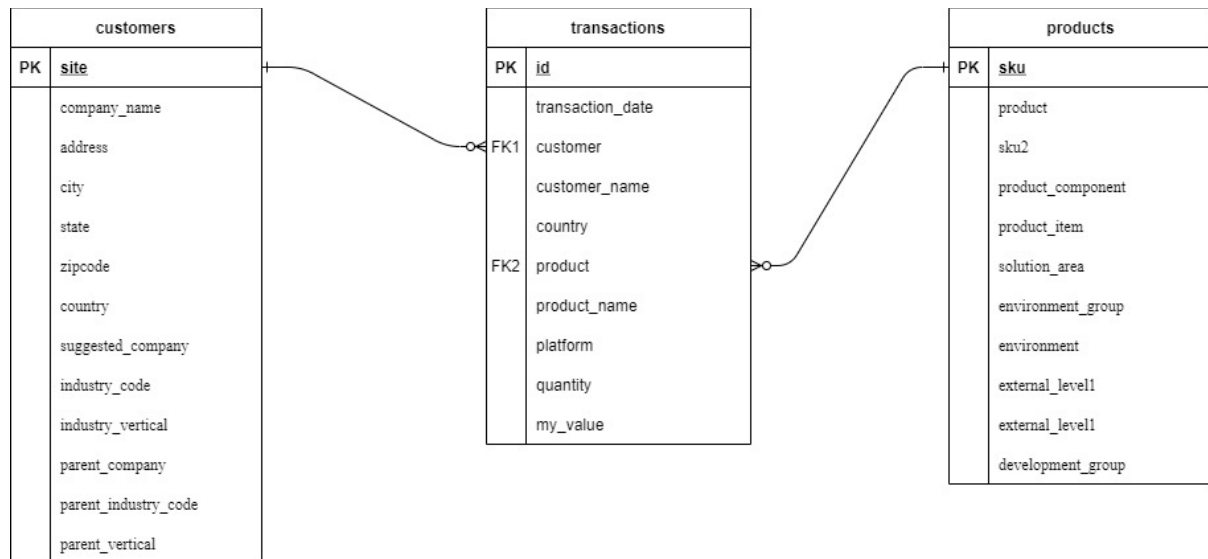


DELIVERABLES

1. Examine the files and determine an appropriate relationship model between them. Create and document a physical data model detailing the field types and relationships.



Customer Table

Sno	Column Name	Data type	Constraints
1	Site	Int	Primary Key , Unique, Not null
2	Company Name	Varchar (255)	Not Null
3	Address	Varchar (255)	Not Null
4	City	Varchar (255)	Not null
5	State	Varchar (255)	Not Null
6	Zipcode	Varchar (255)	Not null
7	Country	Varchar (255)	Not null
8	Suggested_company	Varchar (255)	Not null
9	Industry_code	Varchar (255)	Not null
10	Industry_vertical	Varchar (255)	Not null
11	Parent_company	Varchar (255)	Not null
12	parent_industry_code	Varchar (255)	Not null
13	Parent_vertical	Varchar (255)	Not null

Product Table

Sno	Column Name	Data type	Constraints
1	sku	Int	Primary Key , Unique, Not null
2	Product	Varchar (255)	Not Null
3	Sku2	Varchar (255)	Not Null
4	Product_component	Varchar (255)	Not null
5	Product_item	Varchar (255)	Not Null
6	Solution_area	Varchar (255)	Not null
7	Environment_group	Varchar (255)	Not null
8	Environment	Varchar (255)	Not null
9	External_level1	Varchar (255)	Not null
10	External_level2	Varchar (255)	Not null
11	Development_group	Varchar (255)	Not null

Transaction Table

Sno	Column Name	Data type	Constraints
1	id	Int	Primary Key , Unique, Not null
2	Transaction_date	Date_time	Not Null
3	Customer	In	Not Null, Foreign key
4	Customer_name	Varchar (255)	Not null
5	Country	Varchar (255)	Not Null
6	Product	Varchar (255)	Not null
7	Product_name	Varchar (255)	Not null
8	Platform	Varchar (255)	Not null
9	Quantity	Int	Not null
10	My_value	Int	Not null

2. Load all four Three into a new database schema, and provide evidence of loading scripts and row counts.

Codes are provided in

1. customers.sql file
2. products.sql
3. transactions.sql

3. Ensure that the data is clean, describe the steps taken, and if you need to remove some of it, explain why that is the case.

1. DELETE FROM customers WHERE company_name=""

This query will remove all the empty row from the table customers where company_name is empty

2. DELETE FROM customers WHERE suggested_company="";

This query will remove all the empty row from the table customers where suggested_company is empty

3. DELETE FROM customers WHERE state="";

This query will remove all the empty row from the table customers where state is empty

4. DELETE FROM products WHERE sku2="";

This query will remove all the empty row from the table products where sku is empty

5. DELETE FROM transactions WHERE customer="";

This query will remove all the empty row from the table transactions where customer is empty

6. DELETE FROM transactions WHERE product="";

This query will remove all the empty row from the table transactions where product is empty

SQL Queries

1. How many **different** products do the company sell

I am assuming that the company name is “Alltel Communications LLC” the products I’m searching for.

```
SELECT t.customer_name,p.* FROM transactions as t INNER JOIN customers as c ON  
c.site=t.customer INNER JOIN products as p ON p.sku2=t.product WHERE c.company_name=' Alltel  
Communications LLC';
```

+ Options												
customer_name	id	product	sku	sku2	product_component	product_item	solution_area	environment_group	environment	external_level1	external_level2	development_group
Alltel Communications LLC	12030	Autosys	13716	A2187SMGT1763	UNCTRATSYS	UNCTRATSYS JOB MGT REMOTE AGT	Automation	Distributed	Multi Platform	Network	Job Scheduling	Job Management
Alltel Communications LLC	12030	Autosys	13716	A2187SMGT1763	UNCTRATSYS	UNCTRATSYS JOB MGT REMOTE AGT	Automation	Distributed	Multi Platform	Network	Job Scheduling	Job Management
Alltel Communications LLC	6047	Access Control	6951	E29710TRAC7670	Unassigned	Unassigned	Security Management	Distributed	Distributed	Security	IAM	Identity and Access Management
Alltel Communications LLC	6047	Access Control	6951	E29710TRAC7670	Unassigned	Unassigned	Security Management	Distributed	Distributed	Security	IAM	Identity and Access Management
Alltel Communications LLC	3616	Easytrieve	4322	EZIQVJ6354000404208	EASYTRIEVE/IQ W/SQL	EASYTRIEVE/IQ W/SQL - JAPANESE	Unassigned	Mainframe	VM	Tools	Other Programmer Development Tools And Utilities	Products - MF Output/Easytrieve
Alltel Communications LLC	3616	Easytrieve	4322	EZIQVJ6354000404208	EASYTRIEVE/IQ W/SQL	EASYTRIEVE/IQ W/SQL - JAPANESE	Unassigned	Mainframe	VM	Tools	Other Programmer Development Tools And Utilities	Products - MF Output/Easytrieve
Alltel Communications LLC	11379	Pan SQL	12945	PSQ4705IBAS08124	PANSQL	PANSQL	Unassigned	Mainframe	MVS	Access	End-User Query, Reporting And Analysis Tools	Products - MF Output/Easytrieve
Alltel Communications LLC	11379	Pan SQL	12945	PSQ4705IBAS08124	PANSQL	PANSQL	Unassigned	Mainframe	MVS	Access	End-User Query, Reporting And Analysis Tools	Products - MF Output/Easytrieve
Alltel Communications LLC	10393	AntiSpyware	11923	ETRPP50H52350ED7621	Unassigned	Unassigned	Unassigned	Distributed	Distributed	Security	Secure Content Management	Threat Management
Alltel Communications LLC	10393	AntiSpyware	11923	ETRPP50H52350ED7621	Unassigned	Unassigned	Unassigned	Distributed	Distributed	Security	Secure Content Management	Threat Management

2. How many products have the company sold in October?

I am assuming that the company name is “Alltel Communications LLC” the products I’m searching for.

```
SELECT t.customer_name,t.transaction_date,p.* FROM transactions as t INNER JOIN customers as c  
ON c.site=t.customer INNER JOIN products as p ON p.sku2=t.product WHERE c.company_name='  
Alltel Communications LLC' and t.transaction_date BETWEEN date('2014-10-01') AND date('2014-10-31');
```

customer_name	transaction_date	id	product	sku	sku2	product_component	product_item	solution_area	environment_group	environment	external_level1	external_level2	development_group
Alltel Communications LLC	2014-10-02	3616	Easytrieve	4322	EZIQVJ6354000404208	EASYTRIEVE/IQ W/SQL	EASYTRIEVE/IQ W/SQL - JAPANESE	Unassigned	Mainframe	VM	Tools	Other Programmer Development Tools And Utilities	Products - MF Output/Easytrieve
Alltel Communications LLC	2014-10-02	3616	Easytrieve	4322	EZIQVJ6354000404208	EASYTRIEVE/IQ W/SQL	EASYTRIEVE/IQ W/SQL - JAPANESE	Unassigned	Mainframe	VM	Tools	Other Programmer Development Tools And Utilities	Products - MF Output/Easytrieve
Alltel Communications LLC	2014-10-03	736	Desktop DNA	771	DSK783103DNA9133	Unassigned	Unassigned	Change Management	Distributed	Distributed	Network	Change & Configuration Mgt.	Desktop & Server Management / Asset Management
Alltel Communications LLC	2014-10-03	736	Desktop DNA	771	DSK783103DNA9133	Unassigned	Unassigned	Change Management	Distributed	Distributed	Network	Change & Configuration Mgt.	Desktop & Server Management / Asset Management
Alltel Communications LLC	2014-10-07	4448	ARCServe Backup	5188	CAZ7982X1779	Unassigned	Unassigned	Backup Management	Distributed	Distributed	Storage	Backup And Archive Software	Storage Recovery Management
Alltel Communications LLC	2014-10-07	4448	ARCServe Backup	5188	CAZ7982X1779	Unassigned	Unassigned	Backup Management	Distributed	Distributed	Storage	Backup And Archive Software	Storage Recovery Management
Alltel Communications LLC	2014-10-08	9480	Panaudit	11002	P9552NAMANE8479	PANAUDIT PLUS	PANAUDIT PLUS EXTP	Unassigned	Mainframe	VSE	Development	Unified Development Environ	Products - MF Misc
Alltel Communications LLC	2014-10-08	9480	Panaudit	11002	P9552NAMANE8479	PANAUDIT PLUS	PANAUDIT PLUS EXTP	Unassigned	Mainframe	VSE	Development	Unified Development Environ	Products - MF Misc
Alltel Communications LLC	2014-10-15	11379	Pan SQL	12945	PSQ4705IBAS08124	PANSQL	PANSQL	Unassigned	Mainframe	MVS	Access	End-User Query, Reporting And Analysis Tools	Products - MF Output/Easytrieve
Alltel Communications LLC	2014-10-15	11379	Pan SQL	12945	PSQ4705IBAS08124	PANSQL	PANSQL	Unassigned	Mainframe	MVS	Access	End-User Query, Reporting And Analysis Tools	Products - MF Output/Easytrieve
Alltel Communications LLC	2014-10-19	13346	ARCServe Backup	15053	BABWBR1110E1487720028763	Unassigned	Unassigned	Backup Management	Distributed	Distributed	Storage	Backup And Archive Software	Storage Recovery Management
Alltel Communications LLC	2014-10-19	13346	ARCServe Backup	15053	BABWBR1110E1487720028763	Unassigned	Unassigned	Backup Management	Distributed	Distributed	Storage	Backup And Archive Software	Storage Recovery Management
Alltel Communications LLC	2014-10-21	10393	AntiSpyware	11923	ETRPP50H52350ED7621	Unassigned	Unassigned	Unassigned	Distributed	Distributed	Security	Secure Content Management	Threat Management
Alltel Communications LLC	2014-10-21	10393	AntiSpyware	11923	ETRPP50H52350ED7621	Unassigned	Unassigned	Unassigned	Distributed	Distributed	Security	Secure Content Management	Threat Management
Alltel Communications LLC	2014-10-23	12030	Autosys	13716	A2187SMGT1763	UNCTRATSYS	UNCTRATSYS JOB MGT REMOTE AGT	Automation	Distributed	Multi Platform	Network	Job Scheduling	Job Management
Alltel Communications LLC	2014-10-23	12030	Autosys	13716	A2187SMGT1763	UNCTRATSYS	UNCTRATSYS JOB MGT REMOTE AGT	Automation	Distributed	Multi Platform	Network	Job Scheduling	Job Management
Alltel Communications LLC	2014-10-28	6047	Access Control	6951	E29710TRAC7670	Unassigned	Unassigned	Security Management	Distributed	Distributed	Security	IAM	Identity and Access Management
Alltel Communications LLC	2014-10-28	6047	Access Control	6951	E29710TRAC7670	Unassigned	Unassigned	Security Management	Distributed	Distributed	Security	IAM	Identity and Access Management
Alltel Communications LLC	2014-10-28	6902	ARCServe Backup	7990	G4163C10MRBA3152	Unassigned	Unassigned	Backup Management	Distributed	Distributed	Storage	Backup And Archive Software	Storage Recovery Management
Alltel Communications LLC	2014-10-28	6902	ARCServe Backup	7990	G4163C10MRBA3152	Unassigned	Unassigned	Backup Management	Distributed	Distributed	Storage	Backup And Archive Software	Storage Recovery Management

3. How many customers have bought products from the company in October?

SELECT t.transaction_date,t.customer_name,p.* FROM transactions as t INNER JOIN customers as c ON c.site=t.customer INNER JOIN products as p ON p.sku2=t.product WHERE c.company_name='Alltel Communications LLC' and t.transaction_date BETWEEN date('2014-10-02') AND date('2014-10-31')

transaction_date	customer_name	id	product	sku	sku2	product_component	product_item	solution_area	environment_group	environment	external_level1	external_level2	development
2014-10-23	Alltel Communications LLC	12030	Autosys	13716	A2187SMGT1763	UNCTR ATSYS	UNCTR ATSYS JOB MGT REMOTE AGT	Automation	Distributed	Multi Platform	Network	Job Scheduling	Job Manag
2014-10-28	Alltel Communications LLC	6047	Access Control	6951	E29710TRAC7670	Unassigned	Unassigned	Security Management	Distributed	Distributed	Security	IAM	Identity and Manage
2014-10-02	Alltel Communications LLC	3616	Easytrieve	4322	EZIQVJ6354000404208	EASYTRIEVE/IQ W/SQL	EASYTRIEVE/IQ W/SQL - JAPANESE	Unassigned	Mainframe	VM	Tools	Other Programmer Development Tools And Utilities	Products - I Output/Eas
2014-10-15	Alltel Communications LLC	11379	Pan SQL	12945	PSQ4705IBAS08124	PANSQL	PANSQL	Unassigned	Mainframe	MVS	Access	End-User Query Reporting And Analysis Tools	Products - I Output/Eas
2014-10-21	Alltel Communications LLC	10393	AntiSpyware	11923	ETRPP50H52350ED7621	Unassigned	Unassigned	Unassigned	Distributed	Distributed	Security	Secure Content Management	Threat Man
2014-10-03	Alltel Communications LLC	736	Desktop DNA	771	DSK783103DNA9133	Unassigned	Unassigned	Change Management	Distributed	Distributed	Network	Change & Configuration Mgt.	Desktop & Manage
2014-10-08	Alltel Communications LLC	9480	Panaudit	11002	P9552NAMANE8479	PANAUDIT PLUS	PANAUDIT PLUS EXTP	Unassigned	Mainframe	VSE	Development	Unified Development Environ	Products - I
2014-10-07	Alltel Communications LLC	4448	ARCserve Backup	5188	CA27982X1779	Unassigned	Unassigned	Backup Management	Distributed	Distributed	Storage	Backup And Archive Software	Storage Re Manage
2014-10-28	Alltel Communications LLC	6902	ARCserve Backup	7990	G4163C10MRBA3152	Unassigned	Unassigned	Backup Management	Distributed	Distributed	Storage	Backup And Archive Software	Storage Re Manage
2014-10-19	Alltel Communications LLC	13346	ARCserve Backup	15053	BABWBR1110E1487720026763	Unassigned	Unassigned	Backup Management	Distributed	Distributed	Storage	Backup And Archive Software	Storage Re Manage

4. Which customer has spent the most money with the company in October?

SELECT customer_name,SUM(my_value) as total_amount FROM transactions WHERE transaction_date BETWEEN date('2014-10-01') and date('2014-10-31') GROUP BY customer_name ORDER BY customer_name ASC LIMIT 1;

customer_name	total_amount
Alltel Communications LLC	318065

5 How many countries did the company ship products to in October

SELECT country,COUNT(country) as no_of_shipments FROM transactions WHERE transaction_date BETWEEN date('2014-10-01') and date('2014-10-31') GROUP BY country ORDER BY country ASC

+ Options	
country ▲ 1	no_of_shipments
ARUBA	20
AUSTRALIA	2
BAHAMAS	12
BAHRAIN	9
Barbados	67
BELGIUM	7
BELIZE	9
Bermuda	39
BOLIVIA	3
CANADA	19463
CHINA	9
COSTA RICA	11
DOMINICAN REPUBLIC	74
FINLAND	4
FRANCE	16
GERMANY (Deutschland)	8
GUADELOUPE	7
GUATEMALA	3
Honduras	3
HONG KONG (Special Administrative Region of China)	8
India	12
ISRAEL	14
ITALY	5
JAMAICA	27
JAPAN	20

6. Which state in America has the highest number of registered customers

SELECT state,COUNT(state) as no_of_customers FROM customers WHERE country='UNITED STATES' and state<>' ' GROUP BY state ORDER BY no_of_customers DESC LIMIT 1;

+ Options	
state	no_of_customers
CA	7461

7. Which solution area has the most product sku's within it

SELECT solution_area, COUNT(solution_area) as count_of_product FROM products GROUP BY solution_area ORDER BY count_of_product DESC LIMIT 1

+ Options

solution_area	count_of_product
Unassigned	7405

8. On which day were the most products sold

```
SELECT transaction_date,product_name,COUNT(transaction_date) as no_of_product_sell FROM
transactions GROUP BY transaction_date,product_name ORDER BY no_of_product_sell DESC LIMIT
1;
```

+ Options

transaction_date	product_name	no_of_product_sell
2014-10-12	ARCserve Backup	1716

9. Which development group had the most sales in October

```
SELECT p.development_group,COUNT(p.development_group) as number_of_sales FROM
transactions as t INNER JOIN products as p ON p.sku2=t.product WHERE t.transaction_date
BETWEEN date('2014-10-01') and date('2014-10-31') GROUP BY p.development_group ORDER BY
number_of_sales DESC LIMIT 1;
```

+ Options

development_group	number_of_sales
Storage Recovery Management	46740

10. Which industry vertical had the lowest number of sales in October

```
SELECT c.industry_vertical,COUNT(c.industry_vertical) as no_of_sales FROM customers as c INNER
JOIN transactions as t ON t.customer=c.site WHERE t.transaction_date BETWEEN date('2014-10-01')
and date('2014-10-31') GROUP BY c.industry_vertical ORDER BY no_of_sales ASC LIMIT 1
```

+ Options

industry_vertical	no_of_sales
Utilities	2813

11. Which solution area has the lowest number of sales in the Retail industry vertical

```
SELECT solution_area, COUNT(solution_area) as sale_of_product FROM products GROUP BY  
solution_area ORDER BY sale_of_product ASC LIMIT 1
```

+ Options

solution_area	sale_of_product
UNICENTER NETWK&SYSTEM MGT TIERED	1