAI, INDIA', 4724512343, 10, 'M');
```

	PASSPORTNO	FNAME	M	LNAME	ADDRESS	PHONE	AGE	SEX
1	A1122334	MANAN	S	LAKHANI	5589 CHTHAM REFLECTIONS, APT 349 HOUSTON, TX	9004335126	25	F
2	A1234568	ALEN	M	SMITH	2230 NORTHSIDE, APT 11, ALBANY, NY	8080367290	30	M
3	B8765430	LAKSHMI	P	SHARMA	1110 FIR HILLS, APT 903, AKRON, OH	7666190505	30	F
4	B9876541	ANKITA	V	AHIR	3456 VIKAS APTS, APT 102, DOMBIVLI, INDIA	8080367280	26	F
5	C2345698	KHYATI	A	MISHRA	7820 MCCALLUM COURTS, APT 234, AKRON, OH	8082267280	30	F
6	D1002004	ANKITA	S	PATIL	7720 MCCALLUM BLVD, APT 1082, DALLAS, TX	9080367266	23	F
7	E3277889	John	A	GATES	1234 BAKER APTS, APT 59, HESSE, GERMANY	9724569986	10	M
8	J9801235	AKHILESH	D	JOSHI	345 CHATHAM COURTS, APT 678, MUMBAI, INDIA	9080369290	29	M
9	K3212322	SARA	B	GOMES	6785 SPLITSVILLA, APT 34, MIAMI, FL	9024569226	15	F
10	P3452390	ALIA	V	BHAT	548 MARKET PLACE, SAN Francisco, CA	9734567800	10	F
11	Q1243567	KARAN	M	MOTANI	4444 FRANKFORD VILLA, APT 77, GUILDERLAND, NY	9727626643	22	M
12	R8990566	RIA	T	GUPTA	3355 PALENCIA, APT 2065, MUMBAI, INDIA	4724512343	10	M
13	S1243269	ROM	A	SOLANKI	7720 MCCALLUM BLVD, APT 2087, DALLAS, TX	9004568903	60	M
14	W7543336	JOHN	P	SMITH	6666 ROCK HILL, APT 2902, TAMPA, FL	4624569986	55	M
15	X9324666	TEJASHREE	B	PANDIT	9082 ESTAES OF RICHARDSON, RICHARDSON, TX	9004360125	28	F

```

CREATE TABLE PASSENGER3
(PID INT NOT NULL,
FLIGHT_CODE VARCHAR(10),
PRIMARY KEY(PID),
FOREIGN KEY(FLIGHT_CODE) REFERENCES FLIGHT(FLIGHT_CODE) ON DELETE CASCADE);

-- INSERTING VALUES INTO TABLE: PASSENGER3--

INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(1, 'AI2014');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(2, 'LH9876');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(3, '9W2334');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(4, 'QR1902');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(5, 'EY1234');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(6, 'BA3056');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(7, '9W2334');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(8, 'AA4367');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(9, 'QR1902');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(10, 'EK3456');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(11, 'BA1689');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(12, 'QR1902');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(13, 'AI2014');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(14, 'BA1689');
INSERT INTO PASSENGER3(PID, FLIGHT_CODE) VALUES(15, 'QR2305');

select * from PASSENGER3;

```

And the PASSENGER3 table looks like:

Results		Messages
	PID	FLIGHT_CODE
1	1	AI2014
2	2	LH9876
3	3	9W2334
4	4	QR1902
5	5	EY1234
6	6	BA3056
7	7	9W2334
8	8	AA4367
9	9	QR1902
10	10	EK3456
11	11	BA1689
12	12	QR1902
13	13	AI2014
14	14	BA1689
15	15	QR2305

```

CREATE TABLE EMPLOYEE1
(
SSN INT NOT NULL,
FNAME VARCHAR(20),
M VARCHAR(1),
LNAME VARCHAR(20),
ADDRESS VARCHAR(100),
PHONE BIGINT,
AGE INT,
SEX VARCHAR(1),
JOBTYPER VARCHAR(30),
ASTYPE VARCHAR(30),
ETYP VARCHAR(30),
SHIFT VARCHAR(20),
POSITION VARCHAR(30),
AP_NAME VARCHAR(100),
PRIMARY KEY(SSN),
FOREIGN KEY(AP_NAME) REFERENCES AIRPORT(AP_NAME) ON DELETE CASCADE);

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPER, ASTYPE, ETYP, SHIFT, POSITION, AP_NAME)
VALUES(123456789,'LINDA','M','GOODMAN','731 Fondren, Houston, TX',4356789345, 35, 'F','ADMINISTRATIVE SUPPORT','RECEPTIONIST','','','Louisville International Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPER, ASTYPE, ETYP, SHIFT, POSITION, AP_NAME)
VALUES(333445555,'JOHNY','N','PAUL','638 Voss, Houston, TX',9834561995, 40, 'M','ADMINISTRATIVE SUPPORT','SECRETARY','','','Louisville International Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPER, ASTYPE, ETYP, SHIFT, POSITION, AP_NAME)
VALUES(999887777,'JAMES','P','BOND','3321 Castle, Spring, TX',9834666995, 50, 'M','ENGINEER','','','RADIO ENGINEER','','','Louisville International Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPER, ASTYPE, ETYP, SHIFT, POSITION, AP_NAME)
VALUES(987654321,'SHERLOCK','A','HOLMES','123 TOP HILL, SAN Francisco,CA',8089654321, 47, 'M','TRAFFIC MONITOR','','','DAY','','','San Francisco International Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPER, ASTYPE, ETYP, SHIFT, POSITION, AP_NAME)
VALUES(666884444,'SHELDON','A','COOPER','345 CHERRY PARK, HESSE,GERMANY',1254678903, 55, 'M','TRAFFIC MONITOR','','','NIGHT','','','Frankfurt Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPER, ASTYPE, ETYP, SHIFT, POSITION, AP_NAME)
VALUES(453453453,'RAJ','B','SHARMA','345 FLOYDS, MUMBAI,INDIA',4326789031, 35, 'M','AIRPORT AUTHORITY','','','MANAGER','Chhatrapati Shivaji International Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPER, ASTYPE, ETYP, SHIFT, POSITION, AP_NAME)
VALUES(987987987,'NIKITA','C','PAUL','110 SYNERGY PARK, DALLAS,TX',5678904325, 33, 'F','ENGINEER','','','AIRPORT CIVIL ENGINEER','','','Dallas/Fort Worth International Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPER, ASTYPE, ETYP, SHIFT, POSITION, AP_NAME)
VALUES(888665555,'SHUBHAM','R','GUPTA','567 CHANDANI CHOWK, DELHI, INDIA',8566778890, 39, 'M','ADMINISTRATIVE SUPPORT','DATA ENTRY WORKER','','','Indira GandhiInternational Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPER, ASTYPE, ETYP, SHIFT, POSITION, AP_NAME)
VALUES(125478909,'PRATIK','T','GOMES','334 VITRUVIAN PARK, ALBANY, NY',4444678903, 56, 'M','TRAFFIC MONITOR','','','DAY','','','John F. Kennedy International Airport');

INSERT INTO EMPLOYEE1(SSN, FNAME, M, LNAME, ADDRESS, PHONE, AGE, SEX, JOBTYPER, ASTYPE, ETYP, SHIFT, POSITION, AP_NAME)
VALUES(324567897,'ADIT','P','DESAI','987 SOMNATH, CHANDIGARH, INDIA',2244658909, 36, 'M','TRAFFIC MONITOR','','','DAY','','','Chandigarh International Airport');

select * from EMPLOYEE1

```

Results Messages														
	SSN	FNAME	M	LNAME	ADDRESS	PHONE	AGE	SEX	JOBTYPER	ASTYPE	ETYPE	SHIFT	POSITION	AP_NAME
1	123456789	LINDA	M	GOODMAN	731 Fondren, Houston, TX	4356789345	35	F	ADMINISTRATIVE SUPPORT	RECEPTIONIST				Louisville International Airport
2	125478909	PRATIK	T	GOMES	334 VITRUVIAN PARK, ALBANY, NY	4444678903	56	M	TRAFFIC MONITOR		DAY			John F. Kennedy International Airport
3	324567897	ADIT	P	DESAI	987 SOMNATH, CHANDIGARH, INDIA	2244658909	36	M	TRAFFIC MONITOR		DAY			Chandigarh International Airport
4	333445555	JOHNY	N	PAUL	638 Voss, Houston, TX	9834561995	40	M	ADMINISTRATIVE SUPPORT	SECRETARY				Louisville International Airport
5	453453453	RAJ	B	SHARMA	345 FLOYDS, MUMBAI,INDIA	4326789031	35	M	AIRPORT AUTHORITY				MANAGER	Chhatrapati Shivaji International Airport
6	666884444	SHELDON	A	COOPER	345 CHERRY PARK, HESSE,GERMANY	1254678903	55	M	TRAFFIC MONITOR		NIGHT			Frankfurt Airport
7	888665555	SHUBHAM	R	GUPTA	567 CHANDANI CHOWK, DELHI, INDIA	8566778890	39	M	ADMINISTRATIVE SUPPORT	DATA ENTRY WORKER				Indira GandhiInternational Airport
8	987654321	SHERLOCK	A	HOLMES	123 TOP HILL, SAN Francisco,CA	8089654321	47	M	TRAFFIC MONITOR			DAY		San Francisco International Airport
9	987987987	NIKITA	C	PAUL	110 SYNERGY PARK, DALLAS,TX	5678904325	33	F	ENGINEER		AIRPORT CIVIL ENGINEER			Dallas/Fort Worth International Airport
10	999887777	JAMES	P	BOND	3321 Castle, Spring, TX	9834666995	50	M	ENGINEER		RADIO ENGINEER			Louisville International Airport

## EMPLOYEE1 and EMPLOYEE2 table

```

CREATE TABLE EMPLOYEE2
(
JOBTYPER VARCHAR(30) NOT NULL,
SALARY INT,
PRIMARY KEY(JOBTYPER));

--INSERTING VALUES INTO TABLE: EMPLOYEE2--
INSERT INTO EMPLOYEE2(JOBTYPER, SALARY)VALUES('ADMINISTRATIVE SUPPORT',50000);
INSERT INTO EMPLOYEE2(JOBTYPER, SALARY)VALUES('ENGINEER',70000);
INSERT INTO EMPLOYEE2(JOBTYPER, SALARY)VALUES('TRAFFIC MONITOR',80000);
INSERT INTO EMPLOYEE2(JOBTYPER, SALARY)VALUES('AIRPORT AUTHORITY',90000);

select * from EMPLOYEE2

```

Results		Messages
	JOBTYPER	SALARY
1	ADMINISTRATIVE SUPPORT	50000
2	AIRPORT AUTHORITY	90000
3	ENGINEER	70000
4	TRAFFIC MONITOR	80000

```

CREATE TABLE SERVES
(SSN INT NOT NULL,
PID INT NOT NULL,
PASSPORTNO VARCHAR(10) NOT NULL,
PRIMARY KEY(SSN, PID, PASSPORTNO),
FOREIGN KEY(SSN) REFERENCES EMPLOYEE1 (SSN) ON DELETE CASCADE,
FOREIGN KEY(PID, PASSPORTNO) REFERENCES PASSENGER1(PID, PASSPORTNO) ON DELETE CASCADE);

-- INSERTING VALUES INTO TABLE: SERVES--
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(123456789,1, 'A1234568');
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(123456789,15, 'R8990566');
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(123456789,9, 'Q1243567');
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(888665555,4, 'D1002004');
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(888665555,13, 'P3452390');
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(333445555,10, 'S1243269');
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(333445555,12, 'K3212322');
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(888665555,12, 'K3212322');
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(123456789,7, 'J9801235');
INSERT INTO SERVES(SSN, PID, PASSPORTNO) VALUES(888665555,7, 'J9801235');

select * from SERVES

```

SERVES table:

Results		Messages	
	SSN	PID	PASSPORTNO
1	123456789	1	A1234568
2	123456789	7	J9801235
3	123456789	9	Q1243567
4	123456789	15	R8990566
5	333445555	10	S1243269
6	333445555	12	K3212322
7	888665555	4	D1002004
8	888665555	7	J9801235
9	888665555	12	K3212322
10	888665555	13	P3452390



```

CREATE TABLE TICKET1
(TICKET_NUMBER BIGINT NOT NULL,
SOURCE VARCHAR(3),DESTINATION VARCHAR(3),
DATE_OF_BOOKING DATE,DATE_OF_TRAVEL DATE,SEATNO VARCHAR(5),
CLASS VARCHAR(15),DATE_OF_CANCELLATION DATE,
PID INT,PASSPORTNO VARCHAR(10),
FOREIGN KEY(PID, PASSPORTNO) REFERENCES PASSENGER1(PID, PASSPORTNO) ON DELETE CASCADE);

--INSERTING INTO TABLE: TICKET1--
INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(0011234111122,'BOM','DFW','11-MAY-16','','15-DEC-16','32A','ECONOMY',1,'A1234568');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(0984567222299,'JFK','BOM','11-JUN-16','10-DEC-16','20-DEC-16','45D','ECONOMY',2,'B9876541');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1768901333273,'IAH','DEL','21-AUG-16','','25-DEC-16','1A','BUSINESS',3,'C2345698');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(5890987441464,'IXC','IAH','10-AUG-16','','12-JAN-17','20C','FIRST-CLASS',4,'D1002004');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1577654664266,'JFK','TPA','13-JUN-16','','10-DEC-16','54E','ECONOMY',5,'X9324666');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(2206543545545,'BOM','DFW','11-NOV-16','','12-FEB-17','43B','ECONOMY',6,'B8765430');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(7064321779737,'IAH','DEL','15-NOV-16','','25-DEC-16','27B','FIRST-CLASS',7,'J9801235');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1571357215116,'SFO','FRA','15-OCT-16','','18-DEC-16','34E','ECONOMY',8,'A1122334');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1570864987655,'IXC','IAH','12-NOV-16','','30-DEC-16','54C','ECONOMY',9,'Q1243567');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1579283997799,'BOM','SFO','22-JAN-16','','15-DEC-16','38A','ECONOMY',10,'S1243269');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1255701876107,'FRA','DEL','19-OCT-16','','31-DEC-16','57F','ECONOMY',11,'E3277889');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1251334499699,'IXC','IAH','20-NOV-16','','12-JAN-17','45D','ECONOMY',12,'K3212322');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(1258776199490,'BOM','DFW','13-MAY-16','25-MAY-16','15-DEC-16','37C','ECONOMY',13,'P3452390');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(5891155114477,'FRA','DEL','26-JUN-16','','23-DEC-16','55C','ECONOMY',14,'W7543336');

INSERT INTO TICKET1(TICKET_NUMBER, SOURCE, DESTINATION, DATE_OF_BOOKING, DATE_OF_CANCELLATION, DATE_OF_TRAVEL, SEATNO, CLASS, PID, PASSPORTNO)
VALUES(5893069766787,'BOM','DFW','11-AUG-16','','22-DEC-16','33F','ECONOMY',15,'R8990566');

```

TICKET1 table:

	TICKET_NUMBER	SOURCE	DESTINATION	DATE_OF_BOOKING	DATE_OF_TRAVEL	SEATNO	CLASS	DATE_OF_CANCELLATION	PID	PASSPORTNO
1	11234111122	BOM	DFW	2016-05-11	2016-12-15	32A	ECONOMY	1900-01-01	1	A1234568
2	984567222299	JFK	BOM	2016-06-11	2016-12-20	45D	ECONOMY	2016-12-10	2	B9876541
3	1768901333273	IAH	DEL	2016-08-21	2016-12-25	1A	BUSINESS	1900-01-01	3	C2345698
4	5890987441464	IXC	IAH	2016-08-10	2017-01-12	20C	FIRST-CLASS	1900-01-01	4	D1002004
5	1577654664266	JFK	TPA	2016-06-13	2016-12-10	54E	ECONOMY	1900-01-01	5	X9324666
6	2206543545545	BOM	DFW	2016-11-11	2017-02-12	43B	ECONOMY	1900-01-01	6	B8765430
7	7064321779737	IAH	DEL	2016-11-15	2016-12-25	27B	FIRST-CLASS	1900-01-01	7	J9801235
8	1571357215116	SFO	FRA	2016-10-15	2016-12-18	34E	ECONOMY	1900-01-01	8	A1122334
9	1570864987655	IXC	IAH	2016-11-12	2016-12-30	54C	ECONOMY	1900-01-01	9	Q1243567
10	1579283997799	BOM	SFO	2016-01-22	2016-12-15	38A	ECONOMY	1900-01-01	10	S1243269
11	1255701876107	FRA	DEL	2016-10-19	2016-12-31	57F	ECONOMY	1900-01-01	11	E3277889
12	1251334499699	IXC	IAH	2016-11-20	2017-01-12	45D	ECONOMY	1900-01-01	12	K3212322
13	1258776199490	BOM	DFW	2016-05-13	2016-12-15	37C	ECONOMY	2016-05-25	13	P3452390
14	5891155114477	FRA	DEL	2016-06-26	2016-12-23	55C	ECONOMY	1900-01-01	14	W7543336
15	5893069766787	BOM	DFW	2016-08-11	2016-12-22	33F	ECONOMY	1900-01-01	15	R8990566

```

CREATE TABLE TICKET2
(
  DATE_OF_BOOKING DATE NOT NULL,
  SOURCE VARCHAR(3) NOT NULL,
  DESTINATION VARCHAR(3) NOT NULL,
  CLASS VARCHAR(15) NOT NULL,
  PRICE INT,
  PRIMARY KEY(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS));

-- INSERTING VALUES INTO TICKET2--
INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('11-MAY-16','BOM','DFW','ECONOMY',95000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('11-JUN-16','JFK','BOM','ECONOMY',100000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('21-AUG-16','IAH','DEL','BUSINESS',200000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('10-AUG-16','IXC','IAH','FIRST-CLASS',150000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('13-JUN-16','JFK','TPA','ECONOMY',98000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('11-NOV-16','BOM','DFW','ECONOMY',125000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('15-NOV-16','IAH','DEL','FIRST-CLASS',195000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('15-OCT-16','SFO','FRA','ECONOMY',170000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('12-NOV-16','IXC','IAH','ECONOMY',140000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('22-JAN-16','BOM','SFO','ECONOMY',45000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('19-OCT-16','FRA','DEL','ECONOMY',100000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('20-NOV-16','IXC','IAH','ECONOMY',120000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('13-MAY-16','BOM','DFW','ECONOMY',65000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('26-JUN-16','FRA','DEL','ECONOMY',80000);

INSERT INTO TICKET2(DATE_OF_BOOKING, SOURCE, DESTINATION, CLASS, PRICE)
VALUES('11-AUG-16','BOM','DFW','ECONOMY',95000);

```

TICKET2 table:

	DATE_OF_BOOKING	SOURCE	DESTINATION	CLASS	PRICE
1	2016-01-22	BOM	SFO	ECONOMY	45000
2	2016-05-11	BOM	DFW	ECONOMY	95000
3	2016-05-13	BOM	DFW	ECONOMY	65000
4	2016-06-11	JFK	BOM	ECONOMY	100000
5	2016-06-13	JFK	TPA	ECONOMY	98000
6	2016-06-26	FRA	DEL	ECONOMY	80000
7	2016-08-10	IXC	IAH	FIRST-CLASS	150000
8	2016-08-11	BOM	DFW	ECONOMY	98000
9	2016-08-21	IAH	DEL	BUSINESS	200000
10	2016-10-15	SFO	FRA	ECONOMY	170000
11	2016-10-19	FRA	DEL	ECONOMY	100000
12	2016-11-11	BOM	DFW	ECONOMY	125000
13	2016-11-12	IXC	IAH	ECONOMY	140000
14	2016-11-15	IAH	DEL	FIRST-CLASS	195000
15	2016-11-20	IXC	IAH	ECONOMY	120000



```

CREATE TABLE TICKET3
(
  DATE_OF_CANCELLATION DATE NOT NULL,
  SURCHARGE INT,
  PRIMARY KEY(DATE_OF_CANCELLATION));



-- INSERTING VALUES INTO TABLE: TICKET3--

INSERT INTO TICKET3(DATE_OF_CANCELLATION, SURCHARGE) VALUES('10-DEC-16',75000);
INSERT INTO TICKET3(DATE_OF_CANCELLATION, SURCHARGE) VALUES('25-MAY-16',25000);

select * from TICKET3

```

TICKET3 table :

<div> <div> Results</div> <div> Messages</div> </div>		
	DATE_OF_CANCELLATION	SURCHARGE
1	2016-05-25	25000
2	2016-12-10	75000