ISDS 402 FINAL PROJECT

MovinOn Database Design

Demarest, Blake

1.List of identities and attributes for MovinOn DataBase Design

Employee
EMPLOYEE (EmployeeID, EmployeeName, Address, City, State, Zip, Phone, CellPhone, SSN, DateOfBirth, HireDate, TerminationDate, AnnualSalary, HourlyRate, *PositionID*, *WarehouseID*)
Primary Key: EmployeeID
Foreign Keys: PositionID, WarehouseID

Position
POSITION (PositionID, Title)
Primary Key: PositionID

Warehouse
WAREHOUSE (WarehouseID, Address, City, State, Zip, Phone, ClimateControl, SecurityGate)
Primary Key: WarehouseID

StorageUnit
STORAGE_UNIT (UnitID, UnitSize, Rent, *WarehouseID*)
Primary Key: UnitID
Foreign Key: WarehouseID

Customer
CUSTOMER (CustomerID, CompanyName, ContactName, Address, City, State, Zip, Phone, Email)
Primary Key: CustomerID

JobOrder
JOB_ORDER (JobOrderID, MoveDate, AddressMovingFrom, AddressMovingTo, EstimatedMileage, EstimatedWeight, PackingService, HeavyItem, StoreItems, *CustomerID, UnitID*)
Primary Key: JobOrderID
Foreign Key: CustomerID, UnitID

JobDetail
JOB_DETAIL (JobDetailID, ActualMileage, ActualWeight, *JobOrderID*, *DriverID*, *VehicleID*)
Primary Key: JobDetailID
Foreign Keys: JobOrderID, DriverID, VehicleID

Driver
DRIVER (DriverID, DriverName, Address, City, State, Zip, Phone, Email, DrivingRecordRating, MileageRate)
Primary Key: DriverID

Vehicle
VEHICLE (VehicleID, LicensePlateNumber, NumberOfAxles, Color)
Primary Key: VehicleID

2. Visio Design for MovinOn Database

EMPLOYEE

PK	EmployeeID
	EmployeeName
	Address
	City
	State
	Zip
	Phone
	CellPhone
	SSN
	DateOfBirth
	HireDate
	TerminationDate
	AnnualSalary
	HourlyRate
FK	PositionID
FK	WarehouseID

POSITION

PK	PositionID
	Title

WAREHOUSE

PK	WarehouseID
	Address
	City
	State
	Zip
	Phone
	ClimateControl
	SecurityGate

DRIVER

PK	DriverID
	DriverName
	Address
	City
	State
	Zip
	Phone
	Email
	DrivingRecordRating
	MileageRate

STORAGE_UNIT

PK	UnitID
	UnitSize
	Rent
FK	WarehouseID

CUSTOMER

PK	CustomerID
	CompanyName
	ContactName
	Address
	City
	State
	Zip
	Phone
	Email

VEHICLE

PK	VehicleID
	LicensePlateNumber
	NumberOfAxles
	Color

JOB_ORDER

PK	JobOrderID
	MoveDate
	AddressMovingFrom
	AddressMovingTo
	EstimatedMileage
	EstimatedWeight
	PackingService
	HeavyItem
	StoreItems
FK	CustomerID
FK	UnitID

JOB_DETAIL

PK	JobDetailID
	ActualMileage
	ActualWeight
	JobOrderID
FK	JobOrderID
FK	DriverID
FK	VehicleID

3. Database Table With Metadata

Employee Table
Description: Stores detailed information about each employee, including their contact details, position, salary, and warehouse assignment.

Field Name	Data Type	Field Size	Description
EmployeeID	INT	10	Unique identifier for each employee
EmployeeName	VARCHAR	100	Full name of employee
Address	VARCHAR	255	Home address of employee
City	VARCHAR	100	City of employee's address
State	VARCHAR	2	State abbreviation of employee's address
Zip	VARCHAR	10	Postal code of employee's address
Phone	VARCHAR	15	Contact phone number of employee
CellPhone	VARCHAR	15	Cell phone number of employee
SSN	VARCHAR	11	Social Security Number of employee
DateOfBirth	DATE	-	Date of birth of employee
HireDate	DATE	-	Date employee was hired
TerminationDate	DATE	-	Date employee was terminated, if applicable
AnnualSalary	DECIMAL	10, 2	Annual salary of employee
HourlyRate	DECIMAL	10, 2	Hourly rate of employee, if applicable
PositionID	INT	10	Foreign key linking to Position table
WarehouseID	VARCHAR	10	Foreign key linking to Warehouse table

Position Table
Description: Contains a list of different positions or job titles within the company.

Field Name	Data Type	Field Size	Description
PositionID	INT	10	Unique identifier for each position
Title	VARCHAR	100	Name of position

Warehouse Table
Description: Holds information about each of company's warehouses, including location and features.

Field Name	Data Type	Field Size	Description
WarehouseID	VARCHAR	10	Unique identifier for each warehouse
Address	VARCHAR	255	Address of warehouse
City	VARCHAR	100	City where warehouse is located
State	VARCHAR	2	State where warehouse is located
Zip	VARCHAR	10	Postal code for warehouse

Field Name	Data Type	Field Size	Description
Phone	VARCHAR	15	Contact phone number for warehouse
ClimateControl	BOOLEAN	-	Indicates if warehouse has climate control
SecurityGate	BOOLEAN	-	Indicates if warehouse has a security gate

Storage Unit Table
Description: Details individual storage units available at each warehouse, including size and rental price.

Field Name	Data Type	Field Size	Description
UnitID	INT	10	Unique identifier for each storage unit
UnitSize	VARCHAR	10	Dimensions of storage unit (e.g., 12x12)
Rent	DECIMAL	10, 2	Monthly rent price for storage unit
WarehouseID	VARCHAR	10	Foreign key linking to Warehouse table

Customer Table
Description: Contains information about each customer, including contact details.

Field Name	Data Type	Field Size	Description
CustomerID	INT	10	Unique identifier for each customer
CompanyName	VARCHAR	255	Name of company, if applicable
ContactName	VARCHAR	100	Name of primary contact for customer
Address	VARCHAR	255	Address of customer
City	VARCHAR	100	City of customer's address
State	VARCHAR	2	State of customer's address
Zip	VARCHAR	10	Zip code of customer's address
Phone	VARCHAR	15	Phone number of customer
Email	VARCHAR	100	Email address of customer

Job Order Table
Description: Records each job order placed by customers, detailing service requested.

Field Name	Data Type	Field Size	Description
JobOrderID	INT	10	Unique identifier for each job order
MoveDate	DATE	-	Scheduled date for moving service
AddressMovingFrom	VARCHAR	255	Origin address for move
AddressMovingTo	VARCHAR	255	Destination address for move
EstimatedMileage	INT	10	Estimated mileage for move
EstimatedWeight	INT	10	Estimated weight of items to be moved
PackingService	BOOLEAN	-	Indicates if packing service is needed
HeavyItem	BOOLEAN	-	Indicates if heavy items need moving
StoreItems	BOOLEAN	-	Indicates if items need storing

Field Name	Data Type	Field Size	Description
CustomerID	INT	10	Foreign key linking to Customer table

Job Detail Table
Description: Details specifics of each job, including assignment of vehicles and drivers.

Field Name	Data Type	Field Size	Description
JobDetailID	INT	10	Unique identifier for each job detail
ActualMileage	INT	10	Actual mileage covered during job
ActualWeight	INT	10	Actual weight of items moved
JobOrderID	INT	10	Foreign key linking to Job Order table
DriverID	INT	10	Foreign key linking to Driver table
VehicleID	INT	10	Foreign key linking to Vehicle table

Driver Table
Description: Stores information about drivers, including their performance ratings.

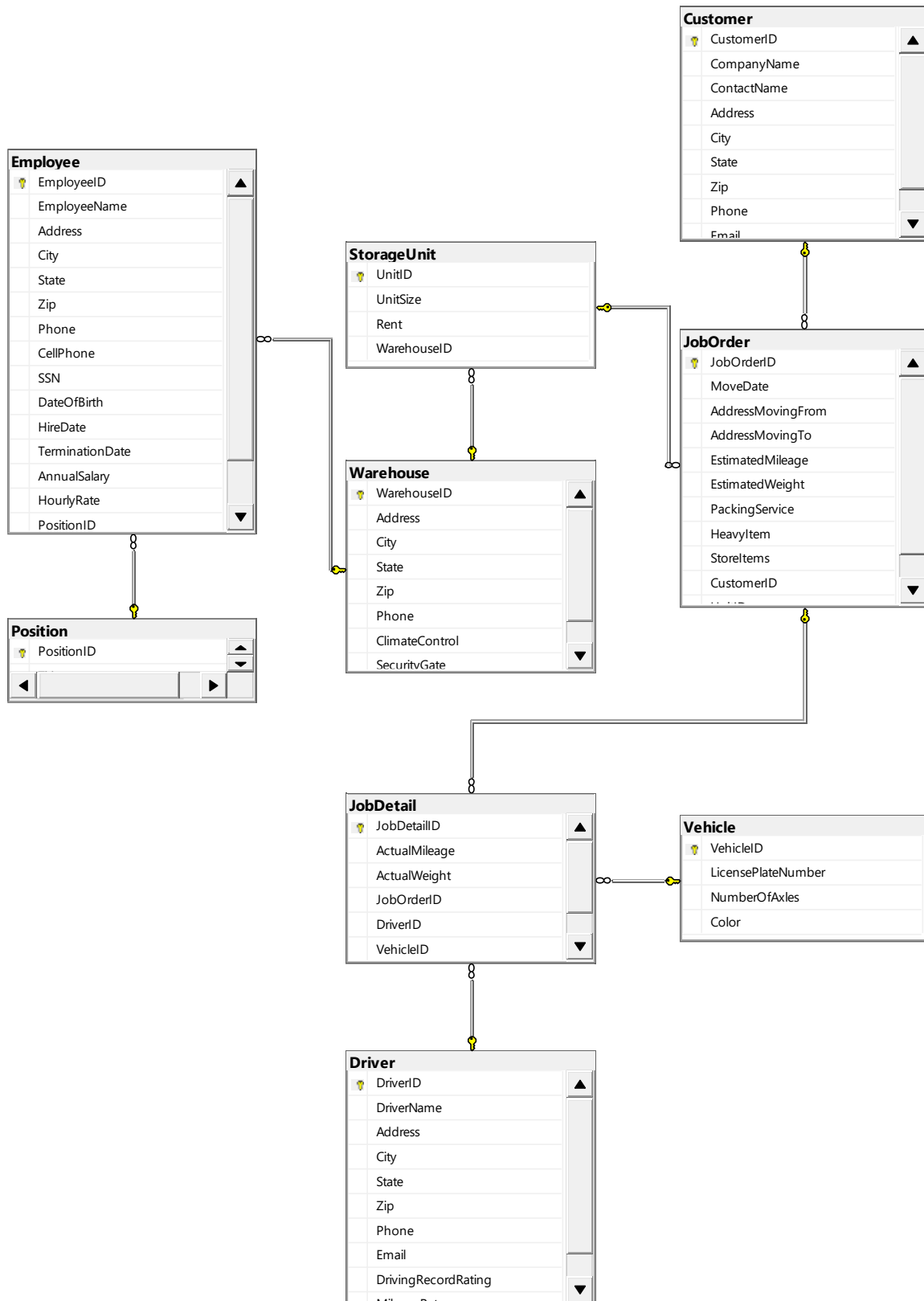| Field Name	Data Type	Field Size	Description
DriverID	INT	10	Unique identifier for each driver
DriverName	VARCHAR	100	Full name of driver
Address	VARCHAR	255	Address of driver
City	VARCHAR	100	City where driver lives
State	VARCHAR	2	State where driver lives
Zip	VARCHAR	10	Postal code where driver lives
Phone	VARCHAR	15	Phone number of driver
Email	VARCHAR	100	Email address of driver
DrivingRecordRating	CHAR	1	Safety rating of driver (A, B, C, D, F)
MileageRate	DECIMAL	10, 2	Rate per mile paid to driver

Vehicle Table
Description: Holds details of each vehicle owned by the company, including type and identification.

Field Name	Data Type	Field Size	Description
VehicleID	VARCHAR	10	Unique identifier for each vehicle (prefix TRK or VAN)
LicensePlateNumber	VARCHAR	10	License plate number of the vehicle
NumberOfAxles	INT	10	Number of axles on the vehicle
Color	VARCHAR	20	Color of the vehicle

4. Database Implementation with SQL

Refer to .txt file accompanied with this project.

5. SQL Server Database Diagram of MovinOn

Customer
- CustomerID
- CompanyName
- ContactName
- Address
- City
- State
- Zip
- Phone
- Email

Employee
- EmployeeID
- EmployeeName
- Address
- City
- State
- Zip
- Phone
- CellPhone
- SSN
- DateOfBirth
- HireDate
- TerminationDate
- AnnualSalary
- HourlyRate
- PositionID

StorageUnit
- UnitID
- UnitSize
- Rent
- WarehouseID

JobOrder
- JobOrderID
- MoveDate
- AddressMovingFrom
- AddressMovingTo
- EstimatedMileage
- EstimatedWeight
- PackingService
- HeavyItem
- StoreItems
- CustomerID

Warehouse
- WarehouseID
- Address
- City
- State
- Zip
- Phone
- ClimateControl
- SecurityGate

Position
- PositionID

JobDetail
- JobDetailID
- ActualMileage
- ActualWeight
- JobOrderID
- DriverID
- VehicleID

Vehicle
- VehicleID
- LicensePlateNumber
- NumberOfAxles
- Color

Driver
- DriverID
- DriverName
- Address
- City
- State
- Zip
- Phone
- Email
- DrivingRecordRating

6. Database Population verification

POSITION

PositionID	Title
1	[Manager]
2	Warehouse Manager
3	Administrative Assistant
4	Accountant
5	Maintenance
6	Moving Assistant
7	Information Systems

WAREHOUSE

	WarehouseID	Address	City	State	Zip	Phone	ClimateControl	SecurityGate
1	AZ-1	54781 Hixson Pike	Phoenix	AZ	85005	6238972341	1	0
2	CA-1	#3 Industrial Park Way	Fullerton	CA	90621	6577383721	1	1
3	NV-1	8798 Warehouse Rd	Las Vegas	NV	89104	7024568374	0	1

EMPLOYEE

	EmployeeID	EmployeeName	Address	City	State	Zip	Phone	CellPhone	SSN	DateOfBirth	HireDate	TerminationDate	AnnualSalary	HourlyRate	PositionID	WarehouseID
1	101	Patrick Brooks	234 Jennifer Throughway	West Paulchester	OK	75367	+10498112078	9380057719	735-48-7187	1982-07-05	2021-10-24	NULL	NULL	36.48	3	NV-1
2	102	Linda Morrison	87574 Larry Plaza	New Robert	MD	32612	0015441858052	6478518392	841-03-4617	1986-02-16	2022-09-21	NULL	31885.80	NULL	5	NV-1
3	103	Jeremy Bailey	00400 Wells Mission Suite 930	New Frank	TX	83062	9536961495	0012242677185	737-38-8080	1989-09-04	2019-08-05	NULL	88258.88	NULL	4	NV-1
4	104	Thomas Costa	267 Judy Corner Suite 308	Lake Austin	MO	24991	0018861012079	9517110142	824-23-1892	1990-07-28	2021-10-15	NULL	NULL	46.75	3	NV-1
5	105	Brian Gonzalez	935 Estes Inlet Apt. 053	North Christinabury	AL	88505	0996227192	5687915931	604-48-0886	1969-09-07	2023-09-24	NULL	48301.50	NULL	2	AZ-1
6	106	David Branch	498 Jones Center	Benjaminview	TN	79331	0019193788746	4864859571	474-50-3939	1961-10-06	2019-06-11	NULL	69990.48	NULL	4	AZ-1
7	107	Michael Alvarado	4516 Fuller Circle	Garyside	HI	89959	3320234310	1988323849	087-64-8076	1996-04-18	2021-10-27	NULL	NULL	43.90	7	NV-1
8	108	Thomas Dixon	913 Kathryn Curve Suite 043	Lanebury	WY	16908	6912280029	0013029802762	022-53-2008	1991-08-20	2022-09-02	NULL	46324.88	NULL	5	CA-1
9	109	Hannah Roberts	308 Smith Freeway Apt. 803	Johnmouth	MN	69302	4053486345	8961115645	162-03-6473	1964-08-26	2018-02-20	NULL	78000.00	NULL	1	CA-1
10	110	Samantha White	8275 Linda Loaf Suite 009	Vincentstad	VT	31540	0015589433483	3486538647	355-67-2934	1993-10-12	2020-05-15	NULL	NULL	28.50	6	AZ-1
11	111	Brandon Taylor	1920 Vista Avenue	East Michelle	AZ	85022	6025550199	6025550100	555-00-0123	1981-04-09	2019-01-01	NULL	95000.00	NULL	2	AZ-1
12	112	Megan Clarke	1130 Pecan Park	Jacksonville	FL	32034	9045550134	9045550135	555-01-2345	1975-06-15	2017-03-15	NULL	65000.00	NULL	1	CA-1
13	113	Olivia Lee	4468 E North St	Orlando	FL	32801	4075550198	4075550197	555-02-3456	1989-11-25	2020-11-01	NULL	NULL	21.50	3	NV-1
14	114	Ethan Jones	780 South St	Phoenix	AZ	85003	6235550177	6235550178	555-03-4567	1973-08-10	2018-07-10	NULL	85000.00	NULL	2	AZ-1
15	115	Isabella Martin	365 Market Rd	San Diego	CA	92101	6195550142	6195550143	555-04-5678	1984-01-05	2021-04-23	NULL	NULL	35.50	6	CA-1

CUSTOMER

	CustomerID	CompanyName	ContactName	Address	City	State	Zip	Phone	Email
1	201	Acme Corp	Alice Johnson	123 Business Blvd	Las Vegas	NV	89101	702-555-0660	alice.johnson@acme.com
2	202	NULL	Bob Smith	456 Residential Rd	Los Angeles	CA	90001	213-555-0770	bob.smith@gmail.com
3	203	Beta LLC	Chris Green	789 Commercial Ave	San Francisco	CA	94105	415-555-0880	chris.green@beta.com
4	204	NULL	Diana White	321 Lakeside Ct	Reno	NV	89501	775-555-0990	diana.white@gmail.com
5	205	Gamma Inc	Eva Brown	654 Mountain View	Phoenix	AZ	85001	602-555-0110	eva.brown@gamma.com
6	206	NULL	Frank Moore	987 East St	Las Vegas	NV	89101	702-555-0220	frank.moore@gmail.com
7	207	Delta Services	Grace Hall	234 West Ave	San Diego	CA	92101	619-555-0330	grace.hall@delta.com
8	208	NULL	Henry Murphy	567 South Blvd	Tucson	AZ	85701	520-555-0440	henry.murphy@gmail.com
9	209	Epsilon Ltd	Irene Taylor	890 North Circle	Sacramento	CA	95814	916-555-0550	irene.taylor@epsilon.com
10	210	NULL	Jason Lee	1234 Park Lane	Reno	NV	89501	775-555-0661	jason.lee@gmail.com
11	211	Zeta Co	Kathy Young	4321 Oak Dr	Phoenix	AZ	85001	602-555-0771	kathy.young@zeta.com
12	212	NULL	Larry Foster	8765 Elm St	Las Vegas	NV	89101	702-555-0881	larry.foster@gmail.com
13	213	Eta Corp	Michelle Gomez	6789 Pine Rd	San Francisco	CA	94105	415-555-0991	michelle.gomez@eta.com
14	214	NULL	Nick Howard	1357 Willow Path	Reno	NV	89501	775-555-0111	nick.howard@gmail.com
15	215	Theta Inc	Olivia Sanders	2468 Spruce Way	San Diego	CA	92101	619-555-0221	olivia.sanders@theta.com

JOBORDER

	JobOrderID	MoveDate	AddressMovingFrom	AddressMovingTo	EstimatedMileage	EstimatedWeight	PackingService	HeavyItem	StoreItems	CustomerID	UnitID
1	401	2023-11-22	16997 Mark Garden Apt. 322\nNorth Melissaborough...	Unit 7416 Box 1691\nDPO AA 71801	138	3433	1	0	1	209	301
2	402	2023-12-25	328 Pruitt Ports\nBatesbury, OH 26820	70055 Jacob Point Suite 225\nSmithstad, LA 43719	69	9452	1	1	1	201	303
3	403	2023-10-04	409 Kelly Coves Apt. 542\nAmyport, KY 17523	62582 Lewis Expressway\nLake Latasha, ID 58792	232	911	0	1	0	204	NULL
4	404	2023-12-02	29415 Thomas Heights\nCarpenterborough, NJ 41039	316 Norman Radial\nAshleyberg, DE 05999	234	4728	1	1	0	212	NULL
5	405	2024-04-06	105 Michael Viaduct Apt. 257\nSeanton, IL 92239	405 Richard Shores Suite 813\nWest Andrewville, SC 2...	185	5655	0	0	0	202	NULL
6	406	2023-08-14	49707 Murphy Road\nBirdview, RI 90786	031 Taylor Radial Apt. 219\nWilsonchester, ID 02414	306	3927	1	0	1	213	304
7	407	2024-04-21	61468 Jose Rest\nWest Matthew, NY 31851	USS Good\nFPO AP 95351	46	9094	0	0	1	212	305
8	408	2023-10-22	0352 Elizabeth Run Apt. 273\nTimothymouth, NH 61...	USCGC Spence\nFPO AE 61638	86	320	0	0	0	215	NULL
9	409	2023-08-03	284 Zachary Alley\nBrownstad, LA 05299	50497 Ryan Street\nNorth Casey, ID 06280	63	5176	1	1	1	211	306
10	410	2023-10-18	Unit 4492 Box 7744\nDPO AP 50031	115 Thompson Heights Suite 855\nMurphyburgh, DC ...	408	2042	1	0	0	213	NULL
11	411	2023-09-04	6244 Stephanie Manor\nPort Amanda, AZ 85885	13391 Shannon Parkway Apt. 605\nMartinezside, OH ...	294	4429	1	0	1	215	307
12	412	2024-03-13	29240 Melanie Spurs\nShanefort, NE 01808	5261 John Courts Apt. 235\nNew Christybury, NV 43545	313	3987	0	0	0	206	NULL
13	413	2023-10-22	2562 Kenneth Keys\nEast Sandra, NY 48420	74237 Vazquez Trafficway Apt. 266\nSouth Sarabury, T...	181	5160	0	0	0	203	NULL
14	414	2024-02-10	43840 Nicole Viaduct Apt. 722\nNorth Bethtown, GA 5...	9463 Brandon Isle\nLisafort, OK 68133	394	7380	1	0	0	209	NULL
15	415	2023-05-30	02301 Williams Plains\nGonzalezton, WY 05113	248 Fernandez Meadow Suite 708\nKruegerville, NE 0...	36	5242	0	1	1	212	308

DRIVER

	DriverID	DriverName	Address	City	State	Zip	Phone	Email	DrivingRecordRating	MileageRate
1	501	Joshua Henry	10736 Grace Shoal Apt. 719\nNorth Thomas, NM 60574	Lake Cynthiatown	UT	31847	+1-819-120-9636x56022	jessica94@johnson.com	B	2.78
2	502	Amanda Edwards	9504 Jacqueline Place Apt. 462\nWashingtonshire, GA...	South Michaelchester	WI	73209	132-599-8066	christinafigueroa@payne.biz	D	1.45
3	503	Belinda Carter	2364 Quinn Ways Apt. 407\nStoneville, MN 59595	Rogersfort	CA	86931	737-843-0278x24890	josegreene@bowers.biz	D	2.90
4	504	Kathryn Benson	29532 Juan Summit Apt. 433\nWest Markton, MT 72178	Richardsstad	NM	20733	142.545.8709x349	toddmills@gardner.com	A	1.28
5	505	Patrick Porter	6361 John Knolls Suite 709\nLake Heather, DE 17102	Hamiltonton	IN	67832	458-649-0248x742	riveramichael@johnson.org	F	2.26
6	506	David Drake	13886 Samantha Ranch\nWest Nicole, MO 19789	East Stephaniestad	NV	32662	001-078-417-3073x372	brandon34@yahoo.com	D	0.51
7	507	Greg Morales	70235 John Mall Apt. 847\nJimport, OH 04110	Port Lisamouth	AK	54663	020-181-3266x976	heidi12@schwartz.com	C	1.99
8	508	Rebecca Doyle	66406 Cook Lock Apt. 219\nSouth Nicole, GA 69599	Lake Christine	SC	73546	096-837-4600	juliejohnson@yahoo.com	B	1.99
9	509	Jon Brown	04517 Tyler Cliffs\nNorth Mary, IN 64565	East Jennifer	NV	00505	589-346-0039x765	dibarra@mcpherson.biz	A	1.50
10	510	Donald Walton	356 Michael Dam Apt. 766\nVickiport, UT 05257	North Annettefort	MT	57605	001-681-203-6742x99526	bjohnson@johnson-wong.com	C	1.89
11	511	Jesse Graham	58872 Jeremy Parks Apt. 034\nNew Christopherburgh,...	Rubioville	NH	87450	6526302383	brianna76@cooper.com	D	1.20
12	512	Spencer Miranda	3749 Lauren Key\nSouth Mariahaven, IA 81073	East Ashley	CA	20444	(240)283-7728x637	simmonstroy@guerra.net	C	2.39
13	513	Rhonda Rogers	258 Novak Avenue Apt. 676\nWest Lauren, DC 08818	New Stephanieburgh	TX	42994	353-365-0209x093	david10@yahoo.com	F	2.96
14	514	Brittany Bennett	8428 Carl Ranch\nNorth Briannastad, AK 33333	Port Sheriview	OH	55896	4863294864	scotttraci@hotmail.com	F	1.14
15	515	Jose King	404 Cesar Cliff Apt. 149\nNorth Zacharyhaven, CA 31565	North Saraside	TN	42477	+1-188-789-5541x97691	mjackson@hotmail.com	F	2.67

VEHICLE

	VehicleID	LicensePlateNumber	NumberOfAxles	Color
1	TRK-001	4JTY328	2	Blue
2	TRK-003	3SGR213	3	Green
3	TRK-005	5FDR798	4	White
4	TRK-007	1SGT234	3	Blue
5	TRK-009	9HGB768	4	Green
6	TRK-011	8JNB234	3	White
7	TRK-013	4FRG321	3	Blue
8	TRK-015	6YUH567	4	Green
9	VAN-002	7BVC920	2	Red
10	VAN-004	8HGT524	2	Black
11	VAN-006	6ERT302	2	Silver
12	VAN-008	2FDR456	2	Red
13	VAN-010	0RGV435	2	Black
14	VAN-012	3HGT678	2	Silver
15	VAN-014	7DFR453	2	Red

JOBDETAIL

	JobDetailID	ActualMileage	ActualWeight	JobOrderID	DriverID	VehicleID
1	601	120	2000	401	501	TRK-001
2	602	150	2500	402	502	VAN-002
3	603	90	1800	403	503	TRK-003
4	604	200	3500	404	504	VAN-004
5	605	300	4500	405	505	TRK-005
6	606	140	2200	406	506	VAN-006
7	607	160	2400	407	507	TRK-007
8	608	80	1600	408	508	VAN-008
9	609	250	3000	409	509	TRK-009
10	610	180	2800	410	510	VAN-010
11	611	170	2600	411	511	TRK-011
12	612	100	1900	412	512	VAN-012
13	613	220	3200	413	513	TRK-013
14	614	130	2100	414	514	VAN-014
15	615	190	2900	415	515	TRK-015

STORAGEUNIT

	UnitID	UnitSize	Rent	WarehouseID
1	301	10x20	265.22	CA-1
2	302	10x5	333.10	AZ-1
3	303	10x15	463.12	AZ-1
4	304	10x20	224.31	AZ-1
5	305	10x15	477.59	CA-1
6	306	10x15	229.24	CA-1
7	307	15x10	56.42	NV-1
8	308	20x10	481.71	NV-1
9	309	5x10	191.31	AZ-1
10	310	15x10	207.86	CA-1
11	311	10x20	132.11	CA-1
12	312	15x15	414.94	CA-1
13	313	5x15	276.04	AZ-1
14	314	10x20	124.55	NV-1
15	315	15x15	98.80	AZ-1

7. Database Scripts to Verify Dummy Data Integrity

For the month of December:

--List Balance due from each customer on a specific month

	CustomerID	ContactName	BalanceDue
1	201	Alice Johnson	3713.17
2	212	Larry Foster	1875.52

--Listing Drivers and their corresponding job details

	DriverID	DriverName	JobDetailID	ActualMileage	ActualWeight	JobOrderID	VehicleID
1	501	Joshua Henry	601	120	2000	401	TRK-001
2	502	Amanda Edwards	602	150	2500	402	VAN-002
3	503	Belinda Carter	603	90	1800	403	TRK-003
4	504	Kathryn Benson	604	200	3500	404	VAN-004
5	505	Patrick Porter	605	300	4500	405	TRK-005
6	506	David Drake	606	140	2200	406	VAN-006
7	507	Greg Morales	607	160	2400	407	TRK-007
8	508	Rebecca Doyle	608	80	1600	408	VAN-008
9	509	Jon Brown	609	250	3000	409	TRK-009
10	510	Donald Walton	610	180	2800	410	VAN-010
11	511	Jesse Graham	611	170	2600	411	TRK-011
12	512	Spencer Miranda	612	100	1900	412	VAN-012
13	513	Rhonda Rogers	613	220	3200	413	TRK-013
14	514	Brittany Bennett	614	130	2100	414	VAN-014
15	515	Jose King	615	190	2900	415	TRK-015

--Listing the storage units that are still available

	UnitID	UnitSize	Rent	WarehouseID
1	302	10x5	333.10	AZ-1
2	309	5x10	191.31	AZ-1
3	310	15x10	207.86	CA-1
4	311	10x20	132.11	CA-1
5	312	15x15	414.94	CA-1
6	313	5x15	276.04	AZ-1
7	314	10x20	124.55	NV-1
8	315	15x15	98.80	AZ-1

--Calculating amount due to each driver

	DriverID	DriverName	AmountDue
1	502	Amanda Edwards	174.0000
2	504	Kathryn Benson	256.0000

--Listing net revenue after employees have been paid out

	MoveDate	NetRevenue
1	2023-12-02	256.000000
2	2023-12-25	637.120000

8. Q & A

1. Why is Normalization Important When Defining a Database Design?

When arguing for normalization, it is better to understand the detriments of non-normalization for database design. Common problems in a non-normalized database include duplicate data, leading to update anomalies, inefficient and more prolonged than necessary SQL queries, and inconsistent and messy databases. Normalization prevents all of this from happening, ensuring the integrity and quality of our data and making it accessible, scalable, and simplistic.

2. How Do You Validate a Proposed Database Design Model Before Implementation?

The three best things you can do to ensure your database functions after implementation are visualization, prototyping, and peer review. Visualizing ensures that your database is connected and compact and can show where holes are in your database design that are fixable before prototyping. Prototyping further insulates your database from error by providing examples of how your database will look in a real-world scenario. Although it can be tedious, it's worth the extra work so you won't tear your hair out in the future! Finally, your peers can help you see things you might miss in your database design. Their unique insights may help you spot errors you may have missed, and you can help them with yours.

3. What Challenges Did You Face During This Database Course?

The most complex challenge I faced was troubleshooting when your SQL syntax (very often) went wrong and the implementation of complex querying. Another challenge I faced was understanding the concept of normalization and crow's foot notation. Remedies to these challenges include visualization to develop a solid foundation of what normalization looks like. For SQL syntax, the only real thing that allows you to overcome these is learning and doing the practice necessary to make it all fit together.

4. What Would Be Your Advice to Future ISDS 402 Students?

Practice, practice, practice. There are so many resources that can help you understand SQL. When confused, I often turned to LinkedIn Learning to see if I could understand a concept differently if the material needed to be clarified. Many resources, such as LinkedIn Learning, are free for students through our campus IT helpdesk. It may sometimes seem hard or impossible to learn what we need to, but no problem cannot be solved, and time can either be your greatest ally or your worst enemy!