



ASSIGNMENT #2: DATA MODELING AND DESIGN

CST2355 Database Systems

Section 451

Caitlin Ross #040750891
ross0272@algonquinlive.com

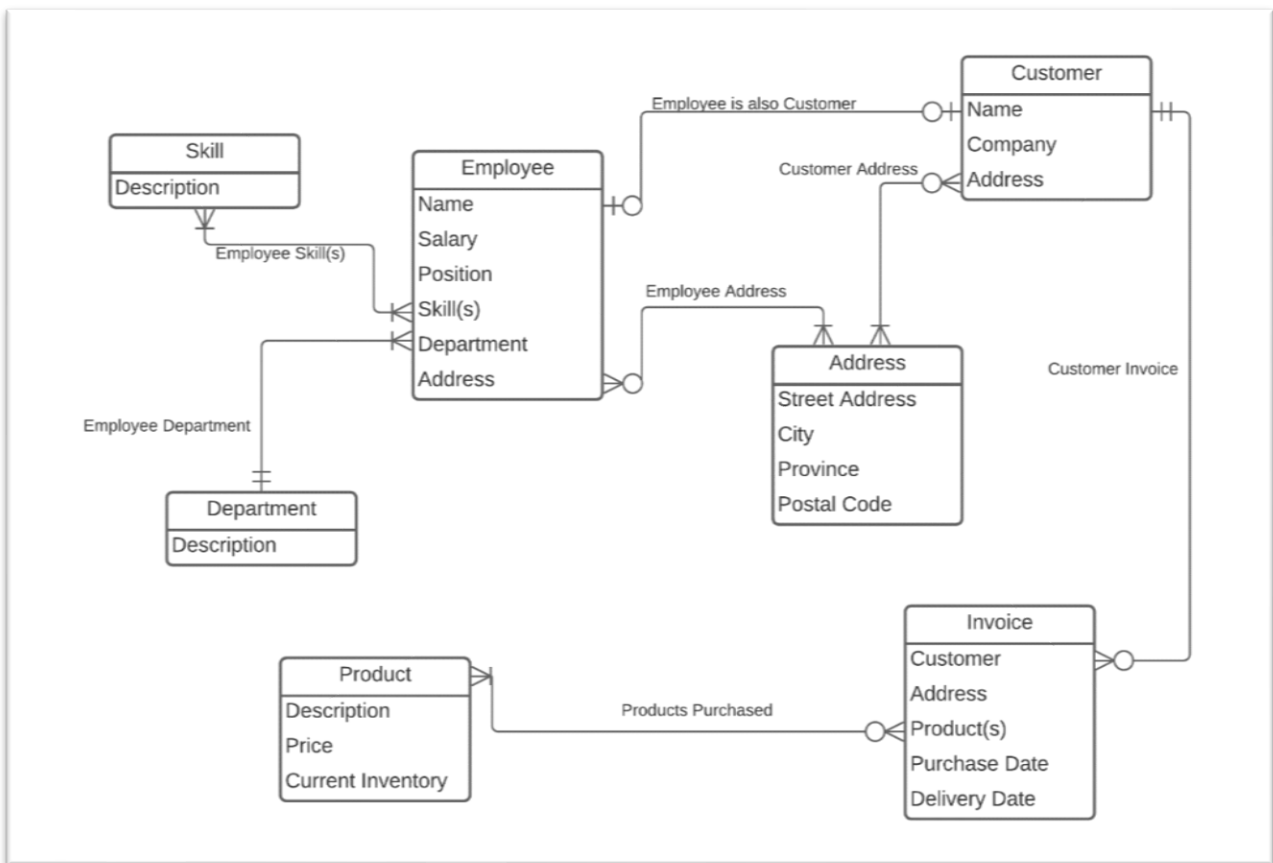
Contents

Data Model.....	3
Transformation Decisions.....	4
Table Characteristics.....	5
EMPLOYEE Table.....	5
EMPLOYEE_SKILL Table.....	5
CUSTOMER Table.....	5
ADDRESS Table.....	6
PURCHASE Table.....	6
PRODUCT Table.....	6
Report Queries.....	7
Employee Salary Report.....	7
Employee is Customer Report.....	9
Latest Year Monthly Purchases Report.....	10
Competency Tracking Report.....	13
Microsoft SQL Server Database Design.....	14
Database Design Diagram.....	14
Tables and Data.....	15
EMPLOYEE Table.....	15
EMPLOYEE_SKILL Table.....	16
CUSTOMER Table.....	16
ADDRESS Table.....	17
PRODUCT Table.....	18
PURCHASE Table.....	19
Oracle Database Design.....	20
Database Design Diagram.....	20
Tables and Data.....	21
EMPLOYEE Table.....	21
EMPLOYEE_SKILL Table.....	22
CUSTOMER Table.....	23
ADDRESS Table.....	24
PRODUCT Table.....	25
PURCHASE Table.....	26
MySQL Database Design.....	27

Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

Database Design Diagram	27
Tables and Data	28
EMPLOYEE Table	28
EMPLOYEE_SKILL Table	29
CUSTOMER Table.....	29
ADDRESS Table.....	30
PRODUCT Table.....	31
PURCHASE Table.....	32
Appendix 1: Misc. Assumptions and Notes.....	33
Data Cleanup and Analysis.....	33
Creating and Populating Databases	33
Other	33

Data Model



- *Note:* LucidChart was the software/website used to create this model
- *Note:* I chose not to use identifiers in the data model in order to keep it conceptual. Identifiers will be chosen or created later when creating the database design.
- *Assumption:* Similar to other e-commerce websites, I assumed that customers (and employees) could have multiple address and multiple invoices. I also assumed that a customer could be created before purchasing anything. These would have to be validated by the business requirements.
- *Assumption:* While employees can have many skills, I assumed they must have at least one in order to be hired. I also assumed that the business would not need to track skills that no employees have. Similarly, I assumed that all departments must have at least one employee, but employees can only belong to one department. These assumptions would have to be validated by the business requirements.

Transformation Decisions

Entity/Relationship	Table/Relationship	Explanation
Employee	Employee	Add EmployeeID as surrogate key
Customer	Customer	Add CustomerID as surrogate key
Address	Address	Add AddressID as surrogate key
Invoice	None	Invoices don't seem to be relevant to this business, simplify to just Products Purchased
Product	Product	Add SKU as surrogate key
Skill	EmployeeSkill	Simplify from entity AND relation to just the relation
Department	Employee	Add to Employee table as a field, use constraints to prevent update anomalies
Employee is also Customer	None	Find Name + Address matches, no relation needed
Employee Skill(s)	EmployeeSkill	Use name of skill as identifier, use constraints to prevent update anomalies
Employee Department	Employee	Add to Employee table as a field, use constraints to prevent update anomalies
Employee Address	None	Use AddressID in Employee table
Customer Address	None	Use AddressID in Customer table
Provincial Tax Rate	None	No relation needed, province can be PK in Tax table and FK in Address table
Customer Invoice	None	Not needed without Invoice entity
Products Purchased	Purchase	Encompasses the Invoice entity as well, address not needed here

Table Characteristics

EMPLOYEE Table

Column	Key	NULL?	Default	Oracle Data Type	SQL Server Data Type	MySQL Data Type
EmployeeID	PK	No	Auto Increment	NUMBER (12,0)	SmallInt	SMALLINT (4)
FirstName		No		VARCHAR2 (50)	Varchar (50)	VARCHAR (50)
LastName		No		VARCHAR2 (50)	Varchar (50)	VARCHAR (50)
Salary		No	0.00	NUMBER (12,2)	Small Money	DECIMAL (8,2)
Position		No		VARCHAR2 (50)	Varchar (50)	VARCHAR (50)
Department		No		VARCHAR2 (50)	Varchar (50)	VARCHAR (50)
AddressID	FK	No		NUMBER (12,0)	SmallInt	SMALLINT (4)

EMPLOYEE_SKILL Table

Column	Key	NULL?	Default	Oracle Data Type	SQL Server Data Type	MySQL Data Type
EmployeeID	FK	No	Auto Increment	NUMBER (12,0)	SmallInt	SMALLINT (4)
Skill		No		VARCHAR2 (50)	Varchar (50)	VARCHAR (50)

CUSTOMER Table

Column	Key	NULL?	Default	Oracle Data Type	SQL Server Data Type	MySQL Data Type
CustomerID	PK	No	Auto Increment	NUMBER (12,0)	SmallInt	SMALLINT (4)
FirstName		No		VARCHAR2 (50)	Varchar (50)	VARCHAR (50)
LastName		No		VARCHAR2 (50)	Varchar (50)	VARCHAR (50)
Company		Yes		VARCHAR2 (128)	Varchar (128)	VARCHAR (128)
AddressID	FK	No		NUMBER (12,0)	SmallInt	SMALLINT (4)

Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

ADDRESS Table

Column	Key	NULL?	Default	Oracle Data Type	SQLServer Data Type	MySQL Data Type
AddressID	PK	No	Auto Increment	NUMBER (12,0)	SmallInt	SMALLINT (4)
StreetAddress		No		VARCHAR2 (128)	Varchar (128)	VARCHAR (128)
City		No		VARCHAR2 (50)	Varchar (50)	VARCHAR (50)
Province	FK	No		CHAR (2)	Char (2)	CHAR (2)
PostalCode		No		CHAR (6)	Char (6)	CHAR (6)

PURCHASE Table

Column	Key	NULL?	Default	Oracle Data Type	SQL Server Data Type	MySQL Data Type
CustomerID	FK	No		NUMBER (12,0)	SmallInt	SMALLINT (4)
SKU	FK	No		NUMBER (12,0)	SmallInt	SMALLINT (5)
PurchaseDate		No		DATE	Date	DATE
DeliveryDate		Yes		DATE	Date	DATE

PRODUCT Table

Column	Key	NULL?	Default	Oracle Data Type	SQL Server Data Type	MySQL Data Type
SKU	PK	No	Auto Increment	NUMBER (12,0)	SmallInt	SMALLINT (5)
Name		No	'Unknown'	VARCHAR2 (50)	Varchar (50)	VARCHAR (50)
Price		No	0.00	NUMBER (12,2)	Small Money	DECIMAL (6,2)
CurrentInventory		No	0	NUMBER (12,0)	SmallInt	SMALLINT (3)

Report Queries

Employee Salary Report

ANSI SQL Statement

```
SELECT
  CONCAT_WS(' ', EMPLOYEE.FirstName, EMPLOYEE.LastName)
    AS FullName,
  CONCAT('$', FORMAT(EMPLOYEE.Salary, 2))
    AS Salary,
  CONCAT('$', FORMAT((DAYOFYEAR(CURDATE())/365) * EMPLOYEE.Salary, 2))
    AS YTD Earnings,
  CONCAT('$', FORMAT((DAYOFYEAR(CURDATE())/365) * EMPLOYEE.Salary*a.TaxRate, 2))
    AS YTD Tax Deducted,
  CONCAT_WS(' ', a.StreetAddress, a.City, a.Province, a.PostalCode)
    AS FullAddress,
  EMPLOYEE.Department
FROM EMPLOYEE
INNER JOIN
  (SELECT
    ADDRESS.AddressID,
    ADDRESS.StreetAddress,
    ADDRESS.City,
    ADDRESS.Province,
    ADDRESS.PostalCode,
    TAX.TaxRate
  FROM ADDRESS
  INNER JOIN TAX
  ON ADDRESS.Province = TAX.Province
  ) a
ON EMPLOYEE.AddressID = a.AddressID;
```

MySQL Differences

- None

Oracle Differences

- Lines 13, 22, 23: Add ASSIGN_2. before all table names
- Line 2: Use concatenation operator instead of `CONCAT_WS` function:
`EMPLOYEE.FirstName||' '||EMPLOYEE.LastName`
- Line 4: Use `TO_CHAR` instead of `CONCAT` and `FORMAT` functions:
`TO_CHAR(EMPLOYEE.Salary, '$9,999,999.99')`
- Line 6: Same changes as Line 4. Also, use `SYSDATE` and `TRUNC` functions to prorate the salary: `TO_CHAR((SYSDATE-(TRUNC(SYSDATE, 'YYYY')))/365*EMPLOYEE.Salary, '$9,999,999.99')`
- Line 8: Same changes as Line 6: `TO_CHAR((SYSDATE-(TRUNC(SYSDATE, 'YYYY')))/365*EMPLOYEE.Salary*a.TaxRate, '$9,999,999.99')`
- Line 10: Same changes as Line 2: `a.StreetAddress||', '||a.City||' '||a.Province||', '||a.PostalCode`

SQL Server Differences

- Line 4: Drop the `CONCAT` function and just use the `FORMAT` function for currency:
`FORMAT(EMPLOYEE.Salary, 'C', 'en-us')`
- Line 6: Same changes as line 4. Also, use `GETDATE`, `YEAR` and `DATEFROMPARTS` functions to get the first day of the current year, use `DATEDIFF` to return the number of days since Jan 1st, then use in the equation to prorate the salary: `((DATEDIFF(day, DATEFROMPARTS(YEAR(GETDATE()), 1, 1), GETDATE())/365)*EMPLOYEE.Salary, 'C', 'en-us')`
- Line 8: Same changes as Line 6: `FORMAT((DATEDIFF(day, DATEFROMPARTS(YEAR(GETDATE()), 1, 1), GETDATE())/365)*EMPLOYEE.Salary*a.TaxRate, 'C', 'en-us')`
- *Note:* Values in YTD Earnings and YTD Tax Deducted columns are returning \$0.00 in SQL Server, probably a casting or order of operations error

Employee is Customer Report

ANSI SQL Statement

```
SELECT
  emp.FullName,
  custpurch.Name AS Product,
  custpurch.Price,
  COUNT(custpurch.Name) AS NumberPurchased
FROM
  (SELECT
    CUSTOMER.CustomerID,
    CUSTOMER.AddressID,
    prod.Name,
    prod.Price,
    prod.SKU
  FROM
    (SELECT
      PRODUCT.SKU,
      PRODUCT.Name,
      PRODUCT.Price,
      PURCHASE.CustomerID
    FROM PURCHASE
    INNER JOIN PRODUCT
    ON PURCHASE.SKU = PRODUCT.SKU
    ) prod
  INNER JOIN CUSTOMER
  ON prod.CustomerID = CUSTOMER.CustomerID
  ) custpurch
INNER JOIN
  (SELECT
    CONCAT_WS(' ', FirstName, LastName) AS FullName,
    AddressID
  FROM EMPLOYEE) emp
ON custpurch.AddressID = emp.AddressID
GROUP BY emp.FullName, custpurch.Name, custpurch.Price
ORDER BY emp.FullName;
```

MySQL Differences

- None

Oracle Differences

- Lines 8, 9, 15- 21, 23, 24, 30: Add ASSIGN_2. before all table names
- Line 28: Use concatenation operator instead of CONCAT_WS function: FirstName||' '||LastName

SQL Server Differences

- None

Latest Year Monthly Purchases Report

ANSI SQL Statement

```
SELECT
  AllSales.Province,
  AllSales.Name,
  COUNT(JanSales.PurchaseDate) AS 'Jan Sales',
  COUNT(FebSales.PurchaseDate) AS 'Feb Sales',
  COUNT(MarSales.PurchaseDate) AS 'Mar Sales',
  COUNT(AprSales.PurchaseDate) AS 'Apr Sales',
  COUNT(MaySales.PurchaseDate) AS 'May Sales',
  COUNT(JunSales.PurchaseDate) AS 'Jun Sales',
  COUNT(JulSales.PurchaseDate) AS 'Jul Sales',
  COUNT(AugSales.PurchaseDate) AS 'Aug Sales',
  COUNT(SepSales.PurchaseDate) AS 'Sep Sales',
  COUNT(OctSales.PurchaseDate) AS 'Oct Sales',
  COUNT(NovSales.PurchaseDate) AS 'Nov Sales',
  COUNT(DecSales.PurchaseDate) AS 'Dec Sales',
  COUNT(AllSales.PurchaseDate) AS 'Total Sales'
FROM
  (SELECT destination.Province, sales.Name, sales.PurchaseDate
   FROM
     (SELECT CUSTOMER.CustomerID, ADDRESS.Province
      FROM CUSTOMER RIGHT JOIN ADDRESS
      ON CUSTOMER.AddressID = ADDRESS.AddressID
     ) destination
   JOIN
     (SELECT PURCHASE.CustomerID, PRODUCT.Name, PURCHASE.PurchaseDate
      FROM PRODUCT LEFT JOIN PURCHASE
      ON PRODUCT.SKU = PURCHASE.SKU
     ) sales
   ON destination.CustomerID = sales.CustomerID
  ) AllSales
LEFT JOIN
  (SELECT PURCHASE.CustomerID, PURCHASE.PurchaseDate
   FROM PURCHASE WHERE MONTH(PURCHASE.PurchaseDate)=1
  ) JanSales
ON AllSales.PurchaseDate = JanSales.PurchaseDate
LEFT JOIN
  (SELECT PURCHASE.CustomerID, PURCHASE.PurchaseDate
   FROM PURCHASE WHERE MONTH(PURCHASE.PurchaseDate)=2
  ) FebSales
ON AllSales.PurchaseDate = FebSales.PurchaseDate
LEFT JOIN
  (SELECT PURCHASE.CustomerID, PURCHASE.PurchaseDate
   FROM PURCHASE WHERE MONTH(PURCHASE.PurchaseDate)=3
  ) MarSales
ON AllSales.PurchaseDate = MarSales.PurchaseDate
LEFT JOIN
  (SELECT PURCHASE.CustomerID, PURCHASE.PurchaseDate
```

Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

```
FROM PURCHASE WHERE MONTH(PURCHASE.PurchaseDate)=4
) AprSales
ON AllSales.PurchaseDate = AprSales.PurchaseDate
LEFT JOIN
(SELECT PURCHASE.CustomerID, PURCHASE.PurchaseDate
FROM PURCHASE WHERE MONTH(PURCHASE.PurchaseDate)=5
) MaySales
ON AllSales.PurchaseDate = MaySales.PurchaseDate
LEFT JOIN
(SELECT PURCHASE.CustomerID, PURCHASE.PurchaseDate
FROM PURCHASE WHERE MONTH(PURCHASE.PurchaseDate)=6
) JunSales
ON AllSales.PurchaseDate = JunSales.PurchaseDate
LEFT JOIN
(SELECT PURCHASE.CustomerID, PURCHASE.PurchaseDate
FROM PURCHASE WHERE MONTH(PURCHASE.PurchaseDate)=7
) JulSales
ON AllSales.PurchaseDate = JulSales.PurchaseDate
LEFT JOIN
(SELECT PURCHASE.CustomerID, PURCHASE.PurchaseDate
FROM PURCHASE WHERE MONTH(PURCHASE.PurchaseDate)=8
) AugSales
ON AllSales.PurchaseDate = AugSales.PurchaseDate
LEFT JOIN
(SELECT PURCHASE.CustomerID, PURCHASE.PurchaseDate
FROM PURCHASE WHERE MONTH(PURCHASE.PurchaseDate)=9
) SepSales
ON AllSales.PurchaseDate = SepSales.PurchaseDate
LEFT JOIN
(SELECT PURCHASE.CustomerID, PURCHASE.PurchaseDate
FROM PURCHASE WHERE MONTH(PURCHASE.PurchaseDate)=10
) OctSales
ON AllSales.PurchaseDate = OctSales.PurchaseDate
LEFT JOIN
(SELECT PURCHASE.CustomerID, PURCHASE.PurchaseDate
FROM PURCHASE WHERE MONTH(PURCHASE.PurchaseDate)=11
) NovSales
ON AllSales.PurchaseDate = NovSales.PurchaseDate
LEFT JOIN
(SELECT PURCHASE.CustomerID, PURCHASE.PurchaseDate
FROM PURCHASE WHERE MONTH(PURCHASE.PurchaseDate)=12
) DecSales
ON AllSales.PurchaseDate = DecSales.PurchaseDate
WHERE YEAR(AllSales.PurchaseDate) = YEAR(CURDATE())
GROUP BY AllSales.Province, AllSales.Name
ORDER BY AllSales.Province, AllSales.Name;
```

MySQL Differences

- None

Oracle Differences

- Lines 4-16: Use double quotes for aliases instead of single. Ex:
`COUNT(JanSales.PurchaseDate) AS "Jan Sales"`
- Lines 21, 26, 33, 38, 43, 48, 53, 58, 63, 68, 73, 78, 83, 88: Add ASSIGN_2 before all table names
- Lines 33, 38, 43, 48, 53, 58, 63, 68, 73, 78, 83, 88: Use `EXTRACT` function with `MONTH` argument instead of `MONTH` function. Ex: `WHERE EXTRACT(MONTH FROM PURCHASE.PurchaseDate)=1`
- Line 91: Use `EXTRACT` function with `YEAR` argument instead of `YEAR` function. Also use `SYSDATE` function instead of `CURDATE` function: `WHERE EXTRACT(YEAR FROM AllSales.PurchaseDate) = EXTRACT(YEAR FROM SYSDATE)`

SQL Server Differences

- Line 91: Use `GETDATE` function instead of `CURDATE`: `WHERE YEAR(AllSales.PurchaseDate) = YEAR(GETDATE())`

Competency Tracking Report

ANSI SQL Statement

```
SELECT  
  Skill,  
  COUNT(EmployeeID)  
    AS 'Number of Employees'  
FROM EMPLOYEE_SKILL  
GROUP BY Skill;
```

MySQL Differences

- None

Oracle Differences

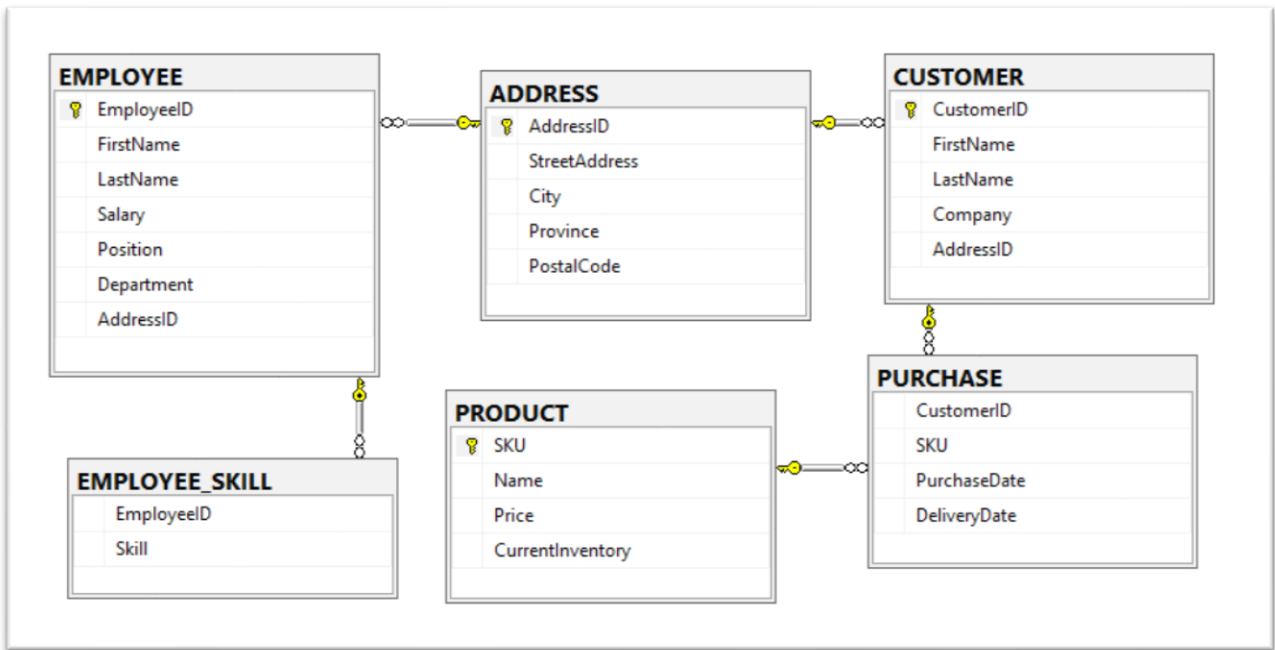
- Line 4: Use double quotes instead of single for alias: AS "Number of Employees"
- Line 5: Add ASSIGN_2. before all table names: FROM ASSIGN_2.EMPLOYEE_SKILL

SQL Server Differences

- None

Microsoft SQL Server Database Design

Database Design Diagram



Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

Tables and Data

EMPLOYEE Table

EmployeeID	FirstName	LastName	Salary	Position	Department	AddressID
1	Hui	Portaro	71552.00	Accountant	Finance	1
2	Josefa	Opitz	105107.00	Accountant	Finance	2
3	Lea	Steinhaus	77421.00	Accountant	Finance	3
4	Paola	Vielma	115908.00	Accountant	Finance	4
5	Hortencia	Bresser	47153.00	Accounts Clerk	Finance	5
6	Leanna	Tijerina	64667.00	Accounts Clerk	Finance	6
7	Crissy	Pacholec	136819.00	Actuary	Finance	7
8	Gianna	Branin	196144.00	Actuary	Finance	8
9	Ilona	Dudash	43983.00	Admin	Front desk	9
10	Valentin	Billa	35944.00	Admin	Front desk	10
11	Lauryn	Randol	45784.00	Admin Assistant	Operations	11
12	Willard	Lablanc	43604.00	Admin Assistant	Operations	12
13	Laurena	Begin	47529.00	Admin Level 1	Human Resources	13
14	Elise	Michelle	58373.00	Admin Level 2	Human Resources	14
15	Comie	Kardell	54990.00	Admin Level 3	Human Resources	15
16	Kimberely	Rabuse	65541.00	Admin Level 3	Human Resources	16
17	Hollis	Starfield	85567.00	Admin Level 5	Human Resources	17
18	Tish	Violett	64863.00	Admin Level 5	Human Resources	18
19	Dell	Polino	104132.00	Advertising Manager	Marketing and Sales	19
20	Felton	Yafuso	70895.00	Advertising Manager	Marketing and Sales	20
21	Tambra	Lembke	73201.00	Advertising Specialist	Marketing and Sales	21
22	Andree	Christmann	42435.00	Clerk	Operations	22
23	Apolonia	Wame	51681.00	Clerk	Admin	23
24	Lyla	Fucillo	47179.00	Clerk	Operations	24
25	Hannah	Edmison	44077.00	Education	Training and Education	25
26	Lourdes	Bauswell	40926.00	Education	Training and Education	26
27	Bamey	Hagen	99207.00	Engineer	Software Services	27
28	Belen	Nelton	133526.00	Engineer	Software Services	28
29	Lenita	Darbro	75029.00	Engineer	Software Services	29
30	Matthew	Amacost	73412.00	Engineer	Software Services	30
31	Danilo	Pride	34736.00	Junior Analyst	Software Services	31
32	Huey	Marcille	36624.00	Junior Analyst	Software Services	32
33	Nohemi	Leko	58258.00	Media Planner	Marketing and Sales	33
34	Francoise	Rautenst...	36359.00	Process Worker	Operations	34
35	Kendra	Loud	40954.00	Process Worker	Operations	35
36	Queenie	Kramarcz...	47833.00	Safety Worker	Safety and Maintena...	36
37	Tom	Loeza	43545.00	Safety Worker	Safety and Maintena...	37
38	Chandra	Lagos	62893.00	Stats Clerk	Admin	38
39	Renato	Airhart	35808.00	Training Instructor	Training and Education	39
40	Vicki	Maikoks...	31358.00	Training Instructor	Training and Education	40

Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

EMPLOYEE_SKILL Table

EmployeeID	Skill	EmployeeID	Skill	EmployeeID	Skill
1	Operations	12	Accounting	21	Marketing
2	Operations	13	Accounting	22	Marketing
3	Operations	13	Marketing	23	Operations
4	Operations	13	Operations	24	Marketing
5	Operations	14	Operations	25	Operations
6	Operations	14	Marketing	26	Operations
7	Marketing	14	Accounting	27	Marketing
7	Operations	15	Accounting	28	Marketing
8	Operations	15	Marketing	29	Marketing
8	Marketing	15	Operations	30	Marketing
9	Accounting	16	Operations	31	Operations
9	Marketing	16	Marketing	32	Operations
9	Operations	16	Accounting	33	Marketing
10	Operations	17	Marketing	34	Operations
10	Marketing	17	Operations	35	Operations
11	Accounting	18	Marketing	36	Operations
11	Marketing	18	Operations	37	Operations
11	Operations	18	Accounting	38	Operations
12	Operations	19	Marketing	39	Marketing
12	Marketing	20	Marketing	40	Marketing

CUSTOMER Table

CustomerID	FirstName	LastName	Company	AddressID
1	Andree	Christmann		22
6	Apolonia	Wame	Kitchen People	23
11	Ilona	Dudash	Adams Balcom & Larose Pc	9
16	Chandra	Lagos	Meredith Realty Group Inc	38
21	Corie	Kardell		15
26	Crissy	Pacholec	Cgi Systems Inc	7
31	Danilo	Pride		31
36	Elise	Michelle		14
41	Felton	Yafuso		20
46	Gianna	Branin	All Brevard Cert Apprsls Inc	8
51	Hollis	Stanfield		17
56	Huey	Marcille	Southern Idaho Pipe & Stl Corp	32
61	Kimberely	Rabuse		16
66	Laurena	Begin	Bary, Anthony S Esq	13
71	Lauryn	Randol	Judy, Henry L Esq	11
76	Leanna	Tijerina		7
81	Lyla	Fucillo		24
86	Tish	Violett		18
91	Valentin	Billa	General Color Co Inc	10
96	Willard	Lablanc	Mershon Metal Specialties Inc	12

Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

ADDRESS Table

AddressID	StreetAddress	City	Province	PostalCode
1	3 Mill Rd	Baker Brook	NB	E7A1T3
2	136 W Grand Ave #3	Delhi	ON	N4B1C4
3	80 Maplewood Dr #34	Bradford	ON	L3Z2S4
4	58 Hancock St	Aurora	ON	L4G2J7
5	808 Calle De Industrias	New Waterford	NS	B1H1Z4
6	2859 Dorsett Rd	North York	ON	M9L2T9
7	85 S State St	Barrie	ON	L4N6T7
8	100 Main St	Calgary	AB	T2K4X5
9	2 Sutton Pl S #5727	Rouyn-Noranda	QC	J9X3V4
10	6185 Bohn St #72	Pangman	SK	S0C2C0
11	4207 Leon Rd	North Vancouver	BC	V7L3X6
12	1534 Sidco Dr	Leduc	AB	T9E5A6
13	7564 N Academy Ave	London	ON	N6A1S5
14	88 E Saint Elmo Rd	Hamilton	ON	L8R3J3
15	75 Westchester Ave	Pierrefonds	QC	H9J1W6
16	89 W 35th St #1	Windsor	ON	N8S3R1
17	5174 Interstate 45 N	Yellowhead County	AB	T7E3A7
18	1 Normis Ave #4095	Laval	QC	H7W5K7
19	56 Corporate Dr	Becancour	QC	G9H1H7
20	202 Madison Ave	Ottawa	ON	K1Y1M2
21	6734 W Jackson Blvd	Salmon Arm	BC	V1E4G9
22	765 Rock Island Rd	Strathroy	ON	N7G3K6
23	3 E 31st St #77	Fredericton	NB	E3G0A3
24	7979 33 191	North River	NS	B6L6N1
25	73 Pittsford Victor Rd	Vancouver	BC	V5Z3K2
26	9547 Belmont Rd #21	Belleville	ON	K8P1B3
27	6335 Fort Myer Dr	Saint-Hyacinthe	QC	J2S2N3
28	77 Central Pky N	Quesnel	BC	V2J1N4
29	2726 Franklin Hill Rd	Vernon	BC	V1T7V8
30	220 Old Us Highway ...	Peterborough	ON	K9H6C3
31	6857 Wall St	Red Deer	AB	T4R2H5
32	169 Journal Sq	Edmonton	AB	T5P1G9
33	37 Us Highway 12e ...	Sault Ste. Marie	ON	P6C2C8
34	2335 Canton Hwy #6	Windsor	ON	N8N3N2
35	6 Arch St #9757	Alcida	NB	E8J2C4
36	47 Garfield Ave	Swift Current	SK	S9H4V2
37	447 Commercial St Se	Lille-Perrot	QC	J7V4T4
38	7 N Dean St	Etobicoke	ON	M8Z3P6
39	1 Vernon Blvd	Calgary	AB	T2A2H9
40	7 Tomahawk Dr	Richmond	BC	V7A3N1

Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

PRODUCT Table

SKU	Name	Price	CurrentInventory
14	Black Mobile Skin	14.59	113
25	Organic Shopping Bag	20.95	124
56	Train Model Kit	99.00	155
57	White Wine	10.00	156
59	Gummy Balls	45.00	158
64	Chocolate Mints	33.00	163
72	Toy Soldiers	25.00	171
73	Miscellaneous	45.00	172
78	Airplane Model Kit	156.30	177
81	Fishing Rod	182.10	180
82	Red Wine	56.77	183
83	\$10 Gift Card	10.00	181
91	Car Battery	45.53	191
93	Plastic Bags	3.70	192
95	Gummy Wire	14.99	194
97	Waterpark Weekend Pass	55.00	196
99	Paper Toffee	20.26	198
100	Automobile Model	80.63	199

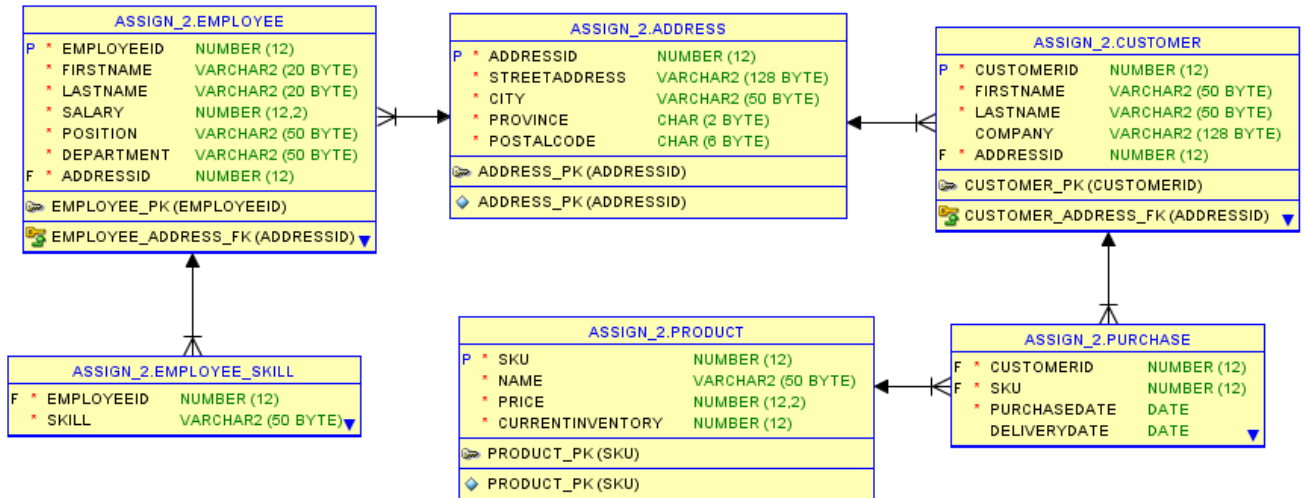
Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

PURCHASE Table

CustomerID	SKU	PurchaseDate	DeliveryDate	CustomerID	SKU	PurchaseDate	DeliveryDate
76	64	2016-01-05	2016-01-22	66	91	2016-06-10	2016-06-10
31	95	2016-01-06	2016-01-22	36	91	2016-06-10	2016-06-10
56	99	2016-01-07	2016-01-22	71	97	2016-06-10	2016-06-10
6	95	2016-01-12	2016-01-23	21	91	2016-06-11	2016-06-11
16	95	2016-01-20	2016-01-26	61	91	2016-06-13	2016-06-13
91	59	2016-01-21	2016-02-13	86	56	2016-06-14	2016-06-14
46	95	2016-01-21	2016-02-13	51	57	2016-06-19	2016-06-19
26	95	2016-01-21	2016-02-05	1	95	2016-06-26	2016-06-26
71	97	2016-01-22	2016-02-15	81	59	2016-07-01	2016-07-01
96	99	2016-01-22	2016-02-15	41	99	2016-07-12	2016-08-18
11	99	2016-01-22	2016-02-14	31	95	2016-07-13	2016-08-28
66	97	2016-01-23	2016-02-16	76	99	2016-07-13	2016-08-24
36	95	2016-01-26	2016-02-16	56	95	2016-07-26	2016-08-30
21	14	2016-02-05	2016-02-17	6	64	2016-07-27	2016-09-01
86	83	2016-02-13	2016-02-19	16	95	2016-08-10	2016-09-03
61	97	2016-02-13	2016-02-18	26	95	2016-08-18	2016-09-07
51	97	2016-02-14	2016-02-19	46	82	2016-08-24	2016-09-12
81	83	2016-02-15	2016-02-22	91	73	2016-08-28	2016-09-17
1	91	2016-02-15	2016-02-22	11	95	2016-08-30	2016-09-20
41	25	2016-02-16	2016-02-26	96	78	2016-09-01	2016-09-22
76	95	2016-02-16	2016-03-03	71	78	2016-09-03	2016-10-16
31	82	2016-02-17	2016-03-04	66	72	2016-09-07	2016-10-18
56	82	2016-02-18	2016-03-04	36	73	2016-09-12	2016-10-24
16	25	2016-02-19	2016-03-08	21	97	2016-09-17	2016-10-24
6	25	2016-02-19	2016-03-06	61	91	2016-09-20	2016-10-26
46	91	2016-02-22	2016-02-22	86	95	2016-09-21	2016-10-26
26	99	2016-02-22	2016-03-26	51	95	2016-09-22	2016-09-22
91	91	2016-02-26	2016-02-26	1	78	2016-10-16	2016-10-16
11	95	2016-03-03	2016-03-03	81	97	2016-10-18	2016-10-18
96	73	2016-03-04	2016-03-04	41	78	2016-10-24	2016-10-24
71	73	2016-03-04	2016-03-04	76	81	2016-10-24	2016-10-24
66	97	2016-03-06	2016-03-06	6	82	2016-10-26	2016-12-10
36	59	2016-03-08	2016-03-08	31	83	2016-10-26	2016-10-26
21	95	2016-03-26	2016-06-07	56	95	2016-10-26	2016-10-26
61	99	2016-04-13	2016-06-09	16	97	2016-10-27	2016-12-19
86	99	2016-04-14	2016-06-09	26	78	2016-11-02	2016-12-19
51	95	2016-04-15	2016-06-09	46	78	2016-11-05	2016-12-20
1	95	2016-04-24	2016-06-10	91	97	2016-11-06	2016-12-20
81	95	2016-04-26	2016-06-10	11	78	2016-11-07	2016-12-22
41	95	2016-05-26	2016-06-10	96	93	2016-11-08	2016-12-22
76	91	2016-05-29	2016-06-10	66	91	2016-11-12	2016-12-19
31	78	2016-06-02	2016-06-11	71	97	2016-11-12	2016-12-10
56	91	2016-06-03	2016-06-13	36	93	2016-11-20	2016-12-19
16	91	2016-06-05	2016-06-19	21	99	2016-11-22	2016-12-20
6	91	2016-06-05	2016-06-14	61	95	2016-11-25	2016-12-20
26	82	2016-06-07	2016-06-26	86	78	2016-12-04	2016-12-22
46	56	2016-06-09	2016-07-01	51	97	2016-12-06	2016-12-22
91	83	2016-06-09	2016-06-09	1	78	2016-12-07	2016-12-07
11	91	2016-06-09	2016-06-09	81	99	2016-12-09	2016-12-09
96	83	2016-06-10	2016-06-10	41	78	2016-12-10	2016-12-10

Oracle Database Design

Database Design Diagram



Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

Tables and Data

EMPLOYEE Table

EMPLOYEEID	FIRSTNAME	LASTNAME	SALARY	POSITION	DEPARTMENT	ADDRESSID
1	Hui	Portaro	71552	Accountant	Finance	1
2	Josefa	Opitz	105107	Accountant	Finance	2
3	Lea	Steinhaus	77421	Accountant	Finance	3
4	Paola	Vielma	115908	Accountant	Finance	4
5	Hortencia	Bresser	47153	Accounts Clerk	Finance	5
6	Leanna	Tijerina	64667	Accounts Clerk	Finance	6
7	Crissy	Pacholec	136819	Actuary	Finance	7
8	Gianna	Branin	196144	Actuary	Finance	8
9	Ilona	Dudash	43983	Admin	Front desk	9
10	Valentin	Billa	35944	Admin	Front desk	10
11	Lauryn	Randol	45784	Admin Assistant	Operations	11
12	Willard	Lablanc	43604	Admin Assistant	Operations	12
13	Laurena	Begin	47529	Admin Level 1	Human Resources	13
14	Elise	Michelle	58373	Admin Level 2	Human Resources	14
15	Corrie	Kardell	54990	Admin Level 3	Human Resources	15
16	Kimberely	Rabuse	65541	Admin Level 3	Human Resources	16
17	Hollis	Stanfield	85567	Admin Level 5	Human Resources	17
18	Tish	Violet	64863	Admin Level 5	Human Resources	18
19	Dell	Polino	104132	Advertising Manager	Marketing and Sales	19
20	Felton	Yafuso	70895	Advertising Manager	Marketing and Sales	20
21	Tambra	Lembke	73201	Advertising Specialist	Marketing and Sales	21
22	Andree	Christmann	42435	Clerk	Operations	22
23	Apolonia	Warne	51681	Clerk	Admin	23
24	Lyla	Fucillo	47179	Clerk	Operations	24
25	Hannah	Edmison	44077	Education	Training and Education	25
26	Lourdes	Bauswell	40926	Education	Training and Education	26
27	Barney	Hagen	99207	Engineer	Software Services	27
28	Belen	Nelton	133526	Engineer	Software Services	28
29	Lenita	Darbro	75029	Engineer	Software Services	29
30	Matthew	Armacost	73412	Engineer	Software Services	30
31	Danilo	Pride	34736	Junior Analyst	Software Services	31
32	Huey	Marcille	36624	Junior Analyst	Software Services	32
33	Nohemi	Leko	58258	Media Planner	Marketing and Sales	33
34	Francoise	Rautenstrauch	36359	Process Worker	Operations	34
35	Kendra	Loud	40954	Process Worker	Operations	35
36	Queenie	Kramarczyk	47833	Safety Worker	Safety and Maintenance	36
37	Tom	Loeza	43545	Safety Worker	Safety and Maintenance	37
38	Chandra	Lagos	62893	Stats Clerk	Admin	38
39	Renato	Airhart	35808	Training Instructor	Training and Education	39
40	Vicki	Maikokoong	31358	Training Instructor	Training and Education	40

Assignment #2: Data Modeling and Design
 Caitlin Ross #040750891

EMPLOYEE_SKILL Table

EMPLOYEEID	SKILL	EMPLOYEEID	SKILL	EMPLOYEEID	SKILL
1	Operations	12	Operations	21	Marketing
2	Operations	13	Operations	22	Marketing
3	Operations	13	Accounting	23	Operations
4	Operations	13	Marketing	24	Marketing
5	Operations	14	Accounting	25	Operations
6	Operations	14	Operations	26	Operations
7	Marketing	14	Marketing	27	Marketing
7	Operations	15	Operations	28	Marketing
8	Marketing	15	Accounting	29	Marketing
8	Operations	15	Marketing	30	Marketing
9	Accounting	16	Accounting	31	Operations
9	Marketing	16	Operations	32	Operations
9	Operations	16	Marketing	33	Marketing
10	Marketing	17	Marketing	34	Operations
10	Operations	17	Operations	35	Operations
11	Accounting	18	Accounting	36	Operations
11	Marketing	18	Marketing	37	Operations
11	Operations	18	Operations	38	Operations
12	Marketing	19	Marketing	39	Marketing
12	Accounting	20	Marketing	40	Marketing

Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

CUSTOMER Table

CUSTOMERID	FIRSTNAME	LASTNAME	COMPANY	ADDRESSID
1	Andree	Christmann	(null)	22
6	Apolonia	Warne	Kitchen People	23
11	Iлона	Dudash	Adams Balcom & Larose Pc	9
16	Chandra	Lagos	Meredith Realty Group Inc	38
21	Corrie	Kardell	(null)	15
26	Crissy	Pacholec	Cgi Systems Inc	7
31	Danilo	Pride	(null)	31
36	Elise	Michelle	(null)	14
41	Felton	Yafuso	(null)	20
46	Gianna	Branin	All Brevard Cert Apprsls Inc	8
51	Hollis	Stanfield	(null)	17
56	Huey	Marcille	Southern Idaho Pipe & Stl Corp	32
61	Kimberely	Rabuse	(null)	16
66	Laurena	Begin	Barry, Anthony S Esq	13
71	Lauryn	Randol	Judy, Henry L Esq	11
76	Leanna	Tijerina	(null)	7
81	Lyla	Fucillo	(null)	24
86	Tish	Violet	(null)	18
91	Valentin	Billa	General Color Co Inc	10
96	Willard	Lablanc	Mershon Metal Specialties Inc	12

Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

ADDRESS Table

ADDRESSID	STREETADDRESS	CITY	PROVINCE	POSTALCODE
1	3 Mill Rd	Baker Brook	NB	E7A1T3
2	136 W Grand Ave #3	Delhi	ON	N4B1C4
3	80 Maplewood Dr #34	Bradford	ON	L3Z2S4
4	58 Hancock St	Aurora	ON	L4G2J7
5	808 Calle De Industrias	New Waterford	NS	B1H1Z4
6	2859 Dorsett Rd	North York	ON	M9L2T9
7	85 S State St	Barrie	ON	L4N6T7
8	100 Main St	Calgary	AB	T2K4X5
9	2 Sutton Pl S #5727	Rouyn-Noranda	QC	J9X3V4
10	6185 Bohn St #72	Pangman	SK	S0C2C0
11	4207 Leon Rd	North Vancouver	BC	V7L3X6
12	1534 Sidco Dr	Leduc	AB	T9E5A6
13	7564 N Academy Ave	London	ON	N6A1S5
14	88 E Saint Elmo Rd	Hamilton	ON	L8R3J3
15	75 Westchester Ave	Pierrefonds	QC	H9J1W6
16	89 W 35th St #1	Windsor	ON	N8S3R1
17	5174 Interstate 45 N	Yellowhead County	AB	T7E3A7
18	1 Norris Ave #4095	Laval	QC	H7W5K7
19	56 Corporate Dr	Becancour	QC	G9H1H7
20	202 Madison Ave	Ottawa	ON	K1Y1M2
21	6734 W Jackson Blvd	Salmon Arm	BC	V1E4G9
22	765 Rock Island Rd	Strathroy	ON	N7G3K6
23	3 E 31st St #77	Fredericton	NB	E3G0A3
24	7979 33 191	North River	NS	B6L6N1
25	73 Pittsford Victor Rd	Vancouver	BC	V5Z3K2
26	9547 Belmont Rd #21	Belleville	ON	K8P1B3
27	6335 Fort Myer Dr	Saint-Hyacinthe	QC	J2S2N3
28	77 Central Pky N	Quesnel	BC	V2J1N4
29	2726 Franklin Hill Rd	Vernon	BC	V1T7V8
30	220 Old Us Highway 441	Peterborough	ON	K9H6C3
31	6857 Wall St	Red Deer	AB	T4R2H5
32	169 Journal Sq	Edmonton	AB	T5P1G9
33	37 Us Highway 12e E #6	Sault Ste. Marie	ON	P6C2C8
34	2335 Canton Hwy #6	Windsor	ON	N8N3N2
35	6 Arch St #9757	Alcida	NB	E8J2C4
36	47 Garfield Ave	Swift Current	SK	S9H4V2
37	447 Commercial St Se	Lille-Perrot	QC	J7V4T4
38	7 N Dean St	Etobicoke	ON	M8Z3P6
39	1 Vernon Blvd	Calgary	AB	T2A2H9
40	7 Tomahawk Dr	Richmond	BC	V7A3N1

Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

PRODUCT Table

SKU	NAME	PRICE	CURRENTINVENTORY
14	Black Mobile Skin	14.59	113
25	Organic Shopping Bag	20.95	124
56	Train Model Kit	99	155
57	White Wine	10	156
59	Gummy Balls	45	158
64	Chocolate Mints	33	163
72	Toy Soldiers	25	171
73	Miscellaneous	45	172
78	Airplane Model Kit	156.3	177
81	Fishing Rod	182.1	180
82	Red Wine	56.77	183
83	\$10 Gift Card	10	181
91	Car Battery	45.53	191
93	Plastic Bags	3.7	192
95	Gummy Wire	14.99	194
97	Waterpark Weekend Pass	55	196
99	Paper Toffee	20.26	198
100	Automobile Model	80.63	199

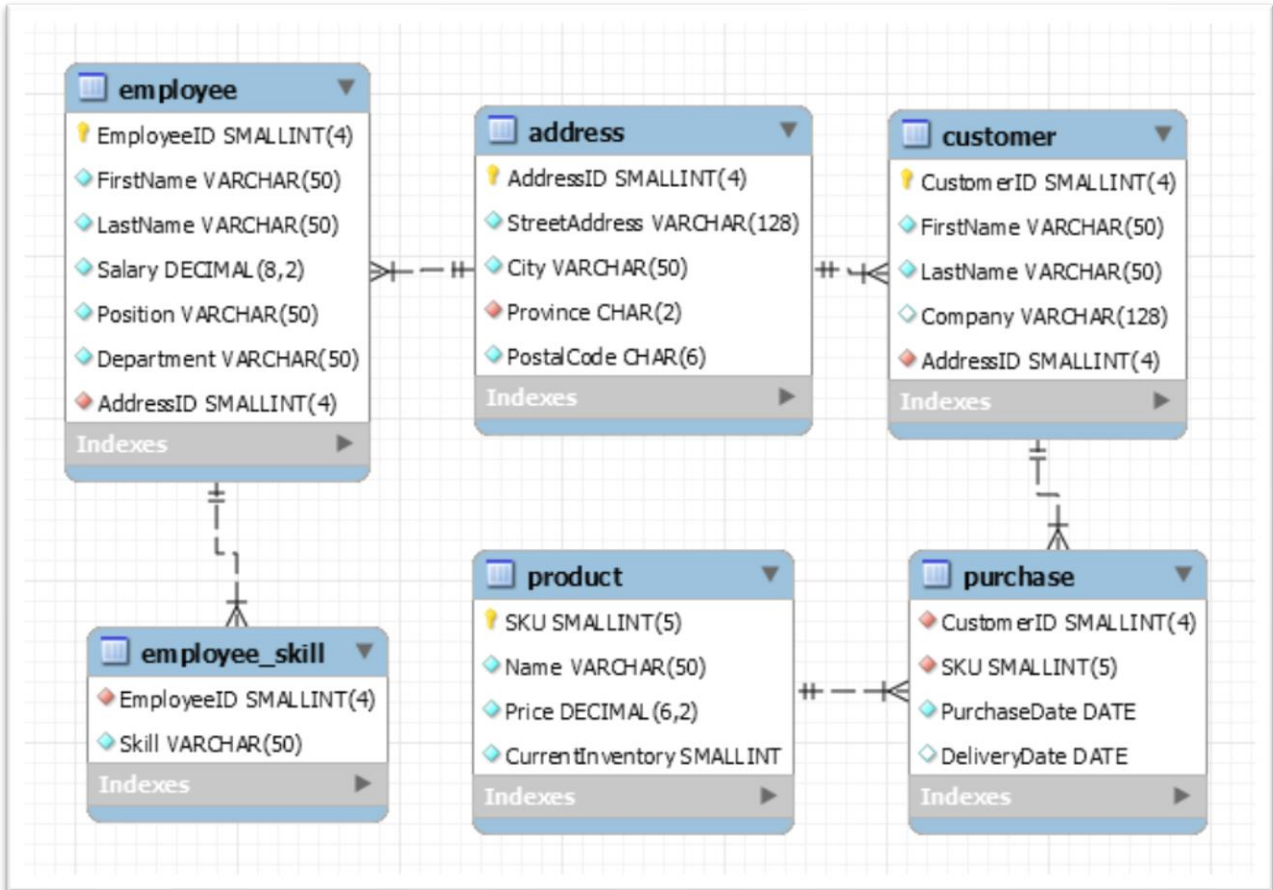
Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

PURCHASE Table

CUSTOMERID	SKU	PURCHASEDATE	DELIVERYDATE	CUSTOMERID	SKU	PURCHASEDATE	DELIVERYDATE
76	64	16-01-05	16-01-22	66	91	16-06-10	16-06-10
31	95	16-01-06	16-01-22	36	91	16-06-10	16-06-10
56	99	16-01-07	16-01-22	71	97	16-06-10	16-06-10
6	95	16-01-12	16-01-23	21	91	16-06-11	16-06-11
16	95	16-01-20	16-01-26	61	91	16-06-13	16-06-13
91	59	16-01-21	16-02-13	86	56	16-06-14	16-06-14
26	95	16-01-21	16-02-05	51	57	16-06-19	16-06-19
46	95	16-01-21	16-02-13	1	95	16-06-26	16-06-26
71	97	16-01-22	16-02-15	81	59	16-07-01	16-07-01
11	99	16-01-22	16-02-14	41	99	16-07-12	16-08-18
96	99	16-01-22	16-02-15	31	95	16-07-13	16-08-28
66	97	16-01-23	16-02-16	76	99	16-07-13	16-08-24
36	95	16-01-26	16-02-16	56	95	16-07-26	16-08-30
21	14	16-02-05	16-02-17	6	64	16-07-27	16-09-01
86	83	16-02-13	16-02-19	16	95	16-08-10	16-09-03
61	97	16-02-13	16-02-18	26	95	16-08-18	16-09-07
51	97	16-02-14	16-02-19	46	82	16-08-24	16-09-12
81	83	16-02-15	16-02-22	91	73	16-08-28	16-09-17
1	91	16-02-15	16-02-22	11	95	16-08-30	16-09-20
41	25	16-02-16	16-02-26	96	78	16-09-01	16-09-22
76	95	16-02-16	16-03-03	71	78	16-09-03	16-10-16
31	82	16-02-17	16-03-04	66	72	16-09-07	16-10-18
56	82	16-02-18	16-03-04	36	73	16-09-12	16-10-24
6	25	16-02-19	16-03-06	21	97	16-09-17	16-10-24
16	25	16-02-19	16-03-08	61	91	16-09-20	16-10-26
46	91	16-02-22	16-02-22	86	95	16-09-21	16-10-26
26	99	16-02-22	16-03-26	51	95	16-09-22	16-09-22
91	91	16-02-26	16-02-26	1	78	16-10-16	16-10-16
11	95	16-03-03	16-03-03	81	97	16-10-18	16-10-18
96	73	16-03-04	16-03-04	41	78	16-10-24	16-10-24
71	73	16-03-04	16-03-04	76	81	16-10-24	16-10-24
66	97	16-03-06	16-03-06	6	82	16-10-26	16-12-10
36	59	16-03-08	16-03-08	31	83	16-10-26	16-10-26
21	95	16-03-26	16-06-07	56	95	16-10-26	16-10-26
61	99	16-04-13	16-06-09	16	97	16-10-27	16-12-19
86	99	16-04-14	16-06-09	26	78	16-11-02	16-12-19
51	95	16-04-15	16-06-09	46	78	16-11-05	16-12-20
1	95	16-04-24	16-06-10	91	97	16-11-06	16-12-20
81	95	16-04-26	16-06-10	11	78	16-11-07	16-12-22
41	95	16-05-26	16-06-10	96	93	16-11-08	16-12-22
76	91	16-05-29	16-06-10	66	91	16-11-12	16-12-19
31	78	16-06-02	16-06-11	71	97	16-11-12	16-12-10
56	91	16-06-03	16-06-13	36	93	16-11-20	16-12-19
16	91	16-06-05	16-06-19	21	99	16-11-22	16-12-20
6	91	16-06-05	16-06-14	61	95	16-11-25	16-12-20
26	82	16-06-07	16-06-26	86	78	16-12-04	16-12-22
46	56	16-06-09	16-07-01	51	97	16-12-06	16-12-22
91	83	16-06-09	16-06-09	1	78	16-12-07	16-12-07
11	91	16-06-09	16-06-09	81	99	16-12-09	16-12-09
96	83	16-06-10	16-06-10	41	78	16-12-10	16-12-10

MySQL Database Design

Database Design Diagram



Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

Tables and Data

EMPLOYEE Table

EmployeeID	FirstName	LastName	Salary	Position	Department	AddressID
0001	Hui	Portaro	71552.00	Accountant	Finance	0001
0002	Josefa	Opitz	105107.00	Accountant	Finance	0002
0003	Lea	Steinhaus	77421.00	Accountant	Finance	0003
0004	Paola	Vielma	115908.00	Accountant	Finance	0004
0005	Hortencia	Bresser	47153.00	Accounts Clerk	Finance	0005
0006	Leanna	Tijerina	64667.00	Accounts Clerk	Finance	0006
0007	Crissy	Pacholec	136819.00	Actuary	Finance	0007
0008	Gianna	Branin	196144.00	Actuary	Finance	0008
0009	Ilona	Dudash	43983.00	Admin	Front desk	0009
0010	Valentin	Billa	35944.00	Admin	Front desk	0010
0011	Lauryn	Randol	45784.00	Admin Assistant	Operations	0011
0012	Willard	Lablanc	43604.00	Admin Assistant	Operations	0012
0013	Laurena	Begin	47529.00	Admin Level 1	Human Resources	0013
0014	Elise	Michelle	58373.00	Admin Level 2	Human Resources	0014
0015	Corrie	Kardell	54990.00	Admin Level 3	Human Resources	0015
0016	Kimberely	Rabuse	65541.00	Admin Level 3	Human Resources	0016
0017	Hollis	Stanfield	85567.00	Admin Level 5	Human Resources	0017
0018	Tish	Violett	64863.00	Admin Level 5	Human Resources	0018
0019	Dell	Polino	104132.00	Advertising M...	Marketing and Sales	0019
0020	Felton	Yafuso	70895.00	Advertising M...	Marketing and Sales	0020
0021	Tambra	Lembke	73201.00	Advertising S...	Marketing and Sales	0021
0022	Andree	Christmann	42435.00	Clerk	Operations	0022
0023	Apolonia	Warne	51681.00	Clerk	Admin	0023
0024	Lyla	Fucillo	47179.00	Clerk	Operations	0024
0025	Hannah	Edmison	44077.00	Education	Training and Education	0025
0026	Lourdes	Bauswell	40926.00	Education	Training and Education	0026
0027	Barney	Hagen	99207.00	Engineer	Software Services	0027
0028	Belen	Nelton	133526.00	Engineer	Software Services	0028
0029	Lenita	Darbro	75029.00	Engineer	Software Services	0029
0030	Matthew	Armocost	73412.00	Engineer	Software Services	0030
0031	Danilo	Pride	34736.00	Junior Analyst	Software Services	0031
0032	Huey	Marcille	36624.00	Junior Analyst	Software Services	0032
0033	Nohemi	Leko	58258.00	Media Planner	Marketing and Sales	0033
0034	Francoise	Rautenstrauch	36359.00	Process Worker	Operations	0034
0035	Kendra	Loud	40954.00	Process Worker	Operations	0035
0036	Queenie	Kramarczyk	47833.00	Safety Worker	Safety and Maintena...	0036
0037	Tom	Loeza	43545.00	Safety Worker	Safety and Maintena...	0037
0038	Chandra	Laqos	62893.00	Stats Clerk	Admin	0038
0039	Renato	Airhart	35808.00	Training Instr...	Training and Education	0039
0040	Vicki	Maikokoosong	31358.00	Training Instr...	Training and Education	0040

Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

EMPLOYEE_SKILL Table

EmployeeID	Skill	EmployeeID	Skill	EmployeeID	Skill
0001	Operations	0012	Marketing	0021	Marketing
0002	Operations	0013	Accounting	0022	Marketing
0003	Operations	0013	Marketing	0023	Operations
0004	Operations	0013	Operations	0024	Marketing
0005	Operations	0014	Accounting	0025	Operations
0006	Operations	0014	Marketing	0026	Operations
0007	Marketing	0014	Operations	0027	Marketing
0007	Operations	0015	Accounting	0028	Marketing
0008	Marketing	0015	Marketing	0029	Marketing
0008	Operations	0015	Operations	0030	Marketing
0009	Accounting	0016	Accounting	0031	Operations
0009	Marketing	0016	Marketing	0032	Operations
0009	Operations	0016	Operations	0033	Marketing
0010	Marketing	0017	Marketing	0034	Operations
0010	Operations	0017	Operations	0035	Operations
0011	Accounting	0018	Accounting	0036	Operations
0011	Marketing	0018	Operations	0037	Operations
0011	Operations	0018	Marketing	0038	Operations
0012	Accounting	0019	Marketing	0039	Marketing
0012	Operations	0020	Marketing	0040	Marketing

CUSTOMER Table

CustomerID	FirstName	LastName	Company	AddressID
0001	Andree	Christmann		0022
0006	Apolonia	Warne	Kitchen People	0023
0011	Iлона	Dudash	Adams Balcom & Larose Pc	0009
0016	Chandra	Lagos	Meredith Realty Group Inc	0038
0021	Corrie	Kardell		0015
0026	Crissy	Pacholec	Cgi Systems Inc	0007
0031	Danilo	Pride		0031
0036	Elise	Michelle		0014
0041	Felton	Yafuso		0020
0046	Gianna	Branin	All Brevard Cert Apprsls Inc	0008
0051	Hollis	Stanfield		0017
0056	Huey	Marcille	Southern Idaho Pipe & Stl ...	0032
0061	Kimberely	Rabuse		0016
0066	Laurena	Begin	Barry, Anthony S Esq	0013
0071	Lauryn	Randol	Judy, Henry L Esq	0011
0076	Leanna	Tijerina		0007
0081	Lyla	Fucillo		0024
0086	Tish	Violett		0018
0091	Valentin	Billa	General Color Co Inc	0010
0096	Willard	Lablanc	Mershon Metal Specialties Inc	0012

Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

ADDRESS Table

	AddressID	StreetAddress	City	Province	PostalCode
▶	0001	3 Mill Rd	Baker Brook	NB	E7A1T3
	0002	136 W Grand Ave #3	Delhi	ON	N4B1C4
	0003	80 Maplewood Dr #34	Bradford	ON	L3Z2S4
	0004	58 Hancock St	Aurora	ON	L4G2J7
	0005	808 Calle De Industrias	New Waterford	NS	B1H1Z4
	0006	2859 Dorsett Rd	North York	ON	M9L2T9
	0007	85 S State St	Barrie	ON	L4N6T7
	0008	100 Main St	Calgary	AB	T2K4X5
	0009	2 Sutton Pl S #5727	Rouyn-Noranda	QC	J9X3V4
	0010	6185 Bohn St #72	Pangman	SK	S0C2C0
	0011	4207 Leon Rd	North Vancouver	BC	V7L3X6
	0012	1534 Sidco Dr	Leduc	AB	T9E5A6
	0013	7564 N Academy Ave	London	ON	N6A1S5
	0014	88 E Saint Elmo Rd	Hamilton	ON	L8R3J3
	0015	75 Westchester Ave	Pierrefonds	QC	H9J1W6
	0016	89 W 35th St #1	Windsor	ON	N8S3R1
	0017	5174 Interstate 45 N	Yellowhead Co...	AB	T7E3A7
	0018	1 Norris Ave #4095	Laval	QC	H7W5K7
	0019	56 Corporate Dr	Becancour	QC	G9H1H7
	0020	202 Madison Ave	Ottawa	ON	K1Y1M2
	0021	6734 W Jackson Blvd	Salmon Arm	BC	V1E4G9
	0022	765 Rock Island Rd	Strathroy	ON	N7G3K6
	0023	3 E 31st St #77	Fredericton	NB	E3G0A3
	0024	7979 33 191	North River	NS	B6L6N1
	0025	73 Pittsford Victor Rd	Vancouver	BC	V5Z3K2
	0026	9547 Belmont Rd #21	Belleville	ON	K8P1B3
	0027	6335 Fort Myer Dr	Saint-Hyacinthe	QC	J2S2N3
	0028	77 Central Pky N	Quesnel	BC	V2J1N4
	0029	2726 Franklin Hill Rd	Vernon	BC	V1T7V8
	0030	220 Old Us Highway 441	Peterborough	ON	K9H6C3
	0031	6857 Wall St	Red Deer	AB	T4R2H5
	0032	169 Journal Sq	Edmonton	AB	T5P1G9
	0033	37 Us Highway 12e E #6	Sault Ste. Marie	ON	P6C2C8
	0034	2335 Canton Hwy #6	Windsor	ON	N8N3N2
	0035	6 Arch St #9757	Alcida	NB	E8J2C4
	0036	47 Garfield Ave	Swift Current	SK	S9H4V2
	0037	447 Commercial St Se	L'Île-Perrot	QC	J7V4T4
	0038	7 N Dean St	Etobicoke	ON	M8Z3P6
	0039	1 Vernon Blvd	Calgary	AB	T2A2H9
	0040	7 Tomahawk Dr	Richmond	BC	V7A3N1

Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

PRODUCT Table

	SKU	Name	Price	CurrentInventory
▶	00014	Black Mobile Skin	14.59	113
	00025	Organic Shopping Bag	20.95	124
	00056	Train Model Kit	99.00	155
	00057	White Wine	10.00	156
	00059	Gummy Balls	45.00	158
	00064	Chocolate Mints	33.00	163
	00072	Toy Soldiers	25.00	171
	00073	Miscellaneous	45.00	172
	00078	Airplane Model Kit	156.30	177
	00081	Fishing Rod	182.10	180
	00082	Red Wine	56.77	183
	00083	\$10 Gift Card	10.00	181
	00091	Car Battery	45.53	191
	00093	Plastic Bags	3.70	192
	00095	Gummy Wire	14.99	194
	00097	Waterpark Weekend ...	55.00	196
	00099	Paper Toffee	20.26	198
	00100	Automobile Model	80.63	199

Assignment #2: Data Modeling and Design
Caitlin Ross #040750891

PURCHASE Table

	CustomerID	SKU	PurchaseDate	DeliveryDate		CustomerID	SKU	PurchaseDate	DeliveryDate
▶	0076	00064	2016-01-05	2016-01-22		0066	00091	2016-06-10	2016-06-10
	0031	00095	2016-01-06	2016-01-22		0036	00091	2016-06-10	2016-06-10
	0056	00099	2016-01-07	2016-01-22		0071	00097	2016-06-10	2016-06-10
	0006	00095	2016-01-12	2016-01-23		0021	00091	2016-06-11	2016-06-11
	0016	00095	2016-01-20	2016-01-26		0061	00091	2016-06-13	2016-06-13
	0091	00059	2016-01-21	2016-02-13		0086	00056	2016-06-14	2016-06-14
	0046	00095	2016-01-21	2016-02-13		0051	00057	2016-06-19	2016-06-19
	0026	00095	2016-01-21	2016-02-05		0001	00095	2016-06-26	2016-06-26
	0071	00097	2016-01-22	2016-02-15		0081	00059	2016-07-01	2016-07-01
	0011	00099	2016-01-22	2016-02-14		0041	00099	2016-07-12	2016-08-18
	0096	00099	2016-01-22	2016-02-15		0031	00095	2016-07-13	2016-08-28
	0066	00097	2016-01-23	2016-02-16		0076	00099	2016-07-13	2016-08-24
	0036	00095	2016-01-26	2016-02-16		0056	00095	2016-07-26	2016-08-30
	0021	00014	2016-02-05	2016-02-17		0006	00064	2016-07-27	2016-09-01
	0086	00083	2016-02-13	2016-02-19		0016	00095	2016-08-10	2016-09-03
	0061	00097	2016-02-13	2016-02-18		0026	00095	2016-08-18	2016-09-07
	0051	00097	2016-02-14	2016-02-19		0046	00082	2016-08-24	2016-09-12
	0081	00083	2016-02-15	2016-02-22		0091	00073	2016-08-28	2016-09-17
	0001	00091	2016-02-15	2016-02-22		0011	00095	2016-08-30	2016-09-20
	0041	00025	2016-02-16	2016-02-26		0096	00078	2016-09-01	2016-09-22
	0076	00095	2016-02-16	2016-03-03		0071	00078	2016-09-03	2016-10-16
	0031	00082	2016-02-17	2016-03-04		0066	00072	2016-09-07	2016-10-18
	0056	00082	2016-02-18	2016-03-04		0036	00073	2016-09-12	2016-10-24
	0016	00025	2016-02-19	2016-03-08		0021	00097	2016-09-17	2016-10-24
	0006	00025	2016-02-19	2016-03-06		0061	00091	2016-09-20	2016-10-26
	0046	00091	2016-02-22	2016-02-22		0086	00095	2016-09-21	2016-10-26
	0026	00099	2016-02-22	2016-03-26		0051	00095	2016-09-22	2016-09-22
	0091	00091	2016-02-26	2016-02-26		0001	00078	2016-10-16	2016-10-16
	0011	00095	2016-03-03	2016-03-03		0081	00097	2016-10-18	2016-10-18
	0071	00073	2016-03-04	2016-03-04		0041	00078	2016-10-24	2016-10-24
	0096	00073	2016-03-04	2016-03-04		0076	00081	2016-10-24	2016-10-24
	0066	00097	2016-03-06	2016-03-06		0006	00082	2016-10-26	2016-12-10
	0036	00059	2016-03-08	2016-03-08		0031	00083	2016-10-26	2016-10-26
	0021	00095	2016-03-26	2016-06-07		0056	00095	2016-10-26	2016-10-26
	0061	00099	2016-04-13	2016-06-09		0016	00097	2016-10-27	2016-12-19
	0086	00099	2016-04-14	2016-06-09		0026	00078	2016-11-02	2016-12-19
	0051	00095	2016-04-15	2016-06-09		0046	00078	2016-11-05	2016-12-20
	0001	00095	2016-04-24	2016-06-10		0091	00097	2016-11-06	2016-12-20
	0081	00095	2016-04-26	2016-06-10		0011	00078	2016-11-07	2016-12-22
	0041	00095	2016-05-26	2016-06-10		0096	00093	2016-11-08	2016-12-22
	0076	00091	2016-05-29	2016-06-10		0066	00091	2016-11-12	2016-12-19
	0031	00078	2016-06-02	2016-06-11		0071	00097	2016-11-12	2016-12-10
	0056	00091	2016-06-03	2016-06-13		0036	00093	2016-11-20	2016-12-19
	0016	00091	2016-06-05	2016-06-19		0021	00099	2016-11-22	2016-12-20
	0006	00091	2016-06-05	2016-06-14		0061	00095	2016-11-25	2016-12-20
	0026	00082	2016-06-07	2016-06-26		0086	00078	2016-12-04	2016-12-22
	0046	00056	2016-06-09	2016-07-01		0051	00097	2016-12-06	2016-12-22
	0091	00083	2016-06-09	2016-06-09		0001	00078	2016-12-07	2016-12-07
	0011	00091	2016-06-09	2016-06-09		0081	00099	2016-12-09	2016-12-09
	0096	00083	2016-06-10	2016-06-10		0041	00078	2016-12-10	2016-12-10

Appendix 1: Misc. Assumptions and Notes

Data Cleanup and Analysis

- *Assumption:* Since the address in the Employee and Purchase sheets match but have different names (though similar, as if heard wrong), I assumed that the names were correct in the Employee table and adjusted the Purchase table accordingly. I chose the Employee table to be the reference because Violet is a more likely last name than Purple (Tish Violet / Tish Purple). Alternative solution would be to store the names as is and assume that only one employee or customer could live at a given address. This would create problems if two people from the same household were both customers or employees.
- *Note:* One purchase of Paper Toffee has completely different price from all other purchases of Paper Toffee. Price does not match any other product either. Used the price from other purchases instead of creating a new SKU.
- *Note:* Much of the data was informally analyzed during cleanup, which was done manually in Excel by sorting and looking for repeats. Sorting by Skill, Position, and Department helped with cleaning/analyzing the Employee data. Sorting by Customer (before splitting into First Name, Last Name, and Company) and Product helped with cleaning/analyzing the Purchase data. After the first cleanup (proper case, removing duplicates, fixing spelling, matching names between Employee and Purchase sheets, streamlining department names) the address and name columns were split into their constituent parts.
- *Note:* While not necessary for the queries given, I split Name into First and Last for the sake of future expandability.
- *Note:* In future, importing data directly into MySQL (the DBMS I'm most familiar with) would potentially be faster, then cleaning it up using SQL statements. This would be done first by sorting by various columns (such as Department) then using UPDATE statements to correct the data. This could correct multiple records at once if a particular error occurs multiple times. With larger datasets this would be more efficient than manually cleaning the spreadsheet (although Excel has some good data cleaning tools).

Creating and Populating Databases

- *Note:* I forgot to configure MySQL to use upper case for table names, and to configure Oracle to use proper case for column names.
- *Note:* Auto-incrementing the surrogate keys was implemented in MySQL, but I don't know how to do it in SQL Server or Oracle. Luckily, I was able to populate MySQL with the data first, then import that data into SQL Server and Oracle.

Other

- *Note:* I didn't have the time to add an Amount column to the PURCHASE table. Instructions were vague on whether they wanted a dollar value or inventory quantity when asking for 'amounts'. I decided to interpret it as quantity, but it could be changed to dollar values by using SUM functions on the Price (or Amount) column instead of COUNT functions on the PurchaseDate column.