



BUS SCHEDULE MANAGEMENT SYSTEM

DBMS BY KAREN PEDRI

PROJECT ANALYSIS DELIVERABLES

WHAT IS IT?

- In my project, the bus schedule management system is being created. The fare, time, and bus number for each route must be tracked along with the driver and bus info for each bus.



PROJECT ANALYSIS DELIVERABLES HOW, WHO, AND WHEN?

- This system can be done by separating the bus information, driver information, and schedule information into separate tables and linking them through IDs like bus number and driver number.
- The database will ultimately be managed by dispatchers and managers of a bus organization in the future.
- New schedules will be entered whenever needed and new drivers/buses must be entered each time a new one arrives at the company.

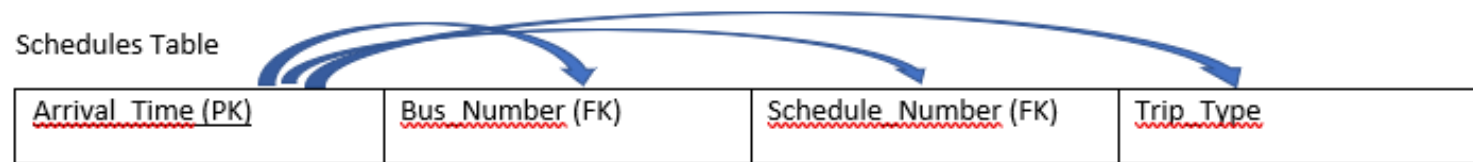
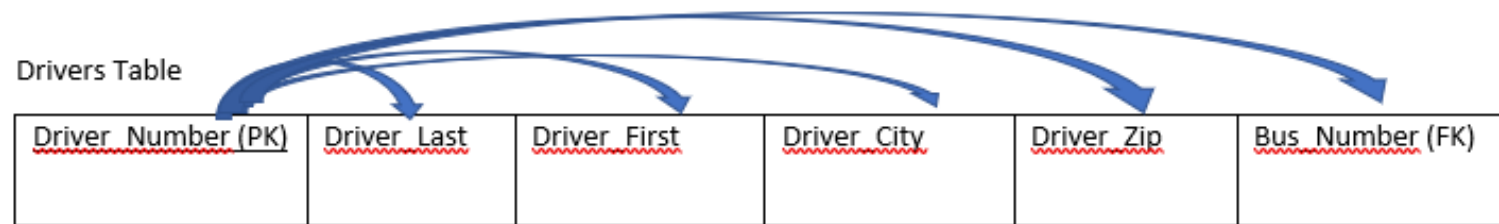
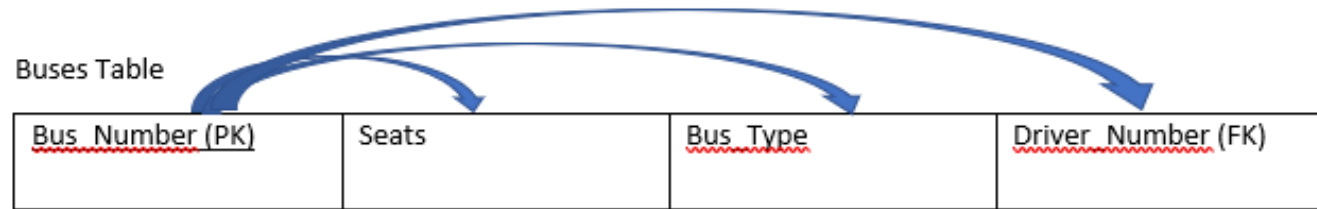


PROJECT ANALYSIS DELIVERABLES WHY, AND HOW TO IMPROVE IT?

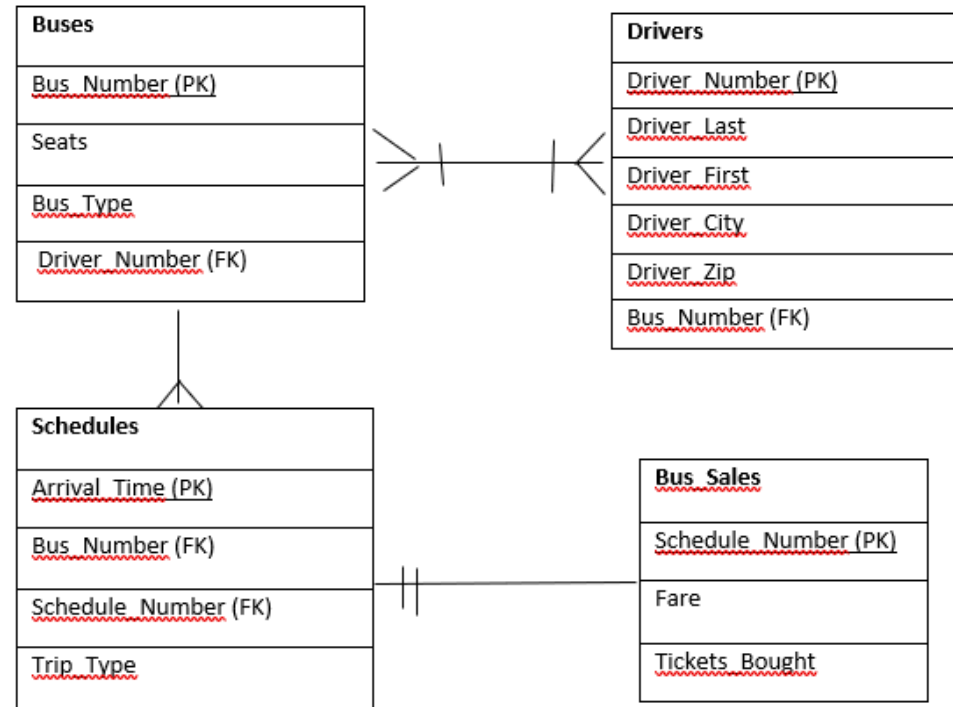
- This is being done to better track the buses and bus schedules of a company or organization.
- It will make it easier to ensure customers are paying their fare and there is enough space on each bus.
- This can most likely be improved by automating nearly every process. Also can include handicapped availability in the future.



DEPENDENCY DIAGRAMS



ERD DIAGRAMS



BUSES TABLE

BUSES											+ ▾		
Table	Data	Indexes	Model	Constraints	Grants	Statistics	UI Defaults	Triggers	Dependencies	SQL	REST		
<div><div>Add Column</div><div>Modify Column</div><div>Rename Column</div><div>Drop Column</div><div>Rename</div><div>Copy</div><div>Drop</div><div>Truncate</div><div>Create Lookup Table</div></div>													
Column Name				Data Type				Nullable		Default		Primary Key	
BUS_NUMBER				VARCHAR2(10)				No		-		1	
SEATS				NUMBER(20,0)				Yes		-		-	
BUS_TYPE				VARCHAR2(20)				Yes		-		-	
DRIVER_NUMBER				VARCHAR2(20)				Yes		-		-	

BUSES

Table

Data

Indexes

Model

Constraints

Grants

Statistics

UI Defaults

Triggers

Dependencies

SQL









REST

Query

Count Rows

Insert Row

Data

EDIT	BUS_NUMBER	SEATS	BUS_TYPE	DRIVER_NUMBER
	8795	30	Express	01
	4569	15	Hybrid	02
	5684	20	Electric	02
	1345	34	Regular	03
	9465	40	Hybrid	04
	6458	22	Electric	05
	6594	15	Hybrid	06
	6471	30	Regular	06

Download

DRIVERS TABLE

DRIVERS

Table

DataIndexesModelConstraintsGrantsStatisticsUI DefaultsTriggersDependenciesSQLREST

Add ColumnModify ColumnRename ColumnDrop ColumnRenameCopyDropTruncateCreate Lookup Table

Column Name	Data Type	Nullable	Default	Primary Key
DRIVER_NUMBER	VARCHAR2(20)	No	-	1
DRIVER_LAST	VARCHAR2(20)	Yes	-	-
DRIVER_FIRST	VARCHAR2(20)	Yes	-	-
DRIVER_CITY	VARCHAR2(20)	Yes	-	-
DRIVER_ZIP	VARCHAR2(20)	Yes	-	-
BUS_NUMBER	VARCHAR2(20)	Yes	-	-

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DRIVERS

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Table

Data

Indexes

Model

Constraints

Grants

Statistics

UI Defaults

Triggers

Dependencies

SQL







REST

Query

Count Rows

Insert Row

Data

EDIT	DRIVER_NUMBER	DRIVER_LAST	DRIVER_FIRST	DRIVER_CITY	DRIVER_ZIP	BUS_NUMBER
	01	Smith	John	Manhattan	01154	8795
	02	Lincoln	Chris	Staten Island	36659	5684
	03	Ferr	Jessica	Brooklyn	03314	1345
	04	Ped	Vincent	Brooklyn	34495	9465
	05	Crin	Jim	Queens	64487	6458
	06	Cruz	Billy	Bronx	06647	6594

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row(s) 1 - 6 of 6

SCHEDULES TABLE

SCHEDULES

Table

DataIndexesModelConstraintsGrantsStatisticsUI DefaultsTriggersDependenciesSQLREST

Add Column

Modify Column

Rename Column

Drop Column

Rename

Copy

Drop

Truncate

Create Lookup Table

Column Name	Data Type	Nullable	Default	Primary Key
ARRIVAL_TIME	VARCHAR2(20)	No	-	1
BUS_NUMBER	VARCHAR2(10)	Yes	-	-
SCHEDULE_NUMBER	VARCHAR2(30)	Yes	-	-
TRIP_TYPE	VARCHAR2(20)	Yes	-	-

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SCHEDULES

Table

Data

Indexes

Model

Constraints

Grants

Statistics

UI Defaults

Triggers

Dependencies

SQL









REST

Query

Count Rows

Insert Row

Data

EDIT	ARRIVAL_TIME	BUS_NUMBER	SCHEDULE_NUMBER	TRIP_TYPE
	7:15 AM	8795	X12	Express
	8:15 AM	4569	X54	Express
	9:15 AM	6594	H10	Local
	10:15 AM	1345	H50	Local
	11:15 AM	9465	A10	Local
	1:15 PM	6458	X22	Express
	2:15 PM	5684	A23	Local
	5:15 PM	6471	X20	Express

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row(s) 1 - 8 of 8

BUS_SALES TABLE

BUS_SALES

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Table

Data

Indexes

Model

Constraints

Grants

Statistics

UI Defaults

Triggers

Dependencies

SQL

REST

Add Column

Modify Column

Rename Column

Drop Column

Rename

Copy









Drop

Truncate

Create Lookup Table

Column Name	Data Type	Nullable	Default	Primary Key
SCHEDULE_NUMBER	VARCHAR2(30)	No	-	1
FARE	VARCHAR2(20)	Yes	-	-
TICKETS_BOUGHT	VARCHAR2(20)	Yes	-	-

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BUS_SALES			
Table	Data	Indexes	Model
Constraints	Grants	Statistics	UI Defaults
Triggers	Dependencies	SQL	REST
<div><div>Query</div><div>Count Rows</div><div>Insert Row</div></div>			
Data			
EDIT	SCHEDULE_NUMBER	FARE	TICKETS_BOUGHT
	X12	3.25	20
	X54	4.00	12
	H10	3.00	15
	H50	3.00	32
	A10	2.25	40
	X22	4.00	22
	A23	3.00	15
	X20	5.00	30
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BUSES UPDATE

SQL Commands

SchemaUS_B557_SQL_S26

Rows10

Clear CommandFind Tables

UPDATE Buses
SET Seats = 40
WHERE Bus_Number = 8795;

SaveRun

Results

ExplainDescribeSaved SQLHistory

1 row(s) updated.

0.00 seconds

Rows10

Clear CommandFind Tables

SELECT *
FROM Buses;

SaveRun

Results

ExplainDescribeSaved SQLHistory

0 rows returned in 0.00 seconds

Powered

DRIVERS UPDATE

Rows 10

Clear CommandFind Tables

SaveRun

```
UPDATE Drivers
SET Driver_Last = 'Jones'
WHERE Driver_Number = 03;
```

ResultsExplainDescribeSaved SQLHistory

1 row(s) updated.

0.01 seconds

SQL Commands

SchemaUS_8557_SQL_S26

Rows 10

Clear CommandFind Tables

SaveRun

```
SELECT *
FROM Drivers;
```

Results

Explain

Describe

Saved SQL

History

DRIVER_NUMBER		DRIVER_LAST	DRIVER_FIRST	DRIVER_CITY	DRIVER_ZIP	BUS_NUMBER
01		Smith	John	Manhattan	01154	8795
02		Lincoln	Chris	Staten island	36659	5684
03		Jones	Jessica	Brooklyn	03314	1345
04		Ped	Vincent	Brooklyn	34495	9465
05		Crin	Jim	Queens	64487	6458
06		Cruz	Billy	Bronx	06647	6594

SCHEDULES UPDATE

Rows10

Clear CommandFind Tables

SaveRun

UPDATE Schedules
SET Trip_Type = 'Local'
WHERE Schedule_Number = 'A23';

Results

ExplainDescribeSaved SQLHistory

1 row(s) updated.

SQL Commands

SchemaUL_8357_SQL_528

Rows10

Clear CommandFind Tables

SaveRun

SELECT *
FROM Schedules;

Results

ExplainDescribeSaved SQLHistory

ARRIVAL_TIME	BUS_NUMBER	SCHEDULE_NUMBER	TRIP_TYPE
7:15 AM	8795	X12	Express
8:15 AM	4569	X54	Express
9:15 AM	6394	H10	Local
10:15 AM	1345	H50	Local
11:15 AM	9465	A10	Local
1:15 PM	6458	X22	Express
2:15 PM	5684	A23	Local
5:15 PM	6471	X20	Express

8 rows returned in 0.00 seconds

Download

BUS_SALES UPDATE

SQL Commands

SchemaUS_8557_SQL_S26

Rows10

Clear CommandFind Tables

SaveRun

UPDATE Bus_Sales

SET Fare = 3.25

WHERE Schedule_Number = 'H10';

Results Explain Describe Saved SQL History

1 row(s) updated.

0.01 seconds

SQL Commands

SchemaUS_8557_SQL_S26

Rows10

Clear CommandFind Tables

SaveRun

SELECT *

FROM Bus_Sales;

SCHEDULE_NUMBER	FARE	TICKETS_BOUGHT
X12	3.25	20
X54	4.00	12
H10	3.25	15
H50	3.00	32
A10	2.25	40
X22	4.00	22
A23	3.00	15
X20	5.00	30

8 rows returned in 0.01 seconds

Download

BUS_SALES CALCULATION

Rows 10 ? Clear Command Find Tables Save Run

```
SELECT Schedule_Number, (Fare * Tickets_Bought) AS "Total Revenue from Trip"
FROM Bus_Sales;
```

Results	Explain	Describe	Saved SQL	History
SCHEDULE_NUMBER		Total Revenue from Trip		
X12		65		
X54		48		
H10		48.75		
H50		96		
A10		90		
X22		88		
A23		45		
X20		150		

BUSES/DRIVERS INNER JOIN

SQL Commands

SchemaUS_B557_SQL_S26

Rows10

Clear CommandFind Tables

SaveRun

```
SELECT Buses.Bus_Number, Drivers.Driver_Last, Drivers.Driver_First
FROM Buses
INNER JOIN Drivers
ON Buses.Driver_Number = Drivers.Driver_Number;
```

Results

ExplainDescribeSaved SQLHistory

BUS_NUMBER	DRIVER_LAST	DRIVER_FIRST
8795	Smith	John
4569	Lincoln	Chris
5684	Lincoln	Chris
1345	Jones	Jessica
9465	Ped	Vincent
6458	Crin	Jim
6594	Cruz	Billy
6471	Cruz	Billy

8 rows returned in 0.00 secondsDownload

MULTI-LEVEL SELECT

SQL Commands

SchemaUS_B557_SQL_S26?

Rows10

Clear CommandFind Tables

SaveRun

```
SELECT (SELECT SUM(Fare) FROM Bus_Sales) AS "Total Cost of All Fares"
FROM Bus_Sales
```

Results

ExplainDescribeSaved SQLHistory

Total Cost of All Fares
27.75

PRACTICAL SELECT

Rows10

Clear CommandFind Tables

SaveRun

```
SELECT Schedules.Arrival_Time, Schedules.Schedule_Number, (Bus_Sales.Fare * Bus_Sales.Tickets_Bought) AS "Total Revenue For Trip"
FROM Schedules
INNER JOIN Bus_Sales
ON Bus_Sales.Schedule_Number = Schedules.Schedule_Number;
```

ResultsExplainDescribeSaved SQLHistory

ARRIVAL_TIME	SCHEDULE_NUMBER	Total Revenue For Trip
7:15 AM	X12	65
8:15 AM	X54	48
9:15 AM	H10	48.75
10:15 AM	H50	96
11:15 AM	A10	90
1:15 PM	X22	88
2:15 PM	A23	45
5:15 PM	X20	150

8 rows returned in 0.03 secondsDownload