***The Product Company***

**~ Final Data Mart Development Report ~**

Team # 2

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12/11/15

ISTE Data Warehousing

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# I. Data Mart Design Definition

## 1. Universe of Discourse

|  |
| --- |
| The company would like a data mart that would allow them to investigate their financial performance at the gross profit (marginal) level historically so as to more effectively manage financial performance and sales to external clients and within division. |

## 2. Information Package

Process Name: TPC Product Sales Analysis

Grain: Sale of a product to a customer on a particular day.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Product** | **Customer** | **Supplier** | **Transaction**  **Profile**  **Dimension** | **saleDate** | **orderDate** |
| Product\_sk | Customer\_sk | Supplier\_sk | TPD\_sk | salesDate\_sk | orderDate\_sk |
| BUID | custTypeID | supplierName | specialShipping | saleDateID | orderDateID |
| prodTypeID | customerID | supplierAddr1 | orderingMethod | saleYear | orderYear |
| prodID | typeName | supplierAddr2 | paymentMethod | saleQuarter | orderQuarter |
| businessName | name | supplierCity | insideSalesTag | saleMonth | orderMonth |
| BusinessAbbrev | Addr1 | supplierState | TPDCompany | saleWeek | orderWeek |
| typeDescription | Addr2 | supplierZip |  | saleFiscalYear | orderFiscalYear |
| prodDecription | city | supplierCompany |  | saleFiscalQuarter | orderFiscalQuarter |
| Price1 | state |  |  | saleFiscalMonth | orderFiscalMonth |
| Price 2 | Zip |  |  | saleFiscalWeek | orderFiscalWeek |
| unitCost | customerCompany |  |  | Month\_Day\_Number | Month\_Day\_Number |
| productCompany |  |  |  | Day | Day |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Facts: amount, quantity, Cost, Margin and manufactureTime. | | | | | |

References:

Kimball, R., & Ross, M. (2011). *The data warehouse toolkit: the complete guide to dimensional modeling*. John Wiley & Sons.

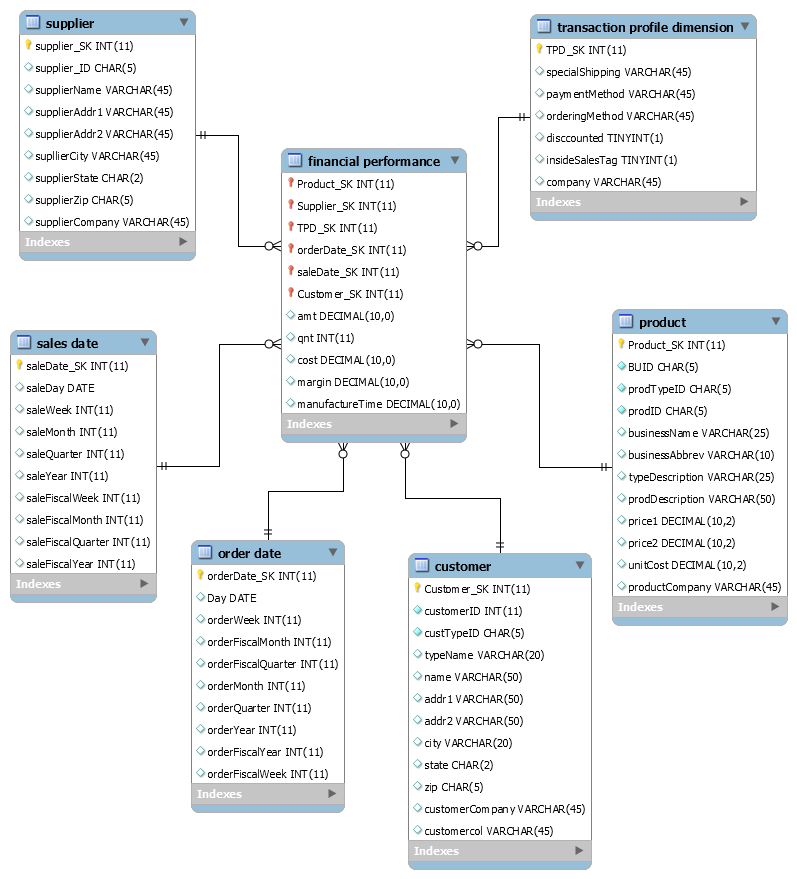
3. Entity Definitions

|  |  |
| --- | --- |
| **Entity** | **Entity Definition** (*genus differentia*) |
| Customer | Businesses, private or public, buying industrial product from The Product Company East (TPC E), TPC W and PEC. |
| Product | Industrial substances whose value can be determined in an exchange. |
| Supplier | Businesses, providing industrial substances to The Product Company (TPC) (East and West) for selling. |
| Transactional Profile Dimension | It is a junk dimension, which has the following attributes specialShipping method to denote the any special way in which the product was delivered to the customer. OrderingMethod refers to the methods in which customer placed their orders. PaymentMethod refers to the way in which payment for the order was made. It has also Boolean flags to mark the discounted and internal sale transactions. |
| SalesDate | It refers to the date on which the order was sold or shipped to the customer. It has multiple hierarchies in it, representing the calendar as well as fiscal year. |
| OrderDate | It refers to the date on which the order by the customer. It has multiple hierarchies in it, representing the calendar as well as fiscal year. |
| Financial Performance. | It is the fact table of the data mart, it contains surrogate keys from all the dimensions as well as some business metrics like amount, quantity of product sold, days taken to deliver. |
| Product Type | Industrial substances grouped together based rules defined by The ProductCompany (TPC) in handling operational complexities. |
| Business Unit | Organization or organizational subset that is independent that is independent with regard to one or more operations. |

References:

Chen, P. P. S. (1976). The entity-relationship model—toward a unified view of data. *ACM Transactions on Database Systems (TODS)*, *1*(1), 9-36.

***II.*** Dimensional Model



References:

Moody, D. L., & Kortink, M. A. (2000, June). From enterprise models to dimensional models: a methodology for data warehouse and data mart design. In *DMDW* (p. 5).

Kimball, R., & Ross, M. (2002). The data warehouse toolkit: the complete guide to dimensional modelling. *Nachdr.]. New York [ua]: Wiley*.

III. Data Staging: ETL – Data Extract File Definitions

**TPCE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCEbusiness\_unit | csv file | BUID | String | Unique identifier for each business unit. |
|  |  | NAME | String | Describes the name of each business unit. |
|  |  | ABBREV | String | Gives abbreviation for each business unit. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCEcustomer | csv file | CUSTID | Integer | Unique identifier for each customer of TPC-E. |
|  |  | NAME | String | Describes the company name or the individual customers' name. |
|  |  | ADDR1 | String | Address of customer's location. Contains Department number or Suite number. |
|  |  | ADDR2 | String | Address of customer's location. Contains rest of the address. |
|  |  | CITY | String | Name of the city where the customer is located. |
|  |  | STATE | String | Name of the state where the customer is located. |
|  |  | ZIP | Integer | The 5 digit zip code for the customer's location. |
|  |  | CUSTTYPEID | String | Indicates the line of business that the customer belongs to. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCEcustomer\_type | csv file | CUSTTYPEID | String | Unique identifier for each customer type. |
|  |  | TYPENAME | String | Indicates the line of business that the customer belongs to. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCEproduct | csv file | PRODID | Integer | Unique identifier for each product sold by TPCE. |
|  |  | DESCRIPTION | String | Describes the individual product sold by TPCE. |
|  |  | PRICE1 | Number | Indicates original price of each product. |
|  |  | PRICE2 | Number | Indicates discounted price of each product. |
|  |  | PRODTYPEID | Integer | Unique identifier for each product type. |
|  |  | UNITCOST | Number | Indicates cost per unit of the product. It is obtained by dividing manufacturing cost of a product in a particular month by quantity sold of the same product in the same month. |
|  |  | SUPPLIERID | Integer | Unique identifier for each supplier who supplies material to TPCE. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCEproduct\_type | csv file | PRODTYPEID | Integer | Unique identifier for each product type. |
|  |  | TYPEDESCRIPTION | String | Indicates a specific type of product. |
|  |  | BUID | String | Unique identifier for each business unit. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCEinvoice | csv file | invoiceID | Integer | Unique identifier on the bill for the purchases made by a customer. |
|  |  | custID | Integer | Unique identifier for each customer of TPC-E. |
|  |  | salesDate | Date | Indicates the date on which the product is sold. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCEinvoice\_details | csv file | invoiceID | Integer | Unique identifier on the bill for the purchases made. |
|  |  | prodID | Integer | Unique identifier for each product sold by TPCE. |
|  |  | amt | Number | Indicates the total amount for the purchase of the product. It varies as the quantity of the product purchased varies. |
|  |  | qty | Integer | Total number of the same product purchased. |
|  |  | discounted | Integer | Indicates whether the discount is given on a product or not. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCEsupplier | csv file | SUPPLIERID | Integer | Unique identifier for each supplier who supplies material to TPCE. |
|  |  | NAME | String | Describes the company name or the individual suppliers' name. |
|  |  | ADDR1 | String | Name of the individual or group who should pay the most attention to the supplied package. |
|  |  | ADDR2 | String | Address of customer's location. Contains rest of the address. |
|  |  | CITY | String | Name of the city where the customer is located |
|  |  | STATE | String | Name of the state where the customer is located |
|  |  | ZIP | Integer | The 5 digit zip code for the supplier's location. |

**TPCW**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCWbusiness\_unit | csv file | BUID | String | Unique identifier for each business unit. |
|  |  | NAME | String | Describes the name of each business unit. |
|  |  | ABBREV | String | Gives abbreviation for each business unit. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCWcustomer | csv file | custID | Integer | Unique identifier for each customer of TPC-W. |
|  |  | name | String | Describes the company name or the individual customers' name. |
|  |  | address | String | Address of customer's location. Contains Department number or Suite number and rest of the address. |
|  |  | city | String | Name of the city where the customer is located. |
|  |  | state | String | Name of the state where the customer is located. |
|  |  | zip | Integer | The 5 digit zip code for the customer's location. |
|  |  | custtype | String | Indicates the line of business that the customer belongs to. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCWcustomer\_type | csv file | CUSTTYPEID | String | Unique identifier for each customer type. |
|  |  | TYPENAME | String | Indicates the line of business that the customer belongs to. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCWproduct | csv file | ProductID | Integer | Unique identifier for each product sold by TPCW. |
|  |  | Product Name | String | Describes the individual product sold by TPCW. |
|  |  | Price1 | Number | Indicates original price of each product. |
|  |  | Price2 | Number | Indicates discounted price of each product. |
|  |  | Unit Cost | Number | Indicates cost per unit of the product. It is obtained by dividing manufacturing cost of a product in a particular month by quantity sold of the same product in the same month. |
|  |  | Supplier Name | String | Describes the company name or the individual suppliers' name. |
|  |  | Supplier Address1 | String | Name of the individual or group who should pay the most attention to the supplied package. |
|  |  | Supplier Address2 | String | Address of customer's location. Contains rest of the address. |
|  |  | Supplier city and State | String | Name of the city and state where the supplier is located. |
|  |  | Supplier zipcode | Integer | The 5 digit zip code for the supplier's location. |
|  |  | Product type ID | Integer | Unique identifier for each product type. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCWproduct\_type | csv file | PRODTYPEID | Integer | Unique identifier for each product type. |
|  |  | TYPEDESCRIPTION | String | Indicates a specific type of product. |
|  |  | BUID | String | Unique identifier for each business unit. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCWsales\_new | csv file | invoice | Integer | Unique identifier on the bill for the purchases made by a customer. |
|  |  | custID | Integer | Unique identifier for each customer of TPC-W. |
|  |  | prodID | Integer | Unique identifier for each product sold by TPCW. |
|  |  | salesDate | String | Indicates the date on which the product is sold. |
|  |  | amt | Integer | Indicates the total amount for the purchase of the product. It varies as the quantity of the product purchased varies. |
|  |  | qty | Integer | Total number of the same product purchased. |
|  |  | discounted | Integer | Indicates whether the discount is given on a product or not. |

**PEC**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| TPCEbusiness\_unit | csv file | BUID | String | Unique identifier for each business unit. |
|  |  | NAME | String | Describes the name of each business unit. |
|  |  | ABBREV | String | Gives abbreviation for each business unit. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| customer\_type | csv file | CUSTTYPEID | String | Unique identifier for each customer type. |
|  |  | TYPENAME | String | Indicates the line of business that the customer belongs to. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| customer | csv file | custID | Integer | Unique identifier for each customer of PEC. |
|  |  | name | String | Describes the company name or the individual customers' name. |
|  |  | address | String | Address of customer's location. Contains Department number or Suite number and rest of the address. |
|  |  | city | String | Name of the city where the customer is located. |
|  |  | state | String | Name of the state where the customer is located. |
|  |  | zip | Integer | The 5 digit zip code for the customer's location. |
|  |  | custtype | String | Indicates the line of business that the customer belongs to. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| ProductType | csv file | PRODTYPEID | String | Unique identifier for each product type. |
|  |  | TYPEDESCRIPTION | String | Indicates a specific type of product. |
|  |  | BUID | String | Unique identifier for each business unit. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| product | csv file | prodid | Integer | Unique identifier for each product sold by PEC. |
|  |  | prodDescription | String | Describes the individual product sold by PEC. |
|  |  | price1 | Number | Indicates original price of each product. |
|  |  | price2 | Number | Indicates discounted price of each product. |
|  |  | unitCost | Number | Indicates cost per unit of the product. It is obtained by dividing manufacturing cost of a product in a particular month by quantity sold of the same product in the same month. |
|  |  | supplierName | String | Describes the company name or the individual suppliers' name. |
|  |  | productTypeID | String | Unique identifier for each product type. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| Manufacturing  Costs | csv file | Year | Integer | The year in which the product was manufactured. |
|  |  | Month | Integer | The month of the year in which the product was manufactured. |
|  |  | prodID | Integer | Unique identifier for each product sold by PEC. |
|  |  | manufacturingCost | Integer | Cost of manufacturing a product per month. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **File** | **File Format** | **Attribute Name** | **Attribute DataType** | **Attribute Description** |
| sales\_new | csv file | Invoice | Integer | Unique identifier on the bill for the purchases made by a customer. |
|  |  | custID | String | Unique identifier for each customer of PEC. |
|  |  | salesDate | Date | Indicates the date on which the product is sold. |
|  |  | prodid | Integer | Unique identifier for each product sold by PEC. |
|  |  | amt | Integer | Indicates the total amount for the purchase of the product. It varies as the quantity of the product purchased varies. |
|  |  | qty | Integer | Total number of the same product purchased. |
|  |  | shipMethod | String | Indicates the special requirement of shipping, i.e., by train, truck or air for the product to be shipped. |
|  |  | shipCost | Number | Indicates the cost of shipping the purchase. |
|  |  | paymentMethod | String | Indicates whether the payment mode of the purchase is made by cash, charge or cash-on-delivery. |
|  |  | orderMethod | String | Indicates whether the order was placed through internet, phone or email. |
|  |  | orderDate | Date | Indicates the date on which the order of the product was placed. |
|  |  | discounted | Integer | Indicates whether the discount is given on a product or not. |

# 

# IV.Data Staging: ETL – Source-to-Target Mappings

Follow the same format as indicated in “The Data Warehouse ETL Toolkit” by Kimball & Caserta, Fig. 3.1 on page 60. This is available on Books 24x7. The table should be in alphabetical order table name and column name.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Target | | | | | | | | | Source | | | | | | Transformation | | |
| Table Name | Column Name | | Data Type | | Table Type | | SCD Type | | Database Name | | Table Name | Column Name | | DataType | | | Transformation |
| Customer | Addr1 | | Varchar(50) | | Dimension | | 2 | | FINANCEDW | | TPCEcustomer,TPCWcustomer,PECcustomer | ADDR1,Address,address | | String | | | Using Excel |
| Customer | Addr2 | | Varchar(50) | | Dimension | | 2 | | FINANCEDW | | TPCEcustomer,TPCWcustomer,PECcustomer | ADDR2,Address,address | | String | | | Using Excel |
| Customer | City | | Varchar(20) | | Dimension | | 2 | | FINANCEDW | | TPCEcustomer,TPCWcustomer,PECcustomer | CITY,city,city | | String | | | Using Excel |
| Customer | CustomerSK | | Integer(11) | | Dimension | | 1 | | FINANCEDW | |  |  | |  | | | Surrogate key. |
| Customer | typeName | | Varchar(20) | | Dimension | | 2 | | FINANCEDW | | TPCEcustomer\_type,TPCWcustomer\_type,PECcustomer\_type | TYPENAME | | String | | | Using Excel |
| Customer | Name | | Varchar(50) | | Dimension | | 2 | | FINANCEDW | | TPCEcustomer,TPCWcustomer,PECcustomer | NAME,name,name | | String | | | Using Excel |
| Target | | | | | | | | | Source | | | | | | | Transformation | |
| Table Name | | Column Name | | Data Type | | Table Type | | SCD Type | Database Name | Table Name | | Column Name | DataType | | |  | |
| Customer | | State | | Char(2) | | Dimension | | 2 | FINANCEDW | TPCEcustomer,TPCWcustomer,PECcustomer | | STATE,state,state | String | | | Using Excel | |
| Customer | | custTypeID | | Integer(11) | | Dimension | | 1 | FINANCEDW | TPCEcustomer | | CUSTID | Integer | | | Using Excel | |
| Customer | | Zip | | Char(5) | | Dimension | | 2 | FINANCEDW | TPCEcustomer,TPCWcustomer,PECcustomer | | ZIP,zip,zip | Integer | | | Using Excel | |
| Customer | | customerCompany | | Varchar(45) | | Dimension | | 1 | FINANCEDW | TPCEcustomer,TPCWcustomer,PECcustomer | | name | String | | | Using Excel | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Product | BUID | | | | Char(5) | | | | Dimension | | | | | | 2 | | | | | | FINANCEDW | | | | TPCEbusiness\_unit,TPCWbusiness\_unit, PECbusiness\_unit | | | | | | NAME | | | | | | String | | | | | | Using Excel | | | | |  |
| Product | Busi inessAbbrev | | | | Varchar(10) | | | | Dimension | | | | | | 2 | | | | | | FINANCEDW | | | | TPCEbusiness\_unit,TPCWbusiness\_unit, PECbusiness\_unit | | | | | | ABBREV | | | | | | String | | | | | | Using Excel | | | | |  |
| product | prodDescription | | | | Varchar(50) | | | | Dimension | | | | | | 2 | | | | | | FINANCEDW | | | | TPCEproduct,TPCWproduct,PECproduct | | | | | | DESCRIPTION,Product Name,prodDescription | | | | | | String | | | | | | Using Excel | | | | |  |
| Product | UnitCost | | | | Decimal(10,2) | | | | Dimension | | | | | | 1 | | | | | | FINANCEDW | | | | PECproduct | | | | | | unitCost | | | | | | Number | | | | | | Using Excel | | | | |  |
| Product | Price1 | | | | Decimal(10,2) | | | | Dimension | | | | | | 1 | | | | | | FINANCEDW | | | | TPCEproduct,TPCWproduct,PECproduct | | | | | | Price1 | | | | | | Number | | | | | | Using Excel | | | | |  |
|  |  | | | |  | | | |  | | | | | |  | | | | | |  | | | |  | | | | | |  | | | | | |  | | | | | |  | | | | |  |
| Target | | | | | | | | | | | | | | | | | | | | | Source | | | | | | | | | | | | | | | | | | | | | | Transformation | | | | |  |
| Table Name | | Column Name | | | | Data Type | | | | | Table Type | | | | | SCD Type | | | | | Database Name | | | | | | Table Name | | | | | | Column Name | | | | | | DataType | | | |  | | | | |  |
| Product | | prodTypeID | | | | Char(5) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | TPCEproduct | | | | | | PRODID | | | | | | Integer | | | | Using Excel | | | | |  |
| Product | | typeDescription | | | | Varchar(50) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | TPCEproduct\_type,TPCWproduct\_type,PECproduct\_type | | | | | | TYPEDESCRIPTION | | | | | | String | | | | Using Excel | | | | |  |
| Product | | Price2 | | | | Decimal(10,2) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | TPCEproduct,TPCWproduct,PECproduct | | | | | | Price2 | | | | | | Number | | | | Using Excel | | | | |  |
| Product | | ProductSK | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | |  | | | | | |  | | | | | |  | | | | Surrogate key. | | | | |  |
| Product | | businessName | | | | Varchar(25) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | TPCEproduct,TPCWproduct,PECproduct | | | | | | name | | | | | | string | | | | Surrogate key. | | | | |  |
| orderDate | | orderMonth | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | PECsales\_new | | | | | | orderDate | | | | | | Date | | | | Using Excel | | | | |  |
| orderDate | | orderQuarter | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | PECsales\_new | | | | | | orderDate | | | | | | Date | | | | Using Excel | | | | |  |
| orderDate | | orderYear | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | PECsales\_new | | | | | | orderDate | | | | | | Date | | | | Using Excel | | | | |  |
| orderDate | | Day | | | | Date | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | PECsales\_new | | | | | | orderDate | | | | | | Date | | | | Using Excel | | | | |  |
| orderDate | | orderFiscalMonth | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | PECsales\_new | | | | | | orderDate | | | | | | Date | | | | Using Excel | | | | |  |
| orderDate | | orderFiscalQuarter | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | PECsales\_new | | | | | | orderDate | | | | | | Date | | | | Using Excel | | | | |  |
| orderDate | | orderFiscalYear | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | PECsales\_new | | | | | | orderDate | | | | | | Date | | | | Using Excel | | | | |  |
| orderDate | | OrderDateSK | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | |  | | | | | |  | | | | | |  | | | | Surrogate key. | | | | |  |
| orderDate | | orderWeek | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | PECsales\_new | | | | | | orderDate | | | | | | Date | | | | Using Excel | | | | |  |
| orderDate | | orderFiscalWeek | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | PECsales\_new | | | | | | orderDate | | | | | | Date | | | | Using Excel | | | | |  |
| salesDate | | saleMonth | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | TPCEinvoice,TPCWsales\_new,PECsales\_new | | | | | | salesDate,salesDate,salesDate | | | | | | Date,String,Date | | | | Using Excel | | | | |  |
| salesDate | | saleQuarter | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | TPCEinvoice,TPCWsales\_new,PECsales\_new | | | | | | salesDate,salesDate,salesDate | | | | | | Date,String,Date | | | | Using Excel | | | | |  |
| salesDate | | saleYear | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | TPCEinvoice,TPCWsales\_new,PECsales\_new | | | | | | salesDate,salesDate,salesDate | | | | | | Date,String,Date | | | | Using Excel | | | | |  |
| salesDate | | saleDay | | | | Date | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | TPCEinvoice,TPCWsales\_new,PECsales\_new | | | | | | salesDate,salesDate,salesDate | | | | | | Date,String,Date | | | | Using Excel | | | | |  |
| salesDate | | saleFiscalYear | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | | TPCEinvoice,TPCWsales\_new,PECsales\_new | | | | | | salesDate,salesDate,salesDate | | | | | | Date,String,Date | | | | Using Excel | | | | |  |
| salesDate | | SalesDate\_SK | | | | Integer(11) | | | | | Dimension | | | | | 1 | | | | | FINANCEDW | | | | | |  | | | | | |  | | | | | |  | | | | Surrogate key. | | | | |  |
| Target | | | | | | | | | | | | | | | | | | | | | Source | | | | | | | | | | | | | | | | | | | | | | | | Transformation | | | |
| Table Name | | | Column Name | | | Data Type | | | | | Table Type | | | | | | SCD Type | | | | FINANCEDW | | | | | | Table Name | | | | | | Column Name | | | | | | | | DataType | | | |  | | | |
| salesDate | | | saleFiscalMonth | | | Integer(11) | | | | | Dimension | | | | | | 1 | | | | FINANCEDW | | | | | | TPCEinvoice,TPCWsales\_new,PECsales\_new | | | | | | salesDate,salesDate,salesDate | | | | | | | | Date,String,Date | | | | Using Excel | | | |
| salesDate | | | saleFiscalQuarter | | | Integer(11) | | | | | Dimension | | | | | | 1 | | | | FINANCEDW | | | | | | TPCEinvoice,TPCWsales\_new,PECsales\_new | | | | | | salesDate,salesDate,salesDate | | | | | | | | Date,String,Date | | | | Using Excel | | | |
| salesDate | | | saleWeek | | | Integer(11) | | | | | Dimension | | | | | | 1 | | | | FINANCEDW | | | | | | TPCEinvoice,TPCWsales\_new,PECsales\_new | | | | | | salesDate,salesDate,salesDate | | | | | | | | Date,String,Date | | | | Using Excel | | | |
| salesDate | | | saleFiscalWeek | | | Integer(11) | | | | | Dimension | | | | | | 1 | | | | FINANCEDW | | | | | | TPCEinvoice,TPCWsales\_new,PECsales\_new | | | | | | salesDate,salesDate,salesDate | | | | | | | | Date,String,Date | | | | Using Excel | | | |
| supplier | | | supplierAddr1 | | | Varchar(45) | | | | | Dimension | | | | | | 2 | | | | FINANCEDW | | | | | | TPCEsupplier,TPCWproduct, | | | | | | ADDR1,Supplier Address1 | | | | | | | | String | | | | Using Excel | | | |
| supplier | | | supplierAddr2 | | | Varchar(45) | | | | | Dimension | | | | | | 2 | | | | FINANCEDW | | | | | | TPCEsupplier,TPCWproduct, | | | | | | ADDR2,Supplier Address2 | | | | | | | | String | | | | Using Excel | | | |
| supplier | | | supplierCity | | | Varchar(45) | | | | | Dimension | | | | | | 2 | | | | FINANCEDW | | | | | | TPCEsupplier,TPCWproduct, | | | | | | CITY,Supplier city and State | | | | | | | | String | | | | Using Excel | | | |
| supplier | | | supplierName | | | Varchar(45) | | | | | Dimension | | | | | | 2 | | | | FINANCEDW | | | | | | TPCEsupplier,TPCWproduct,PECproduct | | | | | | NAME,Supplier Name,supplierName | | | | | | | | String | | | | Using Excel | | | |
| supplier | | | supplier\_ID | | | Char(5) | | | | | Dimension | | | | | | 2 | | | | FINANCEDW | | | | | | TPCEsupplier,TPCWproduct,PECproduct | | | | | | NAME,Supplier Name,supplierName | | | | | | | | Integer | | | | Using Excel | | | |
|  | | |  | | |  | | | | |  | | | | | |  | | | |  | | | | | |  | | | | | |  | | | | | | | |  | | | |  | | | |
| Target | | | | | | | | | | | | | | | | | | | | | | | Source | | | | | | | | | | | | | | | | | | | | | | Transformation | | | |
| Table Name | | | Column Name | | | | | Data Type | | | | | Table Type | | | | | | SCD Type | | | | Database Name | | | | | | Table Name | | | | | | Column Name | | | | | | DataType | | | |  | | | |
| Supplier | | | supplierState | | | | | Char(2) | | | | | Dimension | | | | | | 2 | | | | FINANCEDW | | | | | | TPCEsupplier,TPCWproduct, | | | | | | STATE,Supplier city and State | | | | | | String | | | | Using Excel | | | |
| Supplier | | | Supplier\_SK | | | | | Integer(11) | | | | | Dimension | | | | | | 1 | | | | FINANCEDW | | | | | |  | | | | | |  | | | | | |  | | | | Surrogate key. | | | |
| Supplier | | | supplierCompany | | | | | Varchar(45) | | | | | Dimension | | | | | | 1 | | | | FINANCEDW | | | | | | TPCEsupplier | | | | | | SUPPLIERID | | | | | | Integer | | | | Using Excel | | | |
| Supplier | | | supplierZip | | | | | Char(5) | | | | | Dimension | | | | | | 2 | | | | FINANCEDW | | | | | | TPCEsupplier,TPCWproduct, | | | | | | ZIP,Supplier zipcode | | | | | | Integer | | | | Using Excel | | | |
| Transaction profile dimension | | | OrderingMethod | | | | | Varchar(45) | | | | | Dimension | | | | | | 1 | | | | FINANCEDW | | | | | | PECsales\_new | | | | | | orderMethod | | | | | | String | | | | Using Excel | | | |
| Transaction profile dimension | | | paymentMethod | | | | | Varchar(45) | | | | | Dimension | | | | | | 1 | | | | FINANCEDW | | | | | | PECsales\_new | | | | | | paymentMethod | | | | | | String | | | | Using Excel | | | |
| Transaction profile dimension | | | TPD\_SK | | | | | Integer(11) | | | | | Dimension | | | | | | 1 | | | | FINANCEDW | | | | | |  | | | | | |  | | | | | |  | | | | Surrogate key. | | | |
| Transaction profile dimension | | | specialShipping | | | | | Varchar(45) | | | | | Dimension | | | | | | 1 | | | | FINANCEDW | | | | | | PECsales\_new | | | | | | shipMethod | | | | | | String | | | | Using Excel | | | |
| Transaction profile dimension | | | discounted | | | | | TINYINT(1) | | | | | Dimension | | | | | | 1 | | | | FINANCEDW | | | | | | PECsales\_new | | | | | | Discount | | | | | | boolena | | | | Using Excel | | | |
| Transaction profile dimension | | | insideSalesTag | | | | | TINYINT(1) | | | | | Dimension | | | | | | 1 | | | | FINANCEDW | | | | | |  | | | | | |  | | | | | | boolena | | | | Using Excel | | | |
| Target | | | | | | | | | | | | | | | | | | | | | | | Source | | | | | | | | | | | | | | | | | | | | | | Transformation | | | |
| Table Name | | Column Name | | | | | | Data Type | | | | | Table Type | | | | | | SCD Type | | | | Database Name | | | | | | Table Name | | | | | | Column Name | | | | | | DataType | | | |  | | | |
|  | | |  |  | | |  | | |  | |  | |  | | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  | | |

# 

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Financial performance | amt | Decimal(10,0) | Fact | N/A | FINANCEDW | TPCEinvoice\_details,TPCWsales\_new,PECsales\_new | amt | Integer | Using Excel |
| Financial performance | Cost | Decimal(10,0) | Fact | N/A | FINANCEDW | PECmanufacturingCosts | manufacturingCost | Integer | Using Excel |
| Financial performance | Customer\_SK | Integer(11) | Fact | N/A | FINANCEDW | Customer\_dim | CustomerSK | INTEGER(11) | Using Excel |
| Financial performance | margin | Decimal(10,0 | Fact | N/A | FINANCEDW |  |  |  | Using Excel |
| Financial performance | manufactureTime | Decimal(10,0) | Fact | N/A | FINANCEDW |  |  |  | Using Excel |
| Financial performance | orderDate\_SK | Integer(11) | Fact | N/A | FINANCEDW | orderDate | orderDate\_SK | INTEGER(11) | Using Excel |
| Financial performance | TPD\_SK | Integer(11) | Fact | N/A | FINANCEDW | Transaction profile dimension | TPD\_SK | INTEGER(11) | Using Excel |
| Financial performance | Product\_SK | Integer(11) | Fact | N/A | FINANCEDW | product | Product\_SK | INTEGER(11) | Using Excel |
| Financial performance | qnt | Integer(11) | Fact | N/A | FINANCEDW | TPCEinvoice\_details,TPCWsales\_new,PECsales\_new | qty | Integer | Using Excel |
| Financial performance | saleDate\_SK | Integer(11) | Fact | N/A | FINANCEDW | Sales Date | saleDate\_SK | INTEGER(11) | Using Excel |
| Financial performance | Supplier\_SK | Integer(11) | Fact | N/A | FINANCEDW | Supplier | Supplier\_SK | INTEGER(11) | Using Excel |

# 

# References:

Kimball, R., & Caserta, J. (2004). The data warehouse ETL toolkit: practical techniques for extracting. *Cleaning, Conforming, and Delivering Data*, 528.

V. SQL Code – Tables & Constraints

# -- MySQL Workbench Forward Engineering

# 

# SET @OLD\_UNIQUE\_CHECKS=@@UNIQUE\_CHECKS, UNIQUE\_CHECKS=0;

# SET @OLD\_FOREIGN\_KEY\_CHECKS=@@FOREIGN\_KEY\_CHECKS, FOREIGN\_KEY\_CHECKS=0;

# SET @OLD\_SQL\_MODE=@@SQL\_MODE, SQL\_MODE='TRADITIONAL,ALLOW\_INVALID\_DATES';

# 

# -- -----------------------------------------------------

# -- Schema mydb

# -- -----------------------------------------------------

# -- -----------------------------------------------------

# -- Schema financedw

# -- -----------------------------------------------------

# 

# -- -----------------------------------------------------

# -- Schema financedw

# -- -----------------------------------------------------

# CREATE SCHEMA IF NOT EXISTS `financedw` DEFAULT CHARACTER SET utf8 ;

# USE `financedw` ;

# 

# -- -----------------------------------------------------

# -- Table `financedw`.`customer`

# -- -----------------------------------------------------

# CREATE TABLE IF NOT EXISTS `financedw`.`customer` (

# `Customer\_SK` INT(11) NOT NULL COMMENT '',

# `customerID` INT(11) NOT NULL COMMENT '',

# `custTypeID` CHAR(5) NOT NULL COMMENT '',

# `typeName` VARCHAR(20) NULL DEFAULT NULL COMMENT '',

# `name` VARCHAR(50) NULL DEFAULT NULL COMMENT '',

# `addr1` VARCHAR(50) NULL DEFAULT NULL COMMENT '',

# `addr2` VARCHAR(50) NULL DEFAULT NULL COMMENT '',

# `city` VARCHAR(20) NULL DEFAULT NULL COMMENT '',

# `state` CHAR(2) NULL DEFAULT NULL COMMENT '',

# `zip` CHAR(5) NULL DEFAULT NULL COMMENT '',

# `customerCompany` VARCHAR(45) NULL DEFAULT NULL COMMENT '',

# `customercol` VARCHAR(45) NULL DEFAULT NULL COMMENT '',

# PRIMARY KEY (`Customer\_SK`) COMMENT '')

# ENGINE = InnoDB

# DEFAULT CHARACTER SET = utf8;

# 

# 

# -- -----------------------------------------------------

# -- Table `financedw`.`supplier`

# -- -----------------------------------------------------

# CREATE TABLE IF NOT EXISTS `financedw`.`supplier` (

# `supplier\_SK` INT(11) NOT NULL COMMENT '',

# `supplier\_ID` CHAR(5) NULL DEFAULT '' COMMENT '',

# `supplierName` VARCHAR(45) NULL DEFAULT NULL COMMENT '',

# `supplierAddr1` VARCHAR(45) NULL DEFAULT NULL COMMENT '',

# `supplierAddr2` VARCHAR(45) NULL DEFAULT NULL COMMENT '',

# `supllierCity` VARCHAR(45) NULL DEFAULT NULL COMMENT '',

# `supplierState` CHAR(2) NULL DEFAULT NULL COMMENT '',

# `supplierZip` CHAR(5) NULL DEFAULT NULL COMMENT '',

# `supplierCompany` VARCHAR(45) NULL DEFAULT NULL COMMENT '',

# PRIMARY KEY (`supplier\_SK`) COMMENT '')

# ENGINE = InnoDB

# DEFAULT CHARACTER SET = utf8;

# 

# 

# -- -----------------------------------------------------

# -- Table `financedw`.`transaction profile dimension`

# -- -----------------------------------------------------

# CREATE TABLE IF NOT EXISTS `financedw`.`transaction profile dimension` (

# `TPD\_SK` INT(11) NOT NULL COMMENT '',

# `specialShipping` VARCHAR(45) NULL DEFAULT NULL COMMENT '',

# `paymentMethod` VARCHAR(45) NULL DEFAULT NULL COMMENT '',

# `orderingMethod` VARCHAR(45) NULL DEFAULT NULL COMMENT '',

# `disccounted` TINYINT(1) NULL DEFAULT NULL COMMENT '',

# `insideSalesTag` TINYINT(1) NULL DEFAULT NULL COMMENT '',

# `company` VARCHAR(45) NULL DEFAULT NULL COMMENT '',

# PRIMARY KEY (`TPD\_SK`) COMMENT '')

# ENGINE = InnoDB

# DEFAULT CHARACTER SET = utf8;

# 

# 

# -- -----------------------------------------------------

# -- Table `financedw`.`product`

# -- -----------------------------------------------------

# CREATE TABLE IF NOT EXISTS `financedw`.`product` (

# `Product\_SK` INT(11) NOT NULL COMMENT '',

# `BUID` CHAR(5) NOT NULL COMMENT '',

# `prodTypeID` CHAR(5) NOT NULL COMMENT '',

# `prodID` CHAR(5) NOT NULL COMMENT '',

# `businessName` VARCHAR(25) NULL DEFAULT NULL COMMENT '',

# `businessAbbrev` VARCHAR(10) NULL DEFAULT NULL COMMENT '',

# `typeDescription` VARCHAR(25) NULL DEFAULT NULL COMMENT '',

# `prodDescription` VARCHAR(50) NULL DEFAULT NULL COMMENT '',

# `price1` DECIMAL(10,2) NULL DEFAULT NULL COMMENT '',

# `price2` DECIMAL(10,2) NULL DEFAULT NULL COMMENT '',

# `unitCost` DECIMAL(10,2) NULL DEFAULT NULL COMMENT '',

# `productCompany` VARCHAR(45) NULL DEFAULT NULL COMMENT '',

# PRIMARY KEY (`Product\_SK`) COMMENT '')

# ENGINE = InnoDB

# DEFAULT CHARACTER SET = utf8;

# 

# 

# -- -----------------------------------------------------

# -- Table `financedw`.`order date`

# -- -----------------------------------------------------

# CREATE TABLE IF NOT EXISTS `financedw`.`order date` (

# `orderDate\_SK` INT(11) NOT NULL DEFAULT '00000' COMMENT '',

# `Day` DATE NULL DEFAULT NULL COMMENT '',

# `orderWeek` INT(11) NULL DEFAULT NULL COMMENT '',

# `orderFiscalMonth` INT(11) NULL DEFAULT NULL COMMENT '',

# `orderFiscalQuarter` INT(11) NULL DEFAULT NULL COMMENT '',

# `orderMonth` INT(11) NULL DEFAULT NULL COMMENT '',

# `orderQuarter` INT(11) NULL DEFAULT NULL COMMENT '',

# `orderYear` INT(11) NULL DEFAULT NULL COMMENT '',

# `orderFiscalYear` INT(11) NULL DEFAULT NULL COMMENT '',

# `orderFiscalWeek` INT(11) NULL COMMENT '',

# PRIMARY KEY (`orderDate\_SK`) COMMENT '')

# ENGINE = InnoDB

# DEFAULT CHARACTER SET = utf8;

# 

# 

# -- -----------------------------------------------------

# -- Table `financedw`.`sales date`

# -- -----------------------------------------------------

# CREATE TABLE IF NOT EXISTS `financedw`.`sales date` (

# `saleDate\_SK` INT(11) NOT NULL COMMENT '',

# `saleDay` DATE NULL DEFAULT NULL COMMENT '',

# `saleWeek` INT(11) NULL DEFAULT NULL COMMENT '',

# `saleMonth` INT(11) NULL DEFAULT NULL COMMENT '',

# `saleQuarter` INT(11) NULL DEFAULT NULL COMMENT '',

# `saleYear` INT(11) NULL DEFAULT NULL COMMENT '',

# `saleFiscalWeek` INT(11) NULL DEFAULT NULL COMMENT '',

# `saleFiscalMonth` INT(11) NULL DEFAULT NULL COMMENT '',

# `saleFiscalQuarter` INT(11) NULL DEFAULT NULL COMMENT '',

# `saleFiscalYear` INT(11) NULL DEFAULT NULL COMMENT '',

# PRIMARY KEY (`saleDate\_SK`) COMMENT '')

# ENGINE = InnoDB

# DEFAULT CHARACTER SET = utf8;

# 

# 

# -- -----------------------------------------------------

# -- Table `financedw`.`financial performance`

# -- -----------------------------------------------------

# CREATE TABLE IF NOT EXISTS `financedw`.`financial performance` (

# `Product\_SK` INT(11) NOT NULL COMMENT '',

# `Supplier\_SK` INT(11) NOT NULL COMMENT '',

# `TPD\_SK` INT(11) NOT NULL COMMENT '',

# `orderDate\_SK` INT(11) NOT NULL DEFAULT '00000' COMMENT '',

# `saleDate\_SK` INT(11) NOT NULL COMMENT '',

# `Customer\_SK` INT(11) NOT NULL COMMENT '',

# `amt` DECIMAL(10,0) NULL DEFAULT NULL COMMENT '',

# `qnt` INT(11) NULL DEFAULT NULL COMMENT '',

# `cost` DECIMAL(10,0) NULL DEFAULT NULL COMMENT '',

# `margin` DECIMAL(10,0) NULL DEFAULT NULL COMMENT '',

# `manufactureTime` DECIMAL(10,0) NULL DEFAULT NULL COMMENT '',

# PRIMARY KEY (`Product\_SK`, `Supplier\_SK`, `TPD\_SK`, `orderDate\_SK`, `saleDate\_SK`, `Customer\_SK`) COMMENT '',

# INDEX `customer\_idx` (`Customer\_SK` ASC) COMMENT '',

# INDEX `order\_Date\_idx` (`orderDate\_SK` ASC) COMMENT '',

# INDEX `sales\_Date\_idx` (`saleDate\_SK` ASC) COMMENT '',

# INDEX `supplier\_idx` (`Supplier\_SK` ASC) COMMENT '',

# INDEX `TPD\_idx` (`TPD\_SK` ASC) COMMENT '',

# CONSTRAINT `financial performance\_supplier\_FK`

# FOREIGN KEY (`Supplier\_SK`)

# REFERENCES `financedw`.`supplier` (`supplier\_SK`)

# ON DELETE NO ACTION

# ON UPDATE NO ACTION,

# CONSTRAINT `financial performance\_transaction profile dimension\_FK`

# FOREIGN KEY (`TPD\_SK`)

# REFERENCES `financedw`.`transaction profile dimension` (`TPD\_SK`)

# ON DELETE NO ACTION

# ON UPDATE NO ACTION,

# CONSTRAINT `financial performance\_product\_FK`

# FOREIGN KEY (`Product\_SK`)

# REFERENCES `financedw`.`product` (`Product\_SK`)

# ON DELETE NO ACTION

# ON UPDATE NO ACTION,

# CONSTRAINT `financial performance\_customer\_FK`

# FOREIGN KEY (`Customer\_SK`)

# REFERENCES `financedw`.`customer` (`Customer\_SK`)

# ON DELETE NO ACTION

# ON UPDATE NO ACTION,

# CONSTRAINT `financial performance\_order date\_FK`

# FOREIGN KEY (`orderDate\_SK`)

# REFERENCES `financedw`.`order date` (`orderDate\_SK`)

# ON DELETE NO ACTION

# ON UPDATE NO ACTION,

# CONSTRAINT `financial performance\_sales date\_FK`

# FOREIGN KEY (`saleDate\_SK`)

# REFERENCES `financedw`.`sales date` (`saleDate\_SK`)

# ON DELETE NO ACTION

# ON UPDATE NO ACTION)

# ENGINE = InnoDB

# DEFAULT CHARACTER SET = utf8;

# 

# 

# SET SQL\_MODE=@OLD\_SQL\_MODE;

# SET FOREIGN\_KEY\_CHECKS=@OLD\_FOREIGN\_KEY\_CHECKS;

# SET UNIQUE\_CHECKS=@OLD\_UNIQUE\_CHECKS;

# 

# References:

Kimball, R. (1998). *The data warehouse lifecycle toolkit: expert methods for designing, developing, and deploying data warehouses*. John Wiley & Sons.

# 

# VI. Data Staging Activities - ETL

## 1. Data Cleansing

|  |  |  |  |
| --- | --- | --- | --- |
| **DM Table** | **Attribute** | **Problem** | **Resolution Strategy** (attach code) |
| Business\_unit.csv(TPC-East) | ABBREV | Miscellaneous was missing. | Used Pentaho’s Replace in String. Used regular expression to insert Miscellaneous in the empty cell. |
| Supplier.csv(TPC-East) | NAME | Typing Error in Companies Name. Inc,  SaurerGruppe Holding etc. | Used Pentaho’s Replace in String. Replaced the typing errors with the corrected ones. |
| Prod\_type.csv(TPC-East) | TYPE DESCRIPTION | Typing error Equip, | Used Pentaho’s Replace in String. Replaced “equip” with “Equipment”. |
| Product.csv(TPC-East) | DESCRIPTION | Typing error Equip. | . Used Pentaho’s Replace in String. Replaced “equip” with “Equipment”. |
| Customer\_type.csv(TPC-East) | CUSTTYPEID | C,E,S,F codes were given to type name. | Used Pentaho’s  Value Mapper  To change C,E,S and F to 1,2,3 and 4 for user friendliness. |
| Customer\_type.csv(TPC-East) | TYPENAME | Typing Error State/Local Gov and US Gov. | Used Pentaho’s Replace in String. Replaced “Gov” with “Government”. |
| Customer.csv(TPC-East) | NAME | Typing Error in Companies Name. Inc, Corp, Integra -- A Hotel & Restaurant Company, V.e.v. Sa, Greate Bay Casino Corporation De | Used Pentaho’s Replace in String. Replaced “Inc” with “Incorporation”, “Corp” with Corporation. “Casino Corporation De” with “Casino Corporation ” |
| Customer.csv(TPC-East) | CUSTTYPEID | C,E,S,F codes were given to type name. | Used Pentaho’s  Value Mapper  To change C,E,S and F to 1,2,3 and 4 for user friendliness. |
| Product.csv(PEC) | supplierName | Attribute values were null. | Used Pentaho’s if NULL to replace null with PEC. |
| Manufacturing.csv(PEC) | Year | Typing error in year. 5 instead of 2005 etc. | Used Pentaho’s to replace 5 to 2005, 6 to 2006 etc |
| Sales\_new.csv(PEC) | CustId and salesDate | Delimiter was an extra, and “ as delimiter. | Using MS excel. Removed the extra, and changed “ to ,. |
| Sales\_new.csv(PEC) | shipMethod | Typing error tuck and air. | Used Pentaho’s Replace in String. Replaced “aiir” with “air” and “tuck” to “truck”. |
| Business\_unit.csv(TPC-West) | ABBREV | Miscellaneous was missing | Used Pentaho’s Replace in String. Used regular expression to insert Miscellaneous in the empty cell. |
| Customer\_type.csv(TPC-West) | CUSTNAME | Typing Error State/Local Gov and US Gov. | Used Pentaho’s Replace in String. Replaced “Gov” with “Government”. |
| Customer\_type.csv(TPC-West) | CUSTTYPEID | C,E,S,F codes were given to type name. | Used Pentaho’s  Value Mapper  To change C,E,S and F to 1,2,3 and 4 for user friendliness. |
| Customer\_type.csv(TPC-West) | ADDRESS | Typing Error St., Rd., Ave, ,St., Av., 5 1., ^1, ^2, ^3, ^4, ^5, ^6 ,^7, ^8 .^9. | Used Pentaho’s Replace in String. Replaced “St.” with “Street”. “Rd” with “Road”. “Av” with “Avenue”. “^1” with “,1”. |
| Customer\_type.csv(TPC-West) | STATE | Full names of states. Some were misspelled. Alabama, georgiia etc. | Used Pentaho’s  Value Mapper  To change “Alabama” to AL, “Alaska” to “AK”,” hawaii” to “HI”. Etc. |
| Customer\_type.csv(TPC-West) | CUSTTYPEx | Inconsistent attribute values like, State, Comm, Edu, Govt, Corp, Inc. | Used Pentaho’s  Value Mapper  To change “Comm” to “Commercial”, “Edu” to “Education”,” Govt” to “Government”, “Corp” to “Corporation”. |
| Customer\_type.csv(TPC-West) | ADDRESS | The field ADDRESS was a single filed which is inconsistent with customer files from other divisions. | Used Pentaho’s  Split Field to split ADDRESS into ADDR1 and ADDR2. |
| Product.csv(TPC-West) | DESCRIPTION. | Typing error Equip, | Used Pentaho’s Replace in String. Replaced “equip” with “Equipment”. |
| Product.csv(TPC-West) | NAME | Typing error Inc. and Inc, | Used Pentaho’s Replace in String. Replaced “Inc and Inc.” with “Incorporation”. |
| Product.csv(TPC-West) | NAME | Typing errors First Bancshares IncorporationMo, SaurerGruppe Holding Ag and Incorporation. | Used Pentaho’s Replace in String. Replaced “Bancshares IncorporationMo” with “Bancshares Incorporation” , “SaurerGruppe Holding Ag” with “Saurer Group Holding ”. |
| Product.csv(TPC-West) | ADDRESS | The field City was a single filed which is inconsistent with other files. | Used Pentaho’s  Split Field to split CITY into CITY and STATE. |
| Product.csv(TPC-West) | PRODTYPEID | Delimiters were “. | Used Pentaho’s Replace in String to replace “ with a blank space. |
| Product.csv(TPC-West) | BUID | Delimiters were “. | Used Pentaho’s Replace in String to replace “with a blank space. |
| Product.csv(TPC-West) | TYPEDESCRIPTION | Delimiters were “. | Used Pentaho’s Replace in String to replace “with a blank space. |
| Sales\_new.csv(TPC-West) | discounted | Discount attribute values were missing from rows. | Used Pentaho’s Replace in String to replace blank space with 0. |
| Business\_unit.csv(PEC) | ABBREV | Miscellaneous was missing. | Used Pentaho’s Replace in String. Used regular expression to insert Miscellaneous in the empty cell. |
| Customer\_type.csv(PEC) | TYPENAME | Typing Error State/Local Gov and US Gov. | Used Pentaho’s Replace in String. Replaced “Gov” with “Government”. |
| Customer\_type.csv(PEC) | CUSTTYPEID | C,E,S,F codes were given to type name. | Used Pentaho’s  Value Mapper  To change C,E,S and F to 1,2,3 and 4 for user friendliness. |
| Customer\_type.csv(PEC) | Address | Typing Error St., Rd., Ave, ,St., Av., Dr, Inc and Co. | Used Pentaho’s Replace in String. Replaced “St.” with “Street”. “Rd” with “Road”. “Av” with “Avenue”. “Dr.” With “Drive”, “Inc” with “Incorporation.”, “Co” with “Corporation.” |
| Customer.csv(PEC) | Zip | Typing error 7066. | Used Pentaho’s  Value Mapper  To change 7066 to 70660. |
| Prodytype.csv(PEC) | BUID,TYPEID, TYPEDESCRIPTION | Delimiters were “. | Used Pentaho’s Replace in String to replace “ with a blank space. |
| Prodytype.csv(PEC) | TYPEDESCRIPTION | Typing error Equip, | Used Pentaho’s Replace in String. Replaced “equip” with “Equipment”. |
| Product.csv(PEC) | Price1,price2,prodId,UnitCost | Delimiters were “. | Used Pentaho’s Replace in String to replace “ with a blank space. |
| Product.csv(PEC) | Unit Cost | Missing Attributes. | Using MS Excel it was calculated by sum each product total cost / sum each product total quantity |
| Sales\_new.csv(PEC) | Shipping method | Typing error air instead of air. | Used Pentaho’s Replace in String. Replaced “aiir” with “air”. |
| Sales\_new.csv(PEC) | Amount | Wrong Amount was written. | Using MS Excel Recalculated the Unit Cost. (amt = product price(discount or not) \* quantity). |
| Sales\_new.csv(TPC W) | Amount | Wrong Amount was written. | Using MS Excel Recalculated the Unit Cost. (amt = product price(discount or not) \* quantity). |

## 2. Data Transformation

|  |  |
| --- | --- |
| **DM Table** | **Image Creation Process** (attach code) |
| Customer | C:\Users\bisht\Desktop\customer.PNG |
| Product | C:\Users\bisht\Desktop\images\images\finalproduct.PNG |
| Order Date | Team 2 created the OrderDate dimension by making a .csv file for all days between 1/1/2004 and 31/12/2010 in order to record every transaction and made a look up function in the Pentaho to mark the actual transaction in the PECSales\_new.csv. The fiscal calendar hierarchy was added based on the input specified in LAB 2. |
| Sales Date | Team 2 created the SaleDate dimension by making a .csv file for all days between 1/1/2005 and 31/12/2011 in order to record every transaction and made a look up function in the Pentaho to mark the actual transaction in the invoice.csv, PECSales\_new.csv. The fiscal calendar hierarchy was added based on the input specified in LAB 2. |
| Supplier | C:\Users\bisht\Desktop\images\images\supplier.PNG |
| Transaction Profile Dimension | C:\Users\bisht\Desktop\images\images\TPD.PNG |
| Fact Table | C:\Users\bisht\Desktop\images\images\FactFinal.PNG |

## 

## 3. Table Population

|  |  |
| --- | --- |
| **DM Table** | **Table Population Process** (attach code) |
| Customer | We used SQL table load script to load the data to our DM. The file used for this upload was the final transformed file(.csv) from kettle. The script used is attached below:    load data local infile '/pathToFolder/DM input files-2/Customer.csv  into table `Customer`  fields terminated by ';'  enclosed by '"'  lines terminated by '\r\n'  ignore 1 lines; |
| Product | We used SQL table load script to load the data to our DM. The file used for this upload was the final transformed file(.csv) from kettle. The script used is attached below:    load data local infile '/pathToFolder/DM input files-2/Product.csv  into table `Product`  fields terminated by ';'  enclosed by '"'  lines terminated by '\r\n'  ignore 1 lines; |
| Order Date | We used SQL table load script to load the data to our DM. The file used for this was the final transformed file from kettle. Although one of the transformations had be done on the final output file, so we manipulated the date format using the MS Excel format option. The default date was converted to the SQL format date. The script used is attached below:    load data local infile '/pathToFolder/DM input files-2/OrderDate.csv  into table `OrderDate`  fields terminated by ';'  enclosed by '"'  lines terminated by '\r\n'  ignore 1 lines; |
| Sales Date | We used SQL table load script to load the data to our DM. The file used for this was the final transformed file from kettle. Although one of the transformations had be done on the final output file, so we manipulated the date format using the MS Excel format option. The default date was converted to the SQL format date. The script used is attached below:    load data local infile '/pathToFolder/DM input files-2/SalesDate.csv  into table `Sales Date`  fields terminated by ';'  enclosed by '"'  lines terminated by '\r\n'  ignore 1 lines; |
| Supplier | We used SQL table load script to load the data to our DM. The file used for this upload was the final transformed file(.csv) from kettle. The script used is attached below:    load data local infile '/pathToFolder/DM input files-2/Supilier.csv  into table `Supplier`  fields terminated by ';'  enclosed by '"'  lines terminated by '\r\n'  ignore 1 lines; |
| Transaction Profile Dimension | We used SQL table load script to load the data to our DM. The file used for this upload was the final transformed file(.csv) from kettle. This the junk dimension. The script used is attached below:    load data local infile '/pathToFolder/DM input files-2/tpd.csv  into table `Transaction Profile Dimension`  fields terminated by ';'  enclosed by '"'  lines terminated by '\r\n'  ignore 1 lines; |
| Financial Performance | This was the final and last table to be loaded. This is the fact table. After loading this table, we made the foreign key relations. The file used for this also was the final transformed file(.csv) from kettle. This the junk dimension. The script used is attached below:    load data local infile '/pathToFolder/DM input files-2/financial\_performance\_fact.csv  into table `Financial Performance `  fields terminated by ';'  enclosed by '"'  lines terminated by '\r\n'  ignore 1 lines;    The attribute Cost is computed using the following script:    update `Financial Performance` f  inner join Product p on  f.Product\_SK = p.Product\_SKl  set Cost = (qty\*unitCost);    The attribute Margin is computed using the following script:    update `Financial Performance`  set Margin = ((amt\*qty)-Cost);    The attribute manufactureTime is computed using the following script:    update `Financial Performance` f  inner join `Order Date` od on  f.orderDateID = od.orderDateID  inner join `Sales Date`sd on  f.saleDateID = sd.saleDateID  set manufactureTime = (SELECT DATEDIFF(sd.Day,od.Day)); |

# VII. End User Applications

## 1. Queries

|  |
| --- |
| **User Question/Reporting Need** |
| A report that shows the sales, and costs associated with each customer type on an annual and quarterly basis. |
| **SQL Code** |
| select typeName, saleYear, saleQuarter, SUM(cost), SUM(qnt) from  -> `sales date` join `financial performance` using(saleDate\_SK)  -> join customer using(Customer\_SK)  -> group by typeName, saleYear, saleQuarter with rollup; |
| **Supporting Index(es)** |
| +----------------------+----------+-------------+------------+----------+  | typeName | saleYear | saleQuarter | SUM(cost) | SUM(qnt) |  +----------------------+----------+-------------+------------+----------+  | Commercial | 2005 | 1 | 67244922 | 248541 |  | Commercial | 2005 | 2 | 65956576 | 244836 |  | Commercial | 2005 | 3 | 70453574 | 263206 |  | Commercial | 2005 | 4 | 69297509 | 260424 |  | Commercial | 2005 | NULL | 272952581 | 1017007 |  | Commercial | 2006 | 1 | 66164260 | 248850 |  | Commercial | 2006 | 2 | 67275262 | 250547 |  | Commercial | 2006 | 3 | 70268809 | 258570 |  | Commercial | 2006 | 4 | 68028234 | 251252 |  | Commercial | 2006 | NULL | 271736565 | 1009219 |  | Commercial | 2007 | 1 | 69533086 | 257435 |  | Commercial | 2007 | 2 | 71558047 | 266483 |  | Commercial | 2007 | 3 | 70105802 | 262387 |  | Commercial | 2007 | 4 | 69757386 | 256714 |  | Commercial | 2007 | NULL | 280954321 | 1043019 |  | Commercial | 2008 | 1 | 70480292 | 261919 |  | Commercial | 2008 | 2 | 68181552 | 257019 |  | Commercial | 2008 | 3 | 68419374 | 254988 |  | Commercial | 2008 | 4 | 68012061 | 257731 |  | Commercial | 2008 | NULL | 275093279 | 1031657 |  | Commercial | 2009 | 1 | 67897996 | 251134 |  | Commercial | 2009 | 2 | 69723550 | 259917 |  | Commercial | 2009 | 3 | 69029652 | 255041 |  | Commercial | 2009 | 4 | 71728640 | 262299 |  | Commercial | 2009 | NULL | 278379838 | 1028391 |  | Commercial | 2010 | 1 | 69134189 | 257649 |  | Commercial | 2010 | 2 | 66451625 | 249248 |  | Commercial | 2010 | 3 | 71790190 | 264235 |  | Commercial | 2010 | 4 | 23631289 | 87115 |  | Commercial | 2010 | NULL | 231007293 | 858247 |  | Commercial | 2011 | 1 | 1660032 | 5731 |  | Commercial | 2011 | 2 | 1718297 | 5780 |  | Commercial | 2011 | 3 | 1990021 | 6683 |  | Commercial | 2011 | 4 | 617869 | 2061 |  | Commercial | 2011 | NULL | 5986219 | 20255 |  | Commercial | NULL | NULL | 1616110096 | 6007795 |  | Education | 2005 | 1 | 53043204 | 198344 |  | Education | 2005 | 2 | 52605454 | 194041 |  | Education | 2005 | 3 | 52806868 | 194336 |  | Education | 2005 | 4 | 52212895 | 192140 |  | Education | 2005 | NULL | 210668421 | 778861 |  | Education | 2006 | 1 | 52520165 | 197784 |  | Education | 2006 | 2 | 54767996 | 200194 |  | Education | 2006 | 3 | 53080689 | 194380 |  | Education | 2006 | 4 | 54982106 | 203126 |  | Education | 2006 | NULL | 215350956 | 795484 |  | Education | 2007 | 1 | 55852443 | 204370 |  | Education | 2007 | 2 | 52561774 | 196438 |  | Education | 2007 | 3 | 54716145 | 202767 |  | Education | 2007 | 4 | 53746474 | 197861 |  | Education | 2007 | NULL | 216876836 | 801436 |  | Education | 2008 | 1 | 52752239 | 195564 |  | Education | 2008 | 2 | 55181074 | 199806 |  | Education | 2008 | 3 | 54581394 | 201729 |  | Education | 2008 | 4 | 56827277 | 208472 |  | Education | 2008 | NULL | 219341984 | 805571 |  | Education | 2009 | 1 | 53268990 | 192897 |  | Education | 2009 | 2 | 52679338 | 194641 |  | Education | 2009 | 3 | 53794532 | 198304 |  | Education | 2009 | 4 | 52025684 | 192578 |  | Education | 2009 | NULL | 211768544 | 778420 |  | Education | 2010 | 1 | 52264005 | 190129 |  | Education | 2010 | 2 | 54125535 | 200109 |  | Education | 2010 | 3 | 54082850 | 204076 |  | Education | 2010 | 4 | 19807208 | 72695 |  | Education | 2010 | NULL | 180279598 | 667009 |  | Education | 2011 | 1 | 2110730 | 7068 |  | Education | 2011 | 2 | 2685211 | 9106 |  | Education | 2011 | 3 | 2421024 | 8264 |  | Education | 2011 | 4 | 780850 | 2618 |  | Education | 2011 | NULL | 7997815 | 27056 |  | Education | NULL | NULL | 1262284154 | 4653837 |  | State/Local Governme | 2005 | 1 | 61352231 | 223549 |  | State/Local Governme | 2005 | 2 | 63717012 | 228904 |  | State/Local Governme | 2005 | 3 | 63746954 | 232604 |  | State/Local Governme | 2005 | 4 | 63308575 | 227806 |  | State/Local Governme | 2005 | NULL | 252124772 | 912863 |  | State/Local Governme | 2006 | 1 | 62784271 | 225589 |  | State/Local Governme | 2006 | 2 | 67418311 | 241195 |  | State/Local Governme | 2006 | 3 | 64449433 | 235260 |  | State/Local Governme | 2006 | 4 | 64572377 | 235593 |  | State/Local Governme | 2006 | NULL | 259224392 | 937637 |  | State/Local Governme | 2007 | 1 | 62110528 | 224403 |  | State/Local Governme | 2007 | 2 | 63507933 | 230209 |  | State/Local Governme | 2007 | 3 | 65439019 | 238582 |  | State/Local Governme | 2007 | 4 | 59952723 | 221480 |  | State/Local Governme | 2007 | NULL | 251010203 | 914674 |  | State/Local Governme | 2008 | 1 | 64254324 | 231775 |  | State/Local Governme | 2008 | 2 | 63301077 | 229694 |  | State/Local Governme | 2008 | 3 | 61110347 | 226896 |  | State/Local Governme | 2008 | 4 | 66209949 | 238553 |  | State/Local Governme | 2008 | NULL | 254875697 | 926918 |  | State/Local Governme | 2009 | 1 | 63274546 | 227164 |  | State/Local Governme | 2009 | 2 | 62948091 | 224701 |  | State/Local Governme | 2009 | 3 | 64697468 | 232567 |  | State/Local Governme | 2009 | 4 | 62602117 | 225833 |  | State/Local Governme | 2009 | NULL | 253522222 | 910265 |  | State/Local Governme | 2010 | 1 | 61297181 | 224869 |  | State/Local Governme | 2010 | 2 | 61619542 | 222867 |  | State/Local Governme | 2010 | 3 | 63608514 | 229774 |  | State/Local Governme | 2010 | 4 | 24019122 | 85117 |  | State/Local Governme | 2010 | NULL | 210544359 | 762627 |  | State/Local Governme | 2011 | 1 | 2991852 | 10183 |  | State/Local Governme | 2011 | 2 | 3234773 | 10711 |  | State/Local Governme | 2011 | 3 | 3020014 | 10358 |  | State/Local Governme | 2011 | 4 | 705350 | 2471 |  | State/Local Governme | 2011 | NULL | 9951989 | 33723 |  | State/Local Governme | NULL | NULL | 1491253634 | 5398707 |  | US Government | 2005 | 1 | 43662779 | 162317 |  | US Government | 2005 | 2 | 43105405 | 159971 |  | US Government | 2005 | 3 | 40769488 | 150550 |  | US Government | 2005 | 4 | 40440253 | 153645 |  | US Government | 2005 | NULL | 167977925 | 626483 |  | US Government | 2006 | 1 | 40819749 | 149570 |  | US Government | 2006 | 2 | 40923966 | 150667 |  | US Government | 2006 | 3 | 41345154 | 152983 |  | US Government | 2006 | 4 | 42654144 | 157870 |  | US Government | 2006 | NULL | 165743013 | 611090 |  | US Government | 2007 | 1 | 41922092 | 151663 |  | US Government | 2007 | 2 | 41898914 | 155774 |  | US Government | 2007 | 3 | 42782919 | 160038 |  | US Government | 2007 | 4 | 43838017 | 161912 |  | US Government | 2007 | NULL | 170441942 | 629387 |  | US Government | 2008 | 1 | 39925824 | 151674 |  | US Government | 2008 | 2 | 44664126 | 166063 |  | US Government | 2008 | 3 | 41896226 | 154710 |  | US Government | 2008 | 4 | 42669207 | 160864 |  | US Government | 2008 | NULL | 169155383 | 633311 |  | US Government | 2009 | 1 | 38992332 | 143611 |  | US Government | 2009 | 2 | 40275004 | 150405 |  | US Government | 2009 | 3 | 44135697 | 161906 |  | US Government | 2009 | 4 | 40510153 | 150016 |  | US Government | 2009 | NULL | 163913186 | 605938 |  | US Government | 2010 | 1 | 40413563 | 152236 |  | US Government | 2010 | 2 | 41691157 | 152894 |  | US Government | 2010 | 3 | 41694502 | 154004 |  | US Government | 2010 | 4 | 16637373 | 59830 |  | US Government | 2010 | NULL | 140436595 | 518964 |  | US Government | 2011 | 1 | 4268116 | 14243 |  | US Government | 2011 | 2 | 3505773 | 12050 |  | US Government | 2011 | 3 | 4579459 | 15531 |  | US Government | 2011 | 4 | 1532597 | 5235 |  | US Government | 2011 | NULL | 13885945 | 47059 |  | US Government | NULL | NULL | 991553989 | 3672232 |  | NULL | NULL | NULL | 5361201873 | 19732571 |  +----------------------+----------+-------------+------------+----------+ |

|  |
| --- |
| **User Question/Reporting Need** |
| #Top 5 sales months on 2008 |
| **SQL Code** |
| select t1.saleYear,t1.saleMonth, t2.sales as sales, count(t2.sales) as Rank  from  (select a.saleYear, a.saleMonth, sum(qnt) as sales from (select \* from `sales date` where saleYear=2008) a  join `financial performance` using(saleDate\_SK)  group by a.saleYear, a.saleMonth) t1  join  (select a.saleYear, a.saleMonth, sum(qnt) as sales from (select \* from `sales date` where saleYear=2008) a  join `financial performance` using(saleDate\_SK)  group by a.saleYear, a.saleMonth) t2  using (saleYear)  where t1.sales <= t2.sales  group by t1.saleYear,t1.saleMonth  order by t2.sales desc limit 5; |
| **Supporting Index(es)** |
| +----------+-----------+--------+------+  | saleYear | saleMonth | sales | Rank |  +----------+-----------+--------+------+  | 2008 | 10 | 294553 | 1 |  | 2008 | 12 | 290871 | 2 |  | 2008 | 8 | 290786 | 3 |  | 2008 | 5 | 290577 | 4 |  | 2008 | 3 | 284453 | 5 |  +----------+-----------+--------+------+ |

|  |
| --- |
| **User Question/Reporting Need** |
| #Top 5 sales customers |
| **SQL Code** |
| select t1.saleYear, t1.name,t1.city, t1.state, t2.sales as sales, count(t2.sales) as Rank  from  (select a.saleYear, name, city, state, sum(qnt) as sales from customer  join `financial performance` using(customer\_SK) join (select \* from `sales date` where saleYear=2008) a using(saleDate\_SK)  group by a.saleYear, name) t1  join  (select a.saleYear, name, city, state, sum(qnt) as sales from customer  join `financial performance` using(customer\_SK) join (select \* from `sales date` where saleYear=2008) a using(saleDate\_SK)  group by a.saleYear, name) t2  using (saleYear)  where t1.sales <= t2.sales  group by t1.saleYear, t1.name  order by t2.sales desc limit 5; |
| **Supporting Index(es)** |
| +----------+----------------------------------------+--------------+-------+-------+------+  | saleYear | name | city | state | sales | Rank |  +----------+----------------------------------------+--------------+-------+-------+------+  | 2008 | Firstfed America Bancorp Incorporation | Ward Prairie | TX | 84735 | 1 |  | 2008 | Beverly Equipment | Bloomington | HI | 84127 | 2 |  | 2008 | Martinez Disposables | Tucson | DC | 83929 | 3 |  | 2008 | Cross | Opelousas | GA | 80735 | 4 |  | 2008 | Blevins | Winooski | SD | 80307 | 5 |  +----------+----------------------------------------+--------------+-------+-------+------+ |

## 

|  |
| --- |
| **User Question/Reporting Need** |
| #Top 5 sales customers of chemical products |
| **SQL Code** |
| select t1.saleYear, t1.name,t1.city, t1.state, t2.sales as sales, count(t2.sales) as Rank  from  (select a.saleYear, name, city, state, sum(qnt) as sales from customer  join `financial performance` using(customer\_SK)  join (select \* from `sales date` where saleYear=2008) a using(saleDate\_SK)  join (select \* from product where businessName="Chemicals") b using(product\_SK)  group by a.saleYear, name) t1  join  (select a.saleYear, name, city, state, sum(qnt) as sales from customer  join `financial performance` using(customer\_SK)  join (select \* from `sales date` where saleYear=2008) a using(saleDate\_SK)  join (select \* from product where businessName="Chemicals") b using(product\_SK)  group by a.saleYear, name) t2  using (saleYear)  where t1.sales <= t2.sales  group by t1.saleYear, t1.name  order by t2.sales desc limit 5; |
| **Supporting Index(es)** |
| +----------+--------------------------------+---------------+-------+-------+------+  | saleYear | name | city | state | sales | Rank |  +----------+--------------------------------+---------------+-------+-------+------+  | 2008 | Gte Corporation | Winter Garden | FL | 9166 | 1 |  | 2008 | Ashton Washington | Vallejo | MA | 8123 | 2 |  | 2008 | Meridian Resources Corporation | Fall River | MA | 7925 | 3 |  | 2008 | The Final Frontier | Biddeford | MO | 7707 | 4 |  | 2008 | Mullins Incorporation. | Birmingham | NE | 7517 | 5 |  +----------+--------------------------------+---------------+-------+-------+------+ |

## 

## 

## **2. A View**

mysql> CREATE VIEW `PEC Average manufacture time by year/quarter` AS

-> select saleYear, saleQuarter, AVG(manufactureTime) from `financial performance`

-> join `customer` using (Customer\_SK)

-> join `sales date` using(saleDate\_SK)

-> where saleYear !=2011 AND customerCompany ="PEC"

-> group by saleYear, saleQuarter;

Query OK, 0 rows affected (0.10 sec)

mysql>

mysql> CREATE VIEW `PEC number orders not shipped 10 days` AS

-> select saleYear, saleQuarter, count(manufactureTime) from `financial performance`

-> join `customer` using (Customer\_SK)

-> join `sales date` using(saleDate\_SK)

-> where saleYear !=2011 AND customerCompany ="PEC" AND manufactureTime >10

-> group by saleYear, saleQuarter;

Query OK, 0 rows affected (0.05 sec)

mysql> select saleYear, saleQuarter, AVG(manufactureTime) from `financial performance`

-> join `customer` using (Customer\_SK)

-> join `sales date` using(saleDate\_SK)

-> where saleYear !=2011 AND customerCompany ="PEC"

-> group by saleYear, saleQuarter;

+----------+-------------+----------------------+

| saleYear | saleQuarter | AVG(manufactureTime) |

+----------+-------------+----------------------+

| 2005 | 1 | 15.1264 |

| 2005 | 2 | 15.0506 |

| 2005 | 3 | 15.2138 |

| 2005 | 4 | 15.1509 |

| 2006 | 1 | 14.8778 |

| 2006 | 2 | 14.5762 |

| 2006 | 3 | 15.1436 |

| 2006 | 4 | 14.7544 |

| 2007 | 1 | 15.1360 |

| 2007 | 2 | 14.9257 |

| 2007 | 3 | 14.7913 |

| 2007 | 4 | 14.8993 |

| 2008 | 1 | 15.1584 |

| 2008 | 2 | 15.1900 |

| 2008 | 3 | 15.0396 |

| 2008 | 4 | 14.8944 |

| 2009 | 1 | 15.1663 |

| 2009 | 2 | 14.9039 |

| 2009 | 3 | 15.1458 |

| 2009 | 4 | 14.8127 |

| 2010 | 1 | 14.8007 |

| 2010 | 2 | 15.0034 |

| 2010 | 3 | 15.1520 |

| 2010 | 4 | 14.6683 |

+----------+-------------+----------------------+

24 rows in set (2.54 sec)

mysql> select saleYear, saleQuarter, count(manufactureTime) from `financial performance`

-> join `customer` using (Customer\_SK)

-> join `sales date` using(saleDate\_SK)

-> where saleYear !=2011 AND customerCompany ="PEC" AND manufactureTime >10

-> group by saleYear, saleQuarter;

+----------+-------------+------------------------+

| saleYear | saleQuarter | count(manufactureTime) |

+----------+-------------+------------------------+

| 2005 | 1 | 2454 |

| 2005 | 2 | 2428 |

| 2005 | 3 | 2494 |

| 2005 | 4 | 2445 |

| 2006 | 1 | 2329 |

| 2006 | 2 | 2374 |

| 2006 | 3 | 2477 |

| 2006 | 4 | 2441 |

| 2007 | 1 | 2535 |

| 2007 | 2 | 2497 |

| 2007 | 3 | 2462 |

| 2007 | 4 | 2459 |

| 2008 | 1 | 2499 |

| 2008 | 2 | 2556 |

| 2008 | 3 | 2398 |

| 2008 | 4 | 2569 |

| 2009 | 1 | 2455 |

| 2009 | 2 | 2470 |

| 2009 | 3 | 2506 |

| 2009 | 4 | 2375 |

| 2010 | 1 | 2400 |

| 2010 | 2 | 2453 |

| 2010 | 3 | 2563 |

| 2010 | 4 | 768 |

+----------+-------------+------------------------+

24 rows in set (0.78 sec)

3. Aggregated Mata Marts

# 3. AGGREGRATED DATA MARTS

# month\_customer\_FP (shrunken and lost dimension)

# A report that shows the sales, and costs associated with each customer or

# customer type on an annual, quarterly, monthly or weekly basis.

# INSERT INTO `month\_customer\_fp` (saledate\_SK, customer\_SK, amt, cost)

# select c.m\_saledate\_sk, Customer\_SK, SUM(amt) amt, SUM(cost) cost from

# (select a.saledate\_sk m\_saledate\_sk, b.saledate\_sk saledate\_sk from

# (select saleDate\_SK, salemonth, salequarter, saleyear

# from `sales date` group by salemonth, salequarter, saleyear

# order by saledate\_SK) a join

# `sales date` b using(salemonth, salequarter, saleyear)) c

# join `financial performance`

# using(saleDate\_SK)

# group by c.m\_saledate\_sk, Customer\_SK;

# month\_sales date

# INSERT INTO `month\_sales date` (saleDate\_SK, salemonth, salequarter, saleyear, saleFiscalMonth, saleFiscalQuarter, saleFiscalYear)

# select saleDate\_SK, salemonth, salequarter, saleyear, saleFiscalMonth, saleFiscalQuarter, saleFiscalYear

# from `sales date` group by salemonth, salequarter, saleyear;

# Queries

# select salemonth, saleyear, name customer\_name, amt, cost from `month\_customer\_fp`

# -> join `month\_sales date` using(saleDate\_SK)

# -> join customer using(customer\_SK)

# -> where saleyear = 2007;

# +-----------+----------+---------------------------------------------------+----------+---------+

# | salemonth | saleyear | customer\_name | amt | cost |

# +-----------+----------+---------------------------------------------------+----------+---------+

# | 1 | 2007 | Beverly Equipment | 910530 | 735507 |

# | 1 | 2007 | Cross | 1220016 | 979264 |

# | 1 | 2007 | Firstfed America Bancorp Incorporation | 7665979 | 77674 |

# | 1 | 2007 | Lnr Property Corporation | 9366483 | 107608 |

# | 1 | 2007 | Gte Corporation | 6981947 | 81389 |

# | 1 | 2007 | Usx - Steel Group Incorporation | 5808572 | 74186 |

# | 1 | 2007 | Beckman Coulter Incorporation | 11178916 | 117528 |

# | 1 | 2007 | Pulitzer Publishing Company | 10996228 | 115091 |

# | 1 | 2007 | Setron | 8038102 | 127391 |

# | 1 | 2007 | Greenman Technologies Incorporation | 8593589 | 95328 |

# | 1 | 2007 | Polymer Group Incorporation | 6901966 | 75752 |

# | 1 | 2007 | Emerson Electric Co. | 5466116 | 59170 |

# | 1 | 2007 | Firstfed America Bancorp Incorporation | 1248802 | 1031963 |

# | 1 | 2007 | Integral - A Hotel & Restaurant Company | 2216905 | 34419 |

# | 1 | 2007 | Hickory Tech Corporation | 3652982 | 44920 |

# | 1 | 2007 | Televideo Incorporation | 8036400 | 84974 |

# | 1 | 2007 | Seattle Filmworks Incorporation | 3760995 | 41805 |

# | 1 | 2007 | Pricellular Corporation | 12463013 | 121719 |

# | 1 | 2007 | Magainin Pharmaceuticals Incorporation | 3655758 | 66063 |

# | 1 | 2007 | Sterling Financial Corporation Washington | 3739903 | 49531 |

# | 1 | 2007 | Fidelity National Corporation | 8891632 | 98272 |

# | 1 | 2007 | Fedders Corporation | 7628430 | 94906 |

# | 1 | 2007 | Clio-Hutchinson | 1491351 | 1201503 |

# | 1 | 2007 | United Healthcare Corporation | 10182068 | 125019 |

# | 1 | 2007 | Greate Bay Casino Corporation | 2220373 | 33092 |

# | 1 | 2007 | Price Rivers | 1516011 | 1233147 |

# | 1 | 2007 | Santos LLC. | 1379256 | 1115703 |

# | 1 | 2007 | Santiago Processing | 1330988 | 1074529 |

# | 1 | 2007 | Chemfix Technologies Incorporation | 1113810 | 892187 |

# | 1 | 2007 | Chantale-Huffman Incorporation. | 1157516 | 957399 |

# | 1 | 2007 | Garrison Works | 1712029 | 1382707 |

# | 1 | 2007 | Ruby Petty | 1408072 | 1141203 |

# | 1 | 2007 | Byron Chemicals | 943247 | 765229 |

# | 1 | 2007 | Emerson Electric Co. | 1297168 | 1042182 |

# | 1 | 2007 | Oleg Jones | 1138860 | 914895 |

# | 1 | 2007 | Genevieve Day | 1127835 | 922034 |

# | 1 | 2007 | YuliChem | 742344 | 588761 |

# | 1 | 2007 | Setron | 1317788 | 1060415 |

# | 1 | 2007 | Fuentes Incorporation. | 1752696 | 1419777 |

# | 1 | 2007 | Mendoza Chem | 1212848 | 970099 |

# | 1 | 2007 | India-Stuart | 1554804 | 1252004 |

# | 1 | 2007 | Pulitzer Publishing Company | 1171213 | 950647 |

# | 1 | 2007 | Ferdinand Supply | 1334820 | 1085624 |

# | 1 | 2007 | Beasley | 1067802 | 878220 |

# | 1 | 2007 | Charity Incorporation. | 901409 | 733848 |

# | 1 | 2007 | Ronan French | 1210792 | 974894 |

# | 1 | 2007 | Blevins | 1503628 | 1240157 |

# | 1 | 2007 | Ashton Washington | 1399803 | 1129876 |

# | 1 | 2007 | Austin Burns | 1454125 | 1166802 |

# | 1 | 2007 | Gte Corporation | 1233929 | 991071 |

# | 1 | 2007 | Saint Andrews Golf Corporation | 1104371 | 904826 |

# | 1 | 2007 | Austin Ferrell | 1347160 | 1085514 |

# | 1 | 2007 | Hop Adams | 1566685 | 1261213 |

# | 1 | 2007 | Mullins Incorporation. | 1292800 | 1055986 |

# | 1 | 2007 | Processing Equipment Corporation | 835385 | 674973 |

# | 1 | 2007 | Meridian Resources Corporation | 1429432 | 1156984 |

# | 1 | 2007 | Haynes | 1136477 | 824597 |

# | 1 | 2007 | Hammett Farley | 1478511 | 1043329 |

# | 1 | 2007 | Austin Ferrell | 909112 | 627779 |

# | 1 | 2007 | Cain | 1910600 | 1363388 |

# | 1 | 2007 | Knight | 1840849 | 1327663 |

# | 1 | 2007 | Serrano | 1194581 | 856523 |

# | 1 | 2007 | Colton Maldonado | 870228 | 591083 |

# | 1 | 2007 | Googol | 945728 | 679225 |

# | 1 | 2007 | Mallory Lynch | 1443926 | 1008539 |

# | 1 | 2007 | Zena Machines | 1849747 | 1489339 |

# | 1 | 2007 | Melvin House | 968128 | 657450 |

# | 1 | 2007 | Emerson Electric Company | 1221773 | 890457 |

# | 1 | 2007 | Rudyard-Knapp | 1050169 | 678599 |

# | 1 | 2007 | Pewter Gym | 1617195 | 1161854 |

# | 1 | 2007 | Hop Adams | 1397926 | 968172 |

# | 1 | 2007 | Xavier Harmon | 1438783 | 992512 |

# | 1 | 2007 | Cross | 1034104 | 720795 |

# | 1 | 2007 | Martinez Disposables | 1540249 | 1052367 |

# | 1 | 2007 | Atkins | 1212204 | 908832 |

# | 1 | 2007 | Dakota Mills | 740210 | 531310 |

# | 1 | 2007 | The Final Frontier | 1132219 | 910630 |

# | 1 | 2007 | Clare Baird | 1323090 | 981427 |

# | 1 | 2007 | Schultz Learning | 1377778 | 944443 |

# | 1 | 2007 | Blevins | 1302540 | 909812 |

# | 1 | 2007 | Baxter May | 830627 | 562660 |

# | 1 | 2007 | Knox Reid | 1042434 | 716487 |

# | 1 | 2007 | Starfleet Academy | 1427942 | 1002040 |

# | 1 | 2007 | Ferengi Treasures | 1234930 | 902600 |

# | 1 | 2007 | Tallulah | 1165561 | 819283 |

# | 1 | 2007 | The Product Company (West) | 1268123 | 909842 |

# | 1 | 2007 | Ann Lee | 1444444 | 974175 |

# | 1 | 2007 | Merritt Long | 949616 | 787547 |

# | 1 | 2007 | Kuame Barnes | 871547 | 636337 |

# | 1 | 2007 | Beverly Equipment | 1541511 | 1099305 |

# | 1 | 2007 | Firstfed America Bancorp Incorporation | 1208931 | 851467 |

# | 1 | 2007 | Ronan French | 1311899 | 940198 |

# | 1 | 2007 | Maya Brewer | 1780730 | 1259094 |

# | 1 | 2007 | Zena Machines | 1202964 | 877089 |

# | 1 | 2007 | Mullins Incorporation | 668129 | 446134 |

# | 1 | 2007 | Raphael Allison | 1815316 | 1315258 |

# | 1 | 2007 | Martin Donaldson | 1619277 | 1186710 |

# | 1 | 2007 | Gemma Castro | 1288844 | 823680 |

# | 1 | 2007 | Martinez Disposables | 999798 | 812245 |

# | 1 | 2007 | The Product Company (East) | 1025660 | 746004 |

# | 1 | 2007 | Room Plus Incorporation | 10889466 | 109548 |

# | 1 | 2007 | Saint Andrews Golf Corporation | 8630508 | 124989 |

# | 1 | 2007 | Synaptic Pharmaceutical Corporation | 9555120 | 90274 |

# | 1 | 2007 | Cohesant Technologies Incorporation | 9472049 | 112219 |

# | 1 | 2007 | Publishing Company Of North America Incorporation | 2893461 | 42876 |

# | 1 | 2007 | Newcor Incorporation | 3432036 | 42562 |

# | 1 | 2007 | Railamerica Incorporation | 6237075 | 86410 |

# | 1 | 2007 | Meridian Resources Corporation | 6817485 | 85615 |

# | 1 | 2007 | Camera Platforms International Incorporation | 864397 | 689992 |

# | 1 | 2007 | V E V SA | 4731696 | 55289 |

# | 1 | 2007 | Scp Pool Corporation | 10821776 | 122718 |

# | 1 | 2007 | Camera Platforms International Incorporation | 13240914 | 142425 |

# | 1 | 2007 | Motts Holdings Incorporation | 3882351 | 67705 |

# | 1 | 2007 | Labor Ready Incorporation | 3517204 | 33247 |

# | 1 | 2007 | Shaw Brothers | 14890879 | 159297 |

# | 1 | 2007 | Chemfix Technologies Incorporation | 15242413 | 166345 |

# | 1 | 2007 | Ligand Pharmaceuticals Incorporation | 9776084 | 125105 |

# | 1 | 2007 | Helpmate Robotics Incorporation | 4316622 | 45543 |

# | 1 | 2007 | Liberty Homes Incorporation | 6883116 | 84047 |

# | 2 | 2007 | Beverly Equipment | 1122947 | 899606 |

# | 2 | 2007 | Cross | 1299229 | 1078210 |

# | 2 | 2007 | Firstfed America Bancorp Incorporation | 3115527 | 41378 |

# | 2 | 2007 | Lnr Property Corporation | 8417587 | 97818 |

# | 2 | 2007 | Gte Corporation | 9322686 | 124139 |

# | 2 | 2007 | Usx - Steel Group Incorporation | 8636231 | 103379 |

# | 2 | 2007 | Beckman Coulter Incorporation | 3635297 | 43938 |

# | 2 | 2007 | Pulitzer Publishing Company | 5139506 | 55976 |

# | 2 | 2007 | Setron | 4387891 | 72150 |

# | 2 | 2007 | Greenman Technologies Incorporation | 13226243 | 142219 |

# | 2 | 2007 | Polymer Group Incorporation | 9253420 | 107457 |

# | 2 | 2007 | Emerson Electric Co. | 11025344 | 116850 |

# | 2 | 2007 | Firstfed America Bancorp Incorporation | 1006962 | 798407 |

# | 2 | 2007 | Integral - A Hotel & Restaurant Company | 6190749 | 82423 |

# | 2 | 2007 | Hickory Tech Corporation | 6188816 | 81766 |

# | 2 | 2007 | Televideo Incorporation | 10871761 | 112136 |

# | 2 | 2007 | Seattle Filmworks Incorporation | 8651840 | 104588 |

# | 2 | 2007 | Pricellular Corporation | 5702773 | 72139 |

# | 2 | 2007 | Magainin Pharmaceuticals Incorporation | 4979287 | 49065 |

# | 2 | 2007 | Sterling Financial Corporation Washington | 6475198 | 58022 |

# | 2 | 2007 | Fidelity National Corporation | 4041383 | 48765 |

# | 2 | 2007 | Fedders Corporation | 6007210 | 59660 |

# | 2 | 2007 | Clio-Hutchinson | 1149776 | 951815 |

# | 2 | 2007 | United Healthcare Corporation | 8391282 | 106627 |

# | 2 | 2007 | Greate Bay Casino Corporation | 4435354 | 54388 |

# | 2 | 2007 | Price Rivers | 871442 | 703080 |

# | 2 | 2007 | Santos LLC. | 1148159 | 910147 |

# | 2 | 2007 | Santiago Processing | 1153028 | 942516 |

# | 2 | 2007 | Chemfix Technologies Incorporation | 1384838 | 1120773 |

# | 2 | 2007 | Chantale-Huffman Incorporation. | 434338 | 348618 |

# | 2 | 2007 | Garrison Works | 1356689 | 1086349 |

# | 2 | 2007 | Ruby Petty | 1001244 | 806277 |

# | 2 | 2007 | Byron Chemicals | 977391 | 784395 |

# | 2 | 2007 | Emerson Electric Co. | 1280294 | 1053581 |

# | 2 | 2007 | Oleg Jones | 847074 | 688567 |

# | 2 | 2007 | Genevieve Day | 1540034 | 1262526 |

# | 2 | 2007 | YuliChem | 1034888 | 834807 |

# | 2 | 2007 | Setron | 1293855 | 1043915 |

# | 2 | 2007 | Fuentes Incorporation. | 1108675 | 896442 |

# | 2 | 2007 | Mendoza Chem | 1206412 | 983359 |

# | 2 | 2007 | India-Stuart | 699503 | 558995 |

# | 2 | 2007 | Pulitzer Publishing Company | 1076662 | 862452 |

# | 2 | 2007 | Ferdinand Supply | 984816 | 800403 |

# | 2 | 2007 | Beasley | 1585989 | 1287314 |

# | 2 | 2007 | Charity Incorporation. | 1224478 | 979807 |

# | 2 | 2007 | Ronan French | 826879 | 650039 |

# | 2 | 2007 | Blevins | 1340485 | 1080501 |

# | 2 | 2007 | Ashton Washington | 1341327 | 1074559 |

# | 2 | 2007 | Austin Burns | 1354329 | 1091860 |

# | 2 | 2007 | Gte Corporation | 1152140 | 935944 |

# | 2 | 2007 | Saint Andrews Golf Corporation | 1170520 | 948103 |

# | 2 | 2007 | Austin Ferrell | 743820 | 605108 |

# | 2 | 2007 | Hop Adams | 1435255 | 1144491 |

# | 2 | 2007 | Mullins Incorporation. | 998804 | 800465 |

# | 2 | 2007 | Processing Equipment Corporation | 906891 | 734666 |

# | 2 | 2007 | Meridian Resources Corporation | 1057472 | 864179 |

# | 2 | 2007 | Haynes | 796914 | 576969 |

# | 2 | 2007 | Hammett Farley | 1340395 | 972504 |

# | 2 | 2007 | Austin Ferrell | 1126990 | 773833 |

# | 2 | 2007 | Cain | 1452861 | 1062319 |

# | 2 | 2007 | Knight | 905104 | 643261 |

# | 2 | 2007 | Serrano | 1718165 | 1143279 |

# | 2 | 2007 | Colton Maldonado | 1360307 | 1015552 |

# | 2 | 2007 | Googol | 1286750 | 907513 |

# | 2 | 2007 | Mallory Lynch | 1097667 | 718058 |

# | 2 | 2007 | Zena Machines | 898171 | 716184 |

# | 2 | 2007 | Melvin House | 1088881 | 756108 |

# | 2 | 2007 | Emerson Electric Company | 1445256 | 1053954 |

# | 2 | 2007 | Rudyard-Knapp | 903756 | 636505 |

# | 2 | 2007 | Pewter Gym | 1247065 | 875216 |

# | 2 | 2007 | Hop Adams | 1099614 | 772111 |

# | 2 | 2007 | Xavier Harmon | 1032236 | 706615 |

# | 2 | 2007 | Cross | 1134411 | 828628 |

# | 2 | 2007 | Martinez Disposables | 1589778 | 1127472 |

# | 2 | 2007 | Atkins | 1188192 | 834070 |

# | 2 | 2007 | Dakota Mills | 1479047 | 1059461 |

# | 2 | 2007 | The Final Frontier | 1164572 | 950413 |

# | 2 | 2007 | Clare Baird | 853675 | 634117 |

# | 2 | 2007 | Schultz Learning | 1296060 | 919835 |

# | 2 | 2007 | Blevins | 1287774 | 901500 |

# | 2 | 2007 | Baxter May | 1267161 | 959471 |

# | 2 | 2007 | Knox Reid | 850416 | 565799 |

# | 2 | 2007 | Starfleet Academy | 1185652 | 866123 |

# | 2 | 2007 | Ferengi Treasures | 1274915 | 868498 |

# | 2 | 2007 | Tallulah | 1005368 | 754254 |

# | 2 | 2007 | The Product Company (West) | 1406307 | 1040559 |

# | 2 | 2007 | Ann Lee | 991877 | 682929 |

# | 2 | 2007 | Merritt Long | 1221404 | 994325 |

# | 2 | 2007 | Kuame Barnes | 1303535 | 881547 |

# | 2 | 2007 | Beverly Equipment | 879552 | 633321 |

# | 2 | 2007 | Firstfed America Bancorp Incorporation | 1210107 | 848576 |

# | 2 | 2007 | Ronan French | 1439422 | 1059025 |

# | 2 | 2007 | Maya Brewer | 1419097 | 1000017 |

# | 2 | 2007 | Zena Machines | 1109689 | 737396 |

# | 2 | 2007 | Mullins Incorporation | 716076 | 513813 |

# | 2 | 2007 | Raphael Allison | 728383 | 483821 |

# | 2 | 2007 | Martin Donaldson | 1161865 | 869033 |

# | 2 | 2007 | Gemma Castro | 1431712 | 999169 |

# | 2 | 2007 | Martinez Disposables | 1439945 | 1155039 |

# | 2 | 2007 | The Product Company (East) | 1059378 | 755318 |

# | 2 | 2007 | Room Plus Incorporation | 4909036 | 46661 |

# | 2 | 2007 | Saint Andrews Golf Corporation | 10331810 | 118165 |

# | 2 | 2007 | Synaptic Pharmaceutical Corporation | 5100837 | 74980 |

# | 2 | 2007 | Cohesant Technologies Incorporation | 8980811 | 101883 |

# | 2 | 2007 | Publishing Company Of North America Incorporation | 8218532 | 100908 |

# | 2 | 2007 | Newcor Incorporation | 10900956 | 97732 |

# | 2 | 2007 | Railamerica Incorporation | 5860816 | 54739 |

# | 2 | 2007 | Meridian Resources Corporation | 10218321 | 99960 |

# | 2 | 2007 | Camera Platforms International Incorporation | 801263 | 642640 |

# | 2 | 2007 | V E V SA | 7704628 | 83172 |

# | 2 | 2007 | Scp Pool Corporation | 5044320 | 53911 |

# | 2 | 2007 | Camera Platforms International Incorporation | 15047825 | 155526 |

# | 2 | 2007 | Motts Holdings Incorporation | 3915206 | 38743 |

# | 2 | 2007 | Labor Ready Incorporation | 16603166 | 188680 |

# | 2 | 2007 | Shaw Brothers | 9145019 | 99881 |

# | 2 | 2007 | Chemfix Technologies Incorporation | 3180642 | 42028 |

# | 2 | 2007 | Ligand Pharmaceuticals Incorporation | 5828393 | 53225 |

# | 2 | 2007 | Helpmate Robotics Incorporation | 13050541 | 159343 |

# | 2 | 2007 | Liberty Homes Incorporation | 11675383 | 126794 |

# | 3 | 2007 | Beverly Equipment | 1156454 | 940695 |

# | 3 | 2007 | Cross | 1385501 | 1112279 |

# | 3 | 2007 | Firstfed America Bancorp Incorporation | 8234490 | 83004 |

# | 3 | 2007 | Lnr Property Corporation | 9311394 | 115145 |

# | 3 | 2007 | Gte Corporation | 6887748 | 89662 |

# | 3 | 2007 | Usx - Steel Group Incorporation | 10254692 | 95340 |

# | 3 | 2007 | Beckman Coulter Incorporation | 8140372 | 81951 |

# | 3 | 2007 | Pulitzer Publishing Company | 10511904 | 116067 |

# | 3 | 2007 | Setron | 4509683 | 73119 |

# | 3 | 2007 | Greenman Technologies Incorporation | 10900172 | 121594 |

# | 3 | 2007 | Polymer Group Incorporation | 5785717 | 75032 |

# | 3 | 2007 | Emerson Electric Co. | 26156586 | 305071 |

# | 3 | 2007 | Firstfed America Bancorp Incorporation | 1244992 | 992403 |

# | 3 | 2007 | Integral - A Hotel & Restaurant Company | 13788161 | 151717 |

# | 3 | 2007 | Hickory Tech Corporation | 4717487 | 51534 |

# | 3 | 2007 | Televideo Incorporation | 3154826 | 34491 |

# | 3 | 2007 | Seattle Filmworks Incorporation | 9799571 | 113685 |

# | 3 | 2007 | Pricellular Corporation | 13006880 | 147958 |

# | 3 | 2007 | Magainin Pharmaceuticals Incorporation | 11132910 | 119457 |

# | 3 | 2007 | Sterling Financial Corporation Washington | 9025626 | 101010 |

# | 3 | 2007 | Fidelity National Corporation | 12274567 | 152131 |

# | 3 | 2007 | Fedders Corporation | 6032242 | 65068 |

# | 3 | 2007 | Clio-Hutchinson | 933899 | 745367 |

# | 3 | 2007 | United Healthcare Corporation | 5758473 | 66687 |

# | 3 | 2007 | Greate Bay Casino Corporation | 16321927 | 182653 |

# | 3 | 2007 | Price Rivers | 1587418 | 1284898 |

# | 3 | 2007 | Santos LLC. | 1224402 | 994393 |

# | 3 | 2007 | Santiago Processing | 898949 | 727519 |

# | 3 | 2007 | Chemfix Technologies Incorporation | 1104172 | 889141 |

# | 3 | 2007 | Chantale-Huffman Incorporation. | 830179 | 680015 |

# | 3 | 2007 | Garrison Works | 1016449 | 819089 |

# | 3 | 2007 | Ruby Petty | 1422810 | 1152360 |

# | 3 | 2007 | Byron Chemicals | 1337578 | 1074308 |

# | 3 | 2007 | Emerson Electric Co. | 1483440 | 1191925 |

# | 3 | 2007 | Oleg Jones | 1583344 | 1267013 |

# | 3 | 2007 | Genevieve Day | 1139795 | 935299 |

# | 3 | 2007 | YuliChem | 1283627 | 1038250 |

# | 3 | 2007 | Setron | 1287320 | 1045766 |

# | 3 | 2007 | Fuentes Incorporation. | 1220972 | 978665 |

# | 3 | 2007 | Mendoza Chem | 1289809 | 1038355 |

# | 3 | 2007 | India-Stuart | 1263436 | 1022789 |

# | 3 | 2007 | Pulitzer Publishing Company | 831252 | 660911 |

# | 3 | 2007 | Ferdinand Supply | 1358900 | 1097240 |

# | 3 | 2007 | Beasley | 914613 | 738996 |

# | 3 | 2007 | Charity Incorporation. | 1161183 | 937118 |

# | 3 | 2007 | Ronan French | 1221061 | 967491 |

# | 3 | 2007 | Blevins | 1452732 | 1177612 |

# | 3 | 2007 | Ashton Washington | 1176731 | 946365 |

# | 3 | 2007 | Austin Burns | 1074380 | 880249 |

# | 3 | 2007 | Gte Corporation | 1457954 | 1192611 |

# | 3 | 2007 | Saint Andrews Golf Corporation | 1001177 | 809560 |

# | 3 | 2007 | Austin Ferrell | 1529855 | 1246530 |

# | 3 | 2007 | Hop Adams | 1262989 | 1025142 |

# | 3 | 2007 | Mullins Incorporation. | 1252123 | 1019755 |

# | 3 | 2007 | Processing Equipment Corporation | 775260 | 618070 |

# | 3 | 2007 | Meridian Resources Corporation | 1148103 | 924825 |

# | 3 | 2007 | Haynes | 1537373 | 1125776 |

# | 3 | 2007 | Hammett Farley | 1321901 | 961978 |

# | 3 | 2007 | Austin Ferrell | 924863 | 663225 |

# | 3 | 2007 | Cain | 1321389 | 862507 |

# | 3 | 2007 | Knight | 1308469 | 963146 |

# | 3 | 2007 | Serrano | 1220160 | 898476 |

# | 3 | 2007 | Colton Maldonado | 1381091 | 981108 |

# | 3 | 2007 | Googol | 1999830 | 1407710 |

# | 3 | 2007 | Mallory Lynch | 1034348 | 763892 |

# | 3 | 2007 | Zena Machines | 1439174 | 1180375 |

# | 3 | 2007 | Melvin House | 1183340 | 813721 |

# | 3 | 2007 | Emerson Electric Company | 1357907 | 960224 |

# | 3 | 2007 | Rudyard-Knapp | 974624 | 614697 |

# | 3 | 2007 | Pewter Gym | 1099114 | 751750 |

# | 3 | 2007 | Hop Adams | 1031352 | 704719 |

# | 3 | 2007 | Xavier Harmon | 1539275 | 1027035 |

# | 3 | 2007 | Cross | 986762 | 719824 |

# | 3 | 2007 | Martinez Disposables | 1026012 | 769290 |

# | 3 | 2007 | Atkins | 764172 | 549489 |

# | 3 | 2007 | Dakota Mills | 1170628 | 808802 |

# | 3 | 2007 | The Final Frontier | 770894 | 618545 |

# | 3 | 2007 | Clare Baird | 1244355 | 922369 |

# | 3 | 2007 | Schultz Learning | 1236104 | 888803 |

# | 3 | 2007 | Blevins | 1849511 | 1350124 |

# | 3 | 2007 | Baxter May | 1682298 | 1183114 |

# | 3 | 2007 | Knox Reid | 1213490 | 899888 |

# | 3 | 2007 | Starfleet Academy | 990152 | 644624 |

# | 3 | 2007 | Ferengi Treasures | 1025291 | 767705 |

# | 3 | 2007 | Tallulah | 824940 | 603261 |

# | 3 | 2007 | The Product Company (West) | 1223182 | 865075 |

# | 3 | 2007 | Ann Lee | 1007597 | 729479 |

# | 3 | 2007 | Merritt Long | 1099569 | 894863 |

# | 3 | 2007 | Kuame Barnes | 1196742 | 858914 |

# | 3 | 2007 | Beverly Equipment | 860621 | 632105 |

# | 3 | 2007 | Firstfed America Bancorp Incorporation | 1012620 | 708580 |

# | 3 | 2007 | Ronan French | 901234 | 637160 |

# | 3 | 2007 | Maya Brewer | 1103906 | 751510 |

# | 3 | 2007 | Zena Machines | 1512505 | 1028631 |

# | 3 | 2007 | Mullins Incorporation | 1230429 | 879122 |

# | 3 | 2007 | Raphael Allison | 1895814 | 1291763 |

# | 3 | 2007 | Martin Donaldson | 1174530 | 880582 |

# | 3 | 2007 | Gemma Castro | 1080132 | 778640 |

# | 3 | 2007 | Martinez Disposables | 774432 | 618341 |

# | 3 | 2007 | The Product Company (East) | 1250343 | 842146 |

# | 3 | 2007 | Room Plus Incorporation | 6974062 | 94222 |

# | 3 | 2007 | Saint Andrews Golf Corporation | 14622646 | 175795 |

# | 3 | 2007 | Synaptic Pharmaceutical Corporation | 12159809 | 137485 |

# | 3 | 2007 | Cohesant Technologies Incorporation | 5891056 | 69808 |

# | 3 | 2007 | Publishing Company Of North America Incorporation | 7625793 | 96923 |

# | 3 | 2007 | Newcor Incorporation | 9773717 | 119731 |

# | 3 | 2007 | Railamerica Incorporation | 5657989 | 51460 |

# | 3 | 2007 | Meridian Resources Corporation | 13083493 | 156729 |

# | 3 | 2007 | Camera Platforms International Incorporation | 746241 | 607053 |

# | 3 | 2007 | V E V SA | 7512205 | 78344 |

# | 3 | 2007 | Scp Pool Corporation | 9982333 | 117305 |

# | 3 | 2007 | Camera Platforms International Incorporation | 8349329 | 94772 |

# | 3 | 2007 | Motts Holdings Incorporation | 5257760 | 73823 |

# | 3 | 2007 | Labor Ready Incorporation | 13254615 | 176326 |

# | 3 | 2007 | Shaw Brothers | 4551283 | 74811 |

# | 3 | 2007 | Chemfix Technologies Incorporation | 3654740 | 48636 |

# | 3 | 2007 | Ligand Pharmaceuticals Incorporation | 5092338 | 60807 |

# | 3 | 2007 | Helpmate Robotics Incorporation | 2178848 | 22753 |

# | 3 | 2007 | Liberty Homes Incorporation | 2548486 | 31792 |

# | 4 | 2007 | Beverly Equipment | 1806252 | 1465861 |

# | 4 | 2007 | Cross | 1366334 | 1100311 |

# | 4 | 2007 | Firstfed America Bancorp Incorporation | 7939964 | 96977 |

# | 4 | 2007 | Lnr Property Corporation | 11932988 | 134093 |

# | 4 | 2007 | Gte Corporation | 8786296 | 91886 |

# | 4 | 2007 | Usx - Steel Group Incorporation | 8756624 | 96376 |

# | 4 | 2007 | Beckman Coulter Incorporation | 4465758 | 43341 |

# | 4 | 2007 | Pulitzer Publishing Company | 9423339 | 93828 |

# | 4 | 2007 | Setron | 10913319 | 113040 |

# | 4 | 2007 | Greenman Technologies Incorporation | 4506930 | 62924 |

# | 4 | 2007 | Polymer Group Incorporation | 8266578 | 95584 |

# | 4 | 2007 | Emerson Electric Co. | 9544316 | 98671 |

# | 4 | 2007 | Firstfed America Bancorp Incorporation | 1299487 | 1042741 |

# | 4 | 2007 | Integral - A Hotel & Restaurant Company | 12942350 | 155356 |

# | 4 | 2007 | Hickory Tech Corporation | 15346476 | 140117 |

# | 4 | 2007 | Televideo Incorporation | 12403928 | 130308 |

# | 4 | 2007 | Seattle Filmworks Incorporation | 13259286 | 150761 |

# | 4 | 2007 | Pricellular Corporation | 5823533 | 59274 |

# | 4 | 2007 | Magainin Pharmaceuticals Incorporation | 7953969 | 110908 |

# | 4 | 2007 | Sterling Financial Corporation Washington | 12092739 | 147205 |

# | 4 | 2007 | Fidelity National Corporation | 13442051 | 133924 |

# | 4 | 2007 | Fedders Corporation | 6227048 | 72084 |

# | 4 | 2007 | Clio-Hutchinson | 1212089 | 976823 |

# | 4 | 2007 | United Healthcare Corporation | 7709592 | 87582 |

# | 4 | 2007 | Greate Bay Casino Corporation | 3785449 | 57005 |

# | 4 | 2007 | Price Rivers | 1303308 | 1042388 |

# | 4 | 2007 | Santos LLC. | 1453583 | 1172765 |

# | 4 | 2007 | Santiago Processing | 1308819 | 1058242 |

# | 4 | 2007 | Chemfix Technologies Incorporation | 773887 | 630678 |

# | 4 | 2007 | Chantale-Huffman Incorporation. | 1274287 | 1034120 |

# | 4 | 2007 | Garrison Works | 1032342 | 839478 |

# | 4 | 2007 | Ruby Petty | 1306460 | 1058073 |

# | 4 | 2007 | Byron Chemicals | 898579 | 723902 |

# | 4 | 2007 | Emerson Electric Co. | 1163591 | 954254 |

# | 4 | 2007 | Oleg Jones | 1247336 | 1011797 |

# | 4 | 2007 | Genevieve Day | 1466949 | 1188864 |

# | 4 | 2007 | YuliChem | 1707247 | 1393821 |

# | 4 | 2007 | Setron | 1036498 | 843187 |

# | 4 | 2007 | Fuentes Incorporation. | 703079 | 563744 |

# | 4 | 2007 | Mendoza Chem | 1332059 | 1093335 |

# | 4 | 2007 | India-Stuart | 1404723 | 1140776 |

# | 4 | 2007 | Pulitzer Publishing Company | 720135 | 585834 |

# | 4 | 2007 | Ferdinand Supply | 1372655 | 1097458 |

# | 4 | 2007 | Beasley | 1596054 | 1298248 |

# | 4 | 2007 | Charity Incorporation. | 958233 | 778355 |

# | 4 | 2007 | Ronan French | 1139508 | 913460 |

# | 4 | 2007 | Blevins | 955309 | 778365 |

# | 4 | 2007 | Ashton Washington | 1183731 | 960837 |

# | 4 | 2007 | Austin Burns | 1193468 | 971145 |

# | 4 | 2007 | Gte Corporation | 1418062 | 1139627 |

# | 4 | 2007 | Saint Andrews Golf Corporation | 832757 | 682316 |

# | 4 | 2007 | Austin Ferrell | 1057955 | 862811 |

# | 4 | 2007 | Hop Adams | 1009987 | 824774 |

# | 4 | 2007 | Mullins Incorporation. | 1512365 | 1219442 |

# | 4 | 2007 | Processing Equipment Corporation | 1014895 | 825150 |

# | 4 | 2007 | Meridian Resources Corporation | 1181136 | 960083 |

# | 4 | 2007 | Haynes | 1253691 | 905489 |

# | 4 | 2007 | Hammett Farley | 1627471 | 1074082 |

# | 4 | 2007 | Austin Ferrell | 1433805 | 906371 |

# | 4 | 2007 | Cain | 1321608 | 921189 |

# | 4 | 2007 | Knight | 828495 | 623682 |

# | 4 | 2007 | Serrano | 347703 | 239915 |

# | 4 | 2007 | Colton Maldonado | 1901932 | 1350931 |

# | 4 | 2007 | Googol | 1365347 | 993118 |

# | 4 | 2007 | Mallory Lynch | 986150 | 710317 |

# | 4 | 2007 | Zena Machines | 996704 | 805136 |

# | 4 | 2007 | Melvin House | 1152054 | 826188 |

# | 4 | 2007 | Emerson Electric Company | 904500 | 644987 |

# | 4 | 2007 | Rudyard-Knapp | 998574 | 671763 |

# | 4 | 2007 | Pewter Gym | 1036786 | 762440 |

# | 4 | 2007 | Hop Adams | 1444241 | 985031 |

# | 4 | 2007 | Xavier Harmon | 634596 | 482840 |

# | 4 | 2007 | Cross | 1048465 | 728865 |

# | 4 | 2007 | Martinez Disposables | 958105 | 713981 |

# | 4 | 2007 | Atkins | 826227 | 597358 |

# | 4 | 2007 | Dakota Mills | 1204230 | 845946 |

# | 4 | 2007 | The Final Frontier | 1328620 | 1070369 |

# | 4 | 2007 | Clare Baird | 1156833 | 832498 |

# | 4 | 2007 | Schultz Learning | 739602 | 524179 |

# | 4 | 2007 | Blevins | 1363337 | 1038615 |

# | 4 | 2007 | Baxter May | 1310520 | 932146 |

# | 4 | 2007 | Knox Reid | 1004014 | 721328 |

# | 4 | 2007 | Starfleet Academy | 1179533 | 832180 |

# | 4 | 2007 | Ferengi Treasures | 1194829 | 888625 |

# | 4 | 2007 | Tallulah | 1422945 | 980899 |

# | 4 | 2007 | The Product Company (West) | 1119437 | 771850 |

# | 4 | 2007 | Ann Lee | 1099268 | 810755 |

# | 4 | 2007 | Merritt Long | 1385678 | 1122714 |

# | 4 | 2007 | Kuame Barnes | 1370810 | 948832 |

# | 4 | 2007 | Beverly Equipment | 1057508 | 743737 |

# | 4 | 2007 | Firstfed America Bancorp Incorporation | 1356169 | 933979 |

# | 4 | 2007 | Ronan French | 995325 | 694026 |

# | 4 | 2007 | Maya Brewer | 981453 | 711891 |

# | 4 | 2007 | Zena Machines | 1028151 | 759693 |

# | 4 | 2007 | Mullins Incorporation | 1134912 | 795629 |

# | 4 | 2007 | Raphael Allison | 1350660 | 966553 |

# | 4 | 2007 | Martin Donaldson | 1120844 | 735606 |

# | 4 | 2007 | Gemma Castro | 1347874 | 959392 |

# | 4 | 2007 | Martinez Disposables | 1266939 | 1014935 |

# | 4 | 2007 | The Product Company (East) | 787789 | 565374 |

# | 4 | 2007 | Room Plus Incorporation | 6046222 | 91661 |

# | 4 | 2007 | Saint Andrews Golf Corporation | 2638690 | 21735 |

# | 4 | 2007 | Synaptic Pharmaceutical Corporation | 7998385 | 84456 |

# | 4 | 2007 | Cohesant Technologies Incorporation | 8154778 | 91989 |

# | 4 | 2007 | Publishing Company Of North America Incorporation | 9025634 | 88050 |

# | 4 | 2007 | Newcor Incorporation | 10754660 | 114134 |

# | 4 | 2007 | Railamerica Incorporation | 9848642 | 85619 |

# | 4 | 2007 | Meridian Resources Corporation | 18033576 | 231937 |

# | 4 | 2007 | Camera Platforms International Incorporation | 1115662 | 907243 |

# | 4 | 2007 | V E V SA | 9338882 | 83160 |

# | 4 | 2007 | Scp Pool Corporation | 15296178 | 160876 |

# | 4 | 2007 | Camera Platforms International Incorporation | 10100822 | 108086 |

# | 4 | 2007 | Motts Holdings Incorporation | 7869540 | 94466 |

# | 4 | 2007 | Labor Ready Incorporation | 17291997 | 199298 |

# | 4 | 2007 | Shaw Brothers | 5106399 | 75358 |

# | 4 | 2007 | Chemfix Technologies Incorporation | 2529227 | 27993 |

# | 4 | 2007 | Ligand Pharmaceuticals Incorporation | 6564444 | 69789 |

# | 4 | 2007 | Helpmate Robotics Incorporation | 9381213 | 85367 |

# | 4 | 2007 | Liberty Homes Incorporation | 13562314 | 166703 |

# | 5 | 2007 | Beverly Equipment | 1256672 | 1013908 |

# | 5 | 2007 | Cross | 1290972 | 1037603 |

# | 5 | 2007 | Firstfed America Bancorp Incorporation | 4816039 | 46481 |

# | 5 | 2007 | Lnr Property Corporation | 7663637 | 95585 |

# | 5 | 2007 | Gte Corporation | 16381239 | 175367 |

# | 5 | 2007 | Usx - Steel Group Incorporation | 3861139 | 52835 |

# | 5 | 2007 | Beckman Coulter Incorporation | 8366997 | 101717 |

# | 5 | 2007 | Pulitzer Publishing Company | 7814924 | 81708 |

# | 5 | 2007 | Setron | 13036333 | 146056 |

# | 5 | 2007 | Greenman Technologies Incorporation | 10432146 | 121643 |

# | 5 | 2007 | Polymer Group Incorporation | 3154927 | 32891 |

# | 5 | 2007 | Emerson Electric Co. | 5377397 | 66139 |

# | 5 | 2007 | Firstfed America Bancorp Incorporation | 1399998 | 1133748 |

# | 5 | 2007 | Integral - A Hotel & Restaurant Company | 7070404 | 85109 |

# | 5 | 2007 | Hickory Tech Corporation | 7924513 | 85602 |

# | 5 | 2007 | Televideo Incorporation | 15174947 | 160827 |

# | 5 | 2007 | Seattle Filmworks Incorporation | 14436210 | 144943 |

# | 5 | 2007 | Pricellular Corporation | 13425587 | 123816 |

# | 5 | 2007 | Magainin Pharmaceuticals Incorporation | 6234354 | 83631 |

# | 5 | 2007 | Sterling Financial Corporation Washington | 6932861 | 73864 |

# | 5 | 2007 | Fidelity National Corporation | 6967289 | 88847 |

# | 5 | 2007 | Fedders Corporation | 8941352 | 104426 |

# | 5 | 2007 | Clio-Hutchinson | 1097997 | 899254 |

# | 5 | 2007 | United Healthcare Corporation | 9707966 | 113548 |

# | 5 | 2007 | Greate Bay Casino Corporation | 15208151 | 189239 |

# | 5 | 2007 | Price Rivers | 1515947 | 1229074 |

# | 5 | 2007 | Santos LLC. | 1057973 | 855493 |

# | 5 | 2007 | Santiago Processing | 1699906 | 1368981 |

# | 5 | 2007 | Chemfix Technologies Incorporation | 880191 | 703809 |

# | 5 | 2007 | Chantale-Huffman Incorporation. | 1024112 | 824789 |

# | 5 | 2007 | Garrison Works | 843375 | 692912 |

# | 5 | 2007 | Ruby Petty | 961514 | 776117 |

# | 5 | 2007 | Byron Chemicals | 1014347 | 819581 |

# | 5 | 2007 | Emerson Electric Co. | 909691 | 741769 |

# | 5 | 2007 | Oleg Jones | 1031707 | 831973 |

# | 5 | 2007 | Genevieve Day | 1041445 | 831396 |

# | 5 | 2007 | YuliChem | 1024165 | 827142 |

# | 5 | 2007 | Setron | 1239869 | 1004133 |

# | 5 | 2007 | Fuentes Incorporation. | 1245295 | 996934 |

# | 5 | 2007 | Mendoza Chem | 1397542 | 1145072 |

# | 5 | 2007 | India-Stuart | 1001033 | 812744 |

# | 5 | 2007 | Pulitzer Publishing Company | 962993 | 779568 |

# | 5 | 2007 | Ferdinand Supply | 1014596 | 830144 |

# | 5 | 2007 | Beasley | 640382 | 516622 |

# | 5 | 2007 | Charity Incorporation. | 1075277 | 860309 |

# | 5 | 2007 | Ronan French | 953034 | 764335 |

# | 5 | 2007 | Blevins | 1294773 | 1042649 |

# | 5 | 2007 | Ashton Washington | 1654503 | 1372116 |

# | 5 | 2007 | Austin Burns | 1099693 | 895153 |

# | 5 | 2007 | Gte Corporation | 1510379 | 1231608 |

# | 5 | 2007 | Saint Andrews Golf Corporation | 1193786 | 957928 |

# | 5 | 2007 | Austin Ferrell | 1426240 | 1153242 |

# | 5 | 2007 | Hop Adams | 882567 | 714487 |

# | 5 | 2007 | Mullins Incorporation. | 1093048 | 869267 |

# | 5 | 2007 | Processing Equipment Corporation | 1319202 | 1061573 |

# | 5 | 2007 | Meridian Resources Corporation | 1525398 | 1222214 |

# | 5 | 2007 | Haynes | 1038589 | 691105 |

# | 5 | 2007 | Hammett Farley | 1011002 | 737305 |

# | 5 | 2007 | Austin Ferrell | 1019452 | 754064 |

# | 5 | 2007 | Cain | 1169028 | 828632 |

# | 5 | 2007 | Knight | 1310019 | 905670 |

# | 5 | 2007 | Serrano | 1425231 | 991128 |

# | 5 | 2007 | Colton Maldonado | 1745693 | 1206942 |

# | 5 | 2007 | Googol | 1333353 | 943412 |

# | 5 | 2007 | Mallory Lynch | 1680199 | 1203437 |

# | 5 | 2007 | Zena Machines | 1337570 | 1076267 |

# | 5 | 2007 | Melvin House | 815058 | 581381 |

# | 5 | 2007 | Emerson Electric Company | 1494030 | 1059033 |

# | 5 | 2007 | Rudyard-Knapp | 1007730 | 719971 |

# | 5 | 2007 | Pewter Gym | 1029747 | 735766 |

# | 5 | 2007 | Hop Adams | 1235203 | 858359 |

# | 5 | 2007 | Xavier Harmon | 1368895 | 988079 |

# | 5 | 2007 | Cross | 1069727 | 735144 |

# | 5 | 2007 | Martinez Disposables | 1254378 | 857172 |

# | 5 | 2007 | Atkins | 917661 | 628124 |

# | 5 | 2007 | Dakota Mills | 1055425 | 759695 |

# | 5 | 2007 | The Final Frontier | 1203721 | 973018 |

# | 5 | 2007 | Clare Baird | 1334641 | 917276 |

# | 5 | 2007 | Schultz Learning | 1334766 | 960233 |

# | 5 | 2007 | Blevins | 1047716 | 686033 |

# | 5 | 2007 | Baxter May | 1061233 | 775039 |

# | 5 | 2007 | Knox Reid | 1721016 | 1173595 |

# | 5 | 2007 | Starfleet Academy | 1356156 | 972699 |

# | 5 | 2007 | Ferengi Treasures | 1322349 | 952891 |

# | 5 | 2007 | Tallulah | 1598775 | 1185922 |

# | 5 | 2007 | The Product Company (West) | 1419742 | 1046876 |

# | 5 | 2007 | Ann Lee | 945179 | 673002 |

# | 5 | 2007 | Merritt Long | 1449984 | 1175575 |

# | 5 | 2007 | Kuame Barnes | 1316084 | 923506 |

# | 5 | 2007 | Beverly Equipment | 807097 | 544101 |

# | 5 | 2007 | Firstfed America Bancorp Incorporation | 1204003 | 819210 |

# | 5 | 2007 | Ronan French | 1392496 | 1028072 |

# | 5 | 2007 | Maya Brewer | 2002346 | 1433218 |

# | 5 | 2007 | Zena Machines | 1189219 | 848507 |

# | 5 | 2007 | Mullins Incorporation | 1801561 | 1221841 |

# | 5 | 2007 | Raphael Allison | 1263688 | 865937 |

# | 5 | 2007 | Martin Donaldson | 1537091 | 1086027 |

# | 5 | 2007 | Gemma Castro | 1428970 | 943720 |

# | 5 | 2007 | Martinez Disposables | 1850873 | 1514200 |

# | 5 | 2007 | The Product Company (East) | 849200 | 571686 |

# | 5 | 2007 | Room Plus Incorporation | 3705845 | 36423 |

# | 5 | 2007 | Saint Andrews Golf Corporation | 12483432 | 151558 |

# | 5 | 2007 | Synaptic Pharmaceutical Corporation | 9191808 | 103688 |

# | 5 | 2007 | Cohesant Technologies Incorporation | 7871906 | 124947 |

# | 5 | 2007 | Publishing Company Of North America Incorporation | 8726667 | 105994 |

# | 5 | 2007 | Newcor Incorporation | 5072228 | 58146 |

# | 5 | 2007 | Railamerica Incorporation | 15680691 | 160479 |

# | 5 | 2007 | Meridian Resources Corporation | 3334097 | 45172 |

# | 5 | 2007 | Camera Platforms International Incorporation | 1186038 | 965099 |

# | 5 | 2007 | V E V SA | 12050808 | 115346 |

# | 5 | 2007 | Scp Pool Corporation | 4886095 | 65876 |

# | 5 | 2007 | Camera Platforms International Incorporation | 2931132 | 56543 |

# | 5 | 2007 | Motts Holdings Incorporation | 9164798 | 88149 |

# | 5 | 2007 | Labor Ready Incorporation | 8596425 | 112233 |

# | 5 | 2007 | Shaw Brothers | 4498366 | 62414 |

# | 5 | 2007 | Chemfix Technologies Incorporation | 5665847 | 65508 |

# | 5 | 2007 | Ligand Pharmaceuticals Incorporation | 12901064 | 140501 |

# | 5 | 2007 | Helpmate Robotics Incorporation | 8757616 | 110179 |

# | 5 | 2007 | Liberty Homes Incorporation | 5606520 | 80966 |

# | 6 | 2007 | Beverly Equipment | 1544154 | 1243530 |

# | 6 | 2007 | Cross | 1026241 | 837218 |

# | 6 | 2007 | Firstfed America Bancorp Incorporation | 7804311 | 90934 |

# | 6 | 2007 | Lnr Property Corporation | 9744101 | 135873 |

# | 6 | 2007 | Gte Corporation | 7334154 | 86991 |

# | 6 | 2007 | Usx - Steel Group Incorporation | 14766557 | 153911 |

# | 6 | 2007 | Beckman Coulter Incorporation | 10224368 | 128106 |

# | 6 | 2007 | Pulitzer Publishing Company | 6242040 | 73533 |

# | 6 | 2007 | Setron | 9414418 | 107225 |

# | 6 | 2007 | Greenman Technologies Incorporation | 14851394 | 171792 |

# | 6 | 2007 | Polymer Group Incorporation | 9988236 | 105369 |

# | 6 | 2007 | Emerson Electric Co. | 7898119 | 106008 |

# | 6 | 2007 | Firstfed America Bancorp Incorporation | 1332452 | 1060826 |

# | 6 | 2007 | Integral - A Hotel & Restaurant Company | 12723520 | 172244 |

# | 6 | 2007 | Hickory Tech Corporation | 6134294 | 66562 |

# | 6 | 2007 | Televideo Incorporation | 6217358 | 57733 |

# | 6 | 2007 | Seattle Filmworks Incorporation | 4595616 | 56442 |

# | 6 | 2007 | Pricellular Corporation | 14730906 | 185899 |

# | 6 | 2007 | Magainin Pharmaceuticals Incorporation | 6609493 | 96176 |

# | 6 | 2007 | Sterling Financial Corporation Washington | 12916910 | 143430 |

# | 6 | 2007 | Fidelity National Corporation | 9506619 | 124318 |

# | 6 | 2007 | Fedders Corporation | 6102857 | 63366 |

# | 6 | 2007 | Clio-Hutchinson | 1230465 | 990731 |

# | 6 | 2007 | United Healthcare Corporation | 15456949 | 189473 |

# | 6 | 2007 | Greate Bay Casino Corporation | 7516687 | 98366 |

# | 6 | 2007 | Price Rivers | 790349 | 640594 |

# | 6 | 2007 | Santos LLC. | 1160977 | 928152 |

# | 6 | 2007 | Santiago Processing | 1760475 | 1413527 |

# | 6 | 2007 | Chemfix Technologies Incorporation | 763385 | 617284 |

# | 6 | 2007 | Chantale-Huffman Incorporation. | 1507193 | 1226806 |

# | 6 | 2007 | Garrison Works | 1140180 | 915744 |

# | 6 | 2007 | Ruby Petty | 1319375 | 1070632 |

# | 6 | 2007 | Byron Chemicals | 1441177 | 1152820 |

# | 6 | 2007 | Emerson Electric Co. | 1047310 | 850425 |

# | 6 | 2007 | Oleg Jones | 1453680 | 1147474 |

# | 6 | 2007 | Genevieve Day | 1110565 | 900793 |

# | 6 | 2007 | YuliChem | 1475711 | 1176091 |

# | 6 | 2007 | Setron | 813918 | 660050 |

# | 6 | 2007 | Fuentes Incorporation. | 1125927 | 904310 |

# | 6 | 2007 | Mendoza Chem | 980408 | 801567 |

# | 6 | 2007 | India-Stuart | 1286027 | 1021905 |

# | 6 | 2007 | Pulitzer Publishing Company | 871945 | 706583 |

# | 6 | 2007 | Ferdinand Supply | 798811 | 640120 |

# | 6 | 2007 | Beasley | 1364502 | 1099155 |

# | 6 | 2007 | Charity Incorporation. | 1731263 | 1385852 |

# | 6 | 2007 | Ronan French | 1150743 | 930278 |

# | 6 | 2007 | Blevins | 1032244 | 841509 |

# | 6 | 2007 | Ashton Washington | 994365 | 804013 |

# | 6 | 2007 | Austin Burns | 1516690 | 1214837 |

# | 6 | 2007 | Gte Corporation | 1284917 | 1046107 |

# | 6 | 2007 | Saint Andrews Golf Corporation | 1250056 | 1000925 |

# | 6 | 2007 | Austin Ferrell | 1350437 | 1091520 |

# | 6 | 2007 | Hop Adams | 849395 | 695541 |

# | 6 | 2007 | Mullins Incorporation. | 1290740 | 1039207 |

# | 6 | 2007 | Processing Equipment Corporation | 753196 | 606229 |

# | 6 | 2007 | Meridian Resources Corporation | 1108648 | 903990 |

# | 6 | 2007 | Haynes | 1251472 | 880162 |

# | 6 | 2007 | Hammett Farley | 1218250 | 897743 |

# | 6 | 2007 | Austin Ferrell | 1412194 | 974265 |

# | 6 | 2007 | Cain | 1137479 | 813179 |

# | 6 | 2007 | Knight | 1050159 | 721311 |

# | 6 | 2007 | Serrano | 1286143 | 897568 |

# | 6 | 2007 | Colton Maldonado | 1185803 | 805614 |

# | 6 | 2007 | Googol | 1371104 | 970586 |

# | 6 | 2007 | Mallory Lynch | 1373869 | 914946 |

# | 6 | 2007 | Zena Machines | 1111652 | 903438 |

# | 6 | 2007 | Melvin House | 1058759 | 776667 |

# | 6 | 2007 | Emerson Electric Company | 1062525 | 736869 |

# | 6 | 2007 | Rudyard-Knapp | 1481576 | 1059655 |

# | 6 | 2007 | Pewter Gym | 1472160 | 1058571 |

# | 6 | 2007 | Hop Adams | 1313162 | 922119 |

# | 6 | 2007 | Xavier Harmon | 1175911 | 812117 |

# | 6 | 2007 | Cross | 1224840 | 818651 |

# | 6 | 2007 | Martinez Disposables | 1003024 | 711225 |

# | 6 | 2007 | Atkins | 1110825 | 793344 |

# | 6 | 2007 | Dakota Mills | 1384693 | 1009754 |

# | 6 | 2007 | The Final Frontier | 1443051 | 1161823 |

# | 6 | 2007 | Clare Baird | 1459712 | 1028175 |

# | 6 | 2007 | Schultz Learning | 966751 | 652691 |

# | 6 | 2007 | Blevins | 1333054 | 970228 |

# | 6 | 2007 | Baxter May | 950611 | 655701 |

# | 6 | 2007 | Knox Reid | 1106237 | 820601 |

# | 6 | 2007 | Starfleet Academy | 1066276 | 769086 |

# | 6 | 2007 | Ferengi Treasures | 1601040 | 1148156 |

# | 6 | 2007 | Tallulah | 1544324 | 1088524 |

# | 6 | 2007 | The Product Company (West) | 883925 | 579352 |

# | 6 | 2007 | Ann Lee | 1591047 | 1144163 |

# | 6 | 2007 | Merritt Long | 1386440 | 1125515 |

# | 6 | 2007 | Kuame Barnes | 1588476 | 1096135 |

# | 6 | 2007 | Beverly Equipment | 1090573 | 716537 |

# | 6 | 2007 | Firstfed America Bancorp Incorporation | 1508265 | 1059024 |

# | 6 | 2007 | Ronan French | 1007516 | 730072 |

# | 6 | 2007 | Maya Brewer | 1142737 | 825303 |

# | 6 | 2007 | Zena Machines | 893633 | 658424 |

# | 6 | 2007 | Mullins Incorporation | 1004396 | 686966 |

# | 6 | 2007 | Raphael Allison | 780324 | 510897 |

# | 6 | 2007 | Martin Donaldson | 1077946 | 728613 |

# | 6 | 2007 | Gemma Castro | 1217531 | 868856 |

# | 6 | 2007 | Martinez Disposables | 839601 | 666134 |

# | 6 | 2007 | The Product Company (East) | 1071256 | 728223 |

# | 6 | 2007 | Room Plus Incorporation | 6722392 | 93983 |

# | 6 | 2007 | Saint Andrews Golf Corporation | 9052677 | 92120 |

# | 6 | 2007 | Synaptic Pharmaceutical Corporation | 6667324 | 79671 |

# | 6 | 2007 | Cohesant Technologies Incorporation | 6760167 | 62326 |

# | 6 | 2007 | Publishing Company Of North America Incorporation | 7830017 | 90922 |

# | 6 | 2007 | Newcor Incorporation | 2694963 | 42964 |

# | 6 | 2007 | Railamerica Incorporation | 10704695 | 137441 |

# | 6 | 2007 | Meridian Resources Corporation | 2842477 | 42844 |

# | 6 | 2007 | Camera Platforms International Incorporation | 926111 | 734961 |

# | 6 | 2007 | V E V SA | 4774636 | 52424 |

# | 6 | 2007 | Scp Pool Corporation | 6271814 | 63211 |

# | 6 | 2007 | Camera Platforms International Incorporation | 12451089 | 121639 |

# | 6 | 2007 | Motts Holdings Incorporation | 7798907 | 85996 |

# | 6 | 2007 | Labor Ready Incorporation | 6651445 | 82178 |

# | 6 | 2007 | Shaw Brothers | 13726904 | 125265 |

# | 6 | 2007 | Chemfix Technologies Incorporation | 6307171 | 49692 |

# | 6 | 2007 | Ligand Pharmaceuticals Incorporation | 5450529 | 58430 |

# | 6 | 2007 | Helpmate Robotics Incorporation | 4963542 | 60832 |

# | 6 | 2007 | Liberty Homes Incorporation | 2823372 | 41015 |

# | 7 | 2007 | Beverly Equipment | 842742 | 695371 |

# | 7 | 2007 | Cross | 1581439 | 1285177 |

# | 7 | 2007 | Firstfed America Bancorp Incorporation | 6951359 | 71727 |

# | 7 | 2007 | Lnr Property Corporation | 8957905 | 102661 |

# | 7 | 2007 | Gte Corporation | 2606462 | 30093 |

# | 7 | 2007 | Usx - Steel Group Incorporation | 6833151 | 79963 |

# | 7 | 2007 | Beckman Coulter Incorporation | 3698040 | 34334 |

# | 7 | 2007 | Pulitzer Publishing Company | 8420089 | 92299 |

# | 7 | 2007 | Setron | 12749756 | 128215 |

# | 7 | 2007 | Greenman Technologies Incorporation | 9310926 | 96641 |

# | 7 | 2007 | Polymer Group Incorporation | 6167453 | 97097 |

# | 7 | 2007 | Emerson Electric Co. | 8450015 | 82568 |

# | 7 | 2007 | Firstfed America Bancorp Incorporation | 1531602 | 1218915 |

# | 7 | 2007 | Integral - A Hotel & Restaurant Company | 5441258 | 54755 |

# | 7 | 2007 | Hickory Tech Corporation | 15333180 | 178399 |

# | 7 | 2007 | Televideo Incorporation | 14898677 | 159109 |

# | 7 | 2007 | Seattle Filmworks Incorporation | 9701927 | 125117 |

# | 7 | 2007 | Pricellular Corporation | 4841579 | 62449 |

# | 7 | 2007 | Magainin Pharmaceuticals Incorporation | 12511517 | 124101 |

# | 7 | 2007 | Sterling Financial Corporation Washington | 7065855 | 89899 |

# | 7 | 2007 | Fidelity National Corporation | 7119755 | 90004 |

# | 7 | 2007 | Fedders Corporation | 3531742 | 60211 |

# | 7 | 2007 | Clio-Hutchinson | 778934 | 631243 |

# | 7 | 2007 | United Healthcare Corporation | 7272029 | 73617 |

# | 7 | 2007 | Greate Bay Casino Corporation | 11836200 | 113871 |

# | 7 | 2007 | Price Rivers | 1315582 | 1053699 |

# | 7 | 2007 | Santos LLC. | 1197255 | 971082 |

# | 7 | 2007 | Santiago Processing | 1422376 | 1157588 |

# | 7 | 2007 | Chemfix Technologies Incorporation | 1065052 | 857494 |

# | 7 | 2007 | Chantale-Huffman Incorporation. | 1108603 | 896907 |

# | 7 | 2007 | Garrison Works | 1180852 | 955869 |

# | 7 | 2007 | Ruby Petty | 1221351 | 980558 |

# | 7 | 2007 | Byron Chemicals | 1071717 | 859846 |

# | 7 | 2007 | Emerson Electric Co. | 1607215 | 1285170 |

# | 7 | 2007 | Oleg Jones | 1285540 | 1039380 |

# | 7 | 2007 | Genevieve Day | 1200018 | 950976 |

# | 7 | 2007 | YuliChem | 1212352 | 981682 |

# | 7 | 2007 | Setron | 1143861 | 915176 |

# | 7 | 2007 | Fuentes Incorporation. | 1273165 | 1022753 |

# | 7 | 2007 | Mendoza Chem | 1095913 | 878086 |

# | 7 | 2007 | India-Stuart | 1237487 | 1002511 |

# | 7 | 2007 | Pulitzer Publishing Company | 1061521 | 861912 |

# | 7 | 2007 | Ferdinand Supply | 1419071 | 1157519 |

# | 7 | 2007 | Beasley | 1007805 | 818073 |

# | 7 | 2007 | Charity Incorporation. | 1186049 | 977529 |

# | 7 | 2007 | Ronan French | 1104080 | 891194 |

# | 7 | 2007 | Blevins | 940163 | 749098 |

# | 7 | 2007 | Ashton Washington | 1161787 | 942827 |

# | 7 | 2007 | Austin Burns | 1231088 | 981978 |

# | 7 | 2007 | Gte Corporation | 1104288 | 877362 |

# | 7 | 2007 | Saint Andrews Golf Corporation | 1441882 | 1186989 |

# | 7 | 2007 | Austin Ferrell | 1396401 | 1137091 |

# | 7 | 2007 | Hop Adams | 1029600 | 842039 |

# | 7 | 2007 | Mullins Incorporation. | 984130 | 803962 |

# | 7 | 2007 | Processing Equipment Corporation | 1607878 | 1303828 |

# | 7 | 2007 | Meridian Resources Corporation | 1071219 | 879082 |

# | 7 | 2007 | Haynes | 885531 | 618317 |

# | 7 | 2007 | Hammett Farley | 1681770 | 1181258 |

# | 7 | 2007 | Austin Ferrell | 1457102 | 1078270 |

# | 7 | 2007 | Cain | 829819 | 589223 |

# | 7 | 2007 | Knight | 1161467 | 823024 |

# | 7 | 2007 | Serrano | 654754 | 460512 |

# | 7 | 2007 | Colton Maldonado | 1288936 | 911619 |

# | 7 | 2007 | Googol | 837407 | 621449 |

# | 7 | 2007 | Mallory Lynch | 1619364 | 1182867 |

# | 7 | 2007 | Zena Machines | 1071495 | 865048 |

# | 7 | 2007 | Melvin House | 1088161 | 776039 |

# | 7 | 2007 | Emerson Electric Company | 1001436 | 715765 |

# | 7 | 2007 | Rudyard-Knapp | 1641065 | 1184542 |

# | 7 | 2007 | Pewter Gym | 902993 | 629977 |

# | 7 | 2007 | Hop Adams | 1309345 | 894615 |

# | 7 | 2007 | Xavier Harmon | 608745 | 415674 |

# | 7 | 2007 | Cross | 1006340 | 762841 |

# | 7 | 2007 | Martinez Disposables | 1349490 | 970151 |

# | 7 | 2007 | Atkins | 1362929 | 968906 |

# | 7 | 2007 | Dakota Mills | 1260022 | 874806 |

# | 7 | 2007 | The Final Frontier | 1322333 | 1084165 |

# | 7 | 2007 | Clare Baird | 1581736 | 1135537 |

# | 7 | 2007 | Schultz Learning | 897990 | 646300 |

# | 7 | 2007 | Blevins | 1184807 | 879562 |

# | 7 | 2007 | Baxter May | 1468662 | 1101700 |

# | 7 | 2007 | Knox Reid | 1575668 | 1092206 |

# | 7 | 2007 | Starfleet Academy | 1435750 | 970470 |

# | 7 | 2007 | Ferengi Treasures | 1156010 | 736417 |

# | 7 | 2007 | Tallulah | 1171460 | 799639 |

# | 7 | 2007 | The Product Company (West) | 1049778 | 787015 |

# | 7 | 2007 | Ann Lee | 1433887 | 982377 |

# | 7 | 2007 | Merritt Long | 1225252 | 981728 |

# | 7 | 2007 | Kuame Barnes | 1506347 | 1089574 |

# | 7 | 2007 | Beverly Equipment | 1607542 | 1123308 |

# | 7 | 2007 | Firstfed America Bancorp Incorporation | 1461034 | 1080225 |

# | 7 | 2007 | Ronan French | 960878 | 661308 |

# | 7 | 2007 | Maya Brewer | 982855 | 725196 |

# | 7 | 2007 | Zena Machines | 1555168 | 1093353 |

# | 7 | 2007 | Mullins Incorporation | 922426 | 627177 |

# | 7 | 2007 | Raphael Allison | 1361360 | 951713 |

# | 7 | 2007 | Martin Donaldson | 2026075 | 1420300 |

# | 7 | 2007 | Gemma Castro | 934189 | 664812 |

# | 7 | 2007 | Martinez Disposables | 1205745 | 975645 |

# | 7 | 2007 | The Product Company (East) | 1009255 | 747698 |

# | 7 | 2007 | Room Plus Incorporation | 16796672 | 161279 |

# | 7 | 2007 | Saint Andrews Golf Corporation | 11220881 | 119801 |

# | 7 | 2007 | Synaptic Pharmaceutical Corporation | 11408997 | 115421 |

# | 7 | 2007 | Cohesant Technologies Incorporation | 3780496 | 41700 |

# | 7 | 2007 | Publishing Company Of North America Incorporation | 9966491 | 110179 |

# | 7 | 2007 | Newcor Incorporation | 7620881 | 108054 |

# | 7 | 2007 | Railamerica Incorporation | 3973057 | 41412 |

# | 7 | 2007 | Meridian Resources Corporation | 566664 | 4440 |

# | 7 | 2007 | Camera Platforms International Incorporation | 1498257 | 1228129 |

# | 7 | 2007 | V E V SA | 10627488 | 94519 |

# | 7 | 2007 | Scp Pool Corporation | 8702499 | 98039 |

# | 7 | 2007 | Camera Platforms International Incorporation | 2824488 | 50302 |

# | 7 | 2007 | Motts Holdings Incorporation | 5382955 | 78001 |

# | 7 | 2007 | Labor Ready Incorporation | 3895166 | 46532 |

# | 7 | 2007 | Shaw Brothers | 8506114 | 116128 |

# | 7 | 2007 | Chemfix Technologies Incorporation | 5772178 | 78182 |

# | 7 | 2007 | Ligand Pharmaceuticals Incorporation | 11130875 | 163929 |

# | 7 | 2007 | Helpmate Robotics Incorporation | 12759093 | 125130 |

# | 7 | 2007 | Liberty Homes Incorporation | 13699672 | 190125 |

# | 8 | 2007 | Beverly Equipment | 1230794 | 1001918 |

# | 8 | 2007 | Cross | 918807 | 748287 |

# | 8 | 2007 | Firstfed America Bancorp Incorporation | 10721731 | 141015 |

# | 8 | 2007 | Lnr Property Corporation | 11565539 | 128772 |

# | 8 | 2007 | Gte Corporation | 11116174 | 146268 |

# | 8 | 2007 | Usx - Steel Group Incorporation | 7112920 | 106979 |

# | 8 | 2007 | Beckman Coulter Incorporation | 7002403 | 98212 |

# | 8 | 2007 | Pulitzer Publishing Company | 9406023 | 113341 |

# | 8 | 2007 | Setron | 2364906 | 23969 |

# | 8 | 2007 | Greenman Technologies Incorporation | 3550861 | 53636 |

# | 8 | 2007 | Polymer Group Incorporation | 10945049 | 109714 |

# | 8 | 2007 | Emerson Electric Co. | 9707544 | 130171 |

# | 8 | 2007 | Firstfed America Bancorp Incorporation | 888769 | 718911 |

# | 8 | 2007 | Integral - A Hotel & Restaurant Company | 8291736 | 95499 |

# | 8 | 2007 | Hickory Tech Corporation | 11371581 | 116183 |

# | 8 | 2007 | Televideo Incorporation | 10155318 | 111322 |

# | 8 | 2007 | Seattle Filmworks Incorporation | 7693063 | 94838 |

# | 8 | 2007 | Pricellular Corporation | 6002670 | 56355 |

# | 8 | 2007 | Magainin Pharmaceuticals Incorporation | 5573192 | 71164 |

# | 8 | 2007 | Sterling Financial Corporation Washington | 4164983 | 50866 |

# | 8 | 2007 | Fidelity National Corporation | 16046404 | 150262 |

# | 8 | 2007 | Fedders Corporation | 6010750 | 59327 |

# | 8 | 2007 | Clio-Hutchinson | 1635360 | 1329334 |

# | 8 | 2007 | United Healthcare Corporation | 14724807 | 154790 |

# | 8 | 2007 | Greate Bay Casino Corporation | 4637417 | 68633 |

# | 8 | 2007 | Price Rivers | 1516975 | 1225942 |

# | 8 | 2007 | Santos LLC. | 1188277 | 980109 |

# | 8 | 2007 | Santiago Processing | 1459094 | 1175089 |

# | 8 | 2007 | Chemfix Technologies Incorporation | 1375883 | 1113756 |

# | 8 | 2007 | Chantale-Huffman Incorporation. | 1201093 | 995685 |

# | 8 | 2007 | Garrison Works | 1396330 | 1131014 |

# | 8 | 2007 | Ruby Petty | 943217 | 778308 |

# | 8 | 2007 | Byron Chemicals | 1132648 | 934361 |

# | 8 | 2007 | Emerson Electric Co. | 788759 | 632852 |

# | 8 | 2007 | Oleg Jones | 1318400 | 1079362 |

# | 8 | 2007 | Genevieve Day | 1787258 | 1433826 |

# | 8 | 2007 | YuliChem | 1218324 | 986288 |

# | 8 | 2007 | Setron | 1441689 | 1160229 |

# | 8 | 2007 | Fuentes Incorporation. | 1476072 | 1186335 |

# | 8 | 2007 | Mendoza Chem | 1107992 | 913796 |

# | 8 | 2007 | India-Stuart | 957544 | 779679 |

# | 8 | 2007 | Pulitzer Publishing Company | 1128847 | 921247 |

# | 8 | 2007 | Ferdinand Supply | 1789965 | 1430815 |

# | 8 | 2007 | Beasley | 1492219 | 1213978 |

# | 8 | 2007 | Charity Incorporation. | 1439327 | 1177582 |

# | 8 | 2007 | Ronan French | 1377913 | 1105054 |

# | 8 | 2007 | Blevins | 1035124 | 843226 |

# | 8 | 2007 | Ashton Washington | 1296975 | 1046596 |

# | 8 | 2007 | Austin Burns | 1226396 | 981279 |

# | 8 | 2007 | Gte Corporation | 1150501 | 927549 |

# | 8 | 2007 | Saint Andrews Golf Corporation | 1394162 | 1128060 |

# | 8 | 2007 | Austin Ferrell | 1220757 | 1001085 |

# | 8 | 2007 | Hop Adams | 1187138 | 952093 |

# | 8 | 2007 | Mullins Incorporation. | 1459921 | 1200057 |

# | 8 | 2007 | Processing Equipment Corporation | 1833756 | 1476886 |

# | 8 | 2007 | Meridian Resources Corporation | 1383375 | 1097263 |

# | 8 | 2007 | Haynes | 1088680 | 758222 |

# | 8 | 2007 | Hammett Farley | 994285 | 686938 |

# | 8 | 2007 | Austin Ferrell | 924197 | 648247 |

# | 8 | 2007 | Cain | 979874 | 681486 |

# | 8 | 2007 | Knight | 1010191 | 740650 |

# | 8 | 2007 | Serrano | 1281359 | 925485 |

# | 8 | 2007 | Colton Maldonado | 1312864 | 932298 |

# | 8 | 2007 | Googol | 957169 | 706337 |

# | 8 | 2007 | Mallory Lynch | 1320317 | 859994 |

# | 8 | 2007 | Zena Machines | 1149257 | 935699 |

# | 8 | 2007 | Melvin House | 1088036 | 738526 |

# | 8 | 2007 | Emerson Electric Company | 986800 | 720864 |

# | 8 | 2007 | Rudyard-Knapp | 1064446 | 741222 |

# | 8 | 2007 | Pewter Gym | 1707693 | 1214270 |

# | 8 | 2007 | Hop Adams | 1193013 | 865138 |

# | 8 | 2007 | Xavier Harmon | 814437 | 588524 |

# | 8 | 2007 | Cross | 1639831 | 1195676 |

# | 8 | 2007 | Martinez Disposables | 1066546 | 752974 |

# | 8 | 2007 | Atkins | 1424470 | 980973 |

# | 8 | 2007 | Dakota Mills | 943209 | 691873 |

# | 8 | 2007 | The Final Frontier | 1349124 | 1091717 |

# | 8 | 2007 | Clare Baird | 1044550 | 755225 |

# | 8 | 2007 | Schultz Learning | 821238 | 564917 |

# | 8 | 2007 | Blevins | 934927 | 657675 |

# | 8 | 2007 | Baxter May | 1204321 | 849760 |

# | 8 | 2007 | Knox Reid | 1208333 | 836635 |

# | 8 | 2007 | Starfleet Academy | 1461862 | 1071397 |

# | 8 | 2007 | Ferengi Treasures | 1148392 | 832372 |

# | 8 | 2007 | Tallulah | 1904358 | 1333644 |

# | 8 | 2007 | The Product Company (West) | 1452417 | 944047 |

# | 8 | 2007 | Ann Lee | 1183508 | 817272 |

# | 8 | 2007 | Merritt Long | 1337715 | 1062138 |

# | 8 | 2007 | Kuame Barnes | 1567644 | 1112057 |

# | 8 | 2007 | Beverly Equipment | 1165042 | 842901 |

# | 8 | 2007 | Firstfed America Bancorp Incorporation | 1260708 | 881045 |

# | 8 | 2007 | Ronan French | 1097334 | 788787 |

# | 8 | 2007 | Maya Brewer | 923283 | 662277 |

# | 8 | 2007 | Zena Machines | 1244918 | 862514 |

# | 8 | 2007 | Mullins Incorporation | 1597557 | 1066580 |

# | 8 | 2007 | Raphael Allison | 1204589 | 870435 |

# | 8 | 2007 | Martin Donaldson | 1494576 | 1053553 |

# | 8 | 2007 | Gemma Castro | 1263081 | 966458 |

# | 8 | 2007 | Martinez Disposables | 888614 | 725245 |

# | 8 | 2007 | The Product Company (East) | 1185848 | 833478 |

# | 8 | 2007 | Room Plus Incorporation | 6776695 | 71915 |

# | 8 | 2007 | Saint Andrews Golf Corporation | 13951521 | 156861 |

# | 8 | 2007 | Synaptic Pharmaceutical Corporation | 8202652 | 76536 |

# | 8 | 2007 | Cohesant Technologies Incorporation | 5981522 | 62265 |

# | 8 | 2007 | Publishing Company Of North America Incorporation | 7222752 | 99202 |

# | 8 | 2007 | Newcor Incorporation | 14492274 | 164585 |

# | 8 | 2007 | Railamerica Incorporation | 11357934 | 146897 |

# | 8 | 2007 | Meridian Resources Corporation | 6929452 | 68710 |

# | 8 | 2007 | Camera Platforms International Incorporation | 1362640 | 1126849 |

# | 8 | 2007 | V E V SA | 7950776 | 85262 |

# | 8 | 2007 | Scp Pool Corporation | 10128224 | 105601 |

# | 8 | 2007 | Camera Platforms International Incorporation | 7719179 | 90298 |

# | 8 | 2007 | Motts Holdings Incorporation | 4363715 | 47425 |

# | 8 | 2007 | Labor Ready Incorporation | 9621010 | 98372 |

# | 8 | 2007 | Shaw Brothers | 18073798 | 201095 |

# | 8 | 2007 | Chemfix Technologies Incorporation | 15566277 | 171923 |

# | 8 | 2007 | Ligand Pharmaceuticals Incorporation | 1783630 | 29825 |

# | 8 | 2007 | Helpmate Robotics Incorporation | 21865089 | 242619 |

# | 8 | 2007 | Liberty Homes Incorporation | 6040949 | 67440 |

# | 9 | 2007 | Beverly Equipment | 755697 | 608843 |

# | 9 | 2007 | Cross | 921533 | 754275 |

# | 9 | 2007 | Firstfed America Bancorp Incorporation | 5332903 | 82353 |

# | 9 | 2007 | Lnr Property Corporation | 10527728 | 97508 |

# | 9 | 2007 | Gte Corporation | 9993416 | 115217 |

# | 9 | 2007 | Usx - Steel Group Incorporation | 5299767 | 50789 |

# | 9 | 2007 | Beckman Coulter Incorporation | 3950933 | 58261 |

# | 9 | 2007 | Pulitzer Publishing Company | 11767017 | 111898 |

# | 9 | 2007 | Setron | 3665522 | 42709 |

# | 9 | 2007 | Greenman Technologies Incorporation | 8285447 | 96593 |

# | 9 | 2007 | Polymer Group Incorporation | 4270226 | 50058 |

# | 9 | 2007 | Emerson Electric Co. | 13525460 | 146350 |

# | 9 | 2007 | Firstfed America Bancorp Incorporation | 1024185 | 818482 |

# | 9 | 2007 | Integral - A Hotel & Restaurant Company | 9254078 | 114119 |

# | 9 | 2007 | Hickory Tech Corporation | 7300157 | 75430 |

# | 9 | 2007 | Televideo Incorporation | 4939271 | 57679 |

# | 9 | 2007 | Seattle Filmworks Incorporation | 10085093 | 119250 |

# | 9 | 2007 | Pricellular Corporation | 9167400 | 118918 |

# | 9 | 2007 | Magainin Pharmaceuticals Incorporation | 3644257 | 52654 |

# | 9 | 2007 | Sterling Financial Corporation Washington | 6514759 | 67484 |

# | 9 | 2007 | Fidelity National Corporation | 9539993 | 110893 |

# | 9 | 2007 | Fedders Corporation | 9902894 | 113073 |

# | 9 | 2007 | Clio-Hutchinson | 1143705 | 935753 |

# | 9 | 2007 | United Healthcare Corporation | 6487620 | 63057 |

# | 9 | 2007 | Greate Bay Casino Corporation | 17661321 | 177357 |

# | 9 | 2007 | Price Rivers | 1017940 | 837423 |

# | 9 | 2007 | Santos LLC. | 903272 | 741293 |

# | 9 | 2007 | Santiago Processing | 1333130 | 1104166 |

# | 9 | 2007 | Chemfix Technologies Incorporation | 1144207 | 920475 |

# | 9 | 2007 | Chantale-Huffman Incorporation. | 906470 | 726813 |

# | 9 | 2007 | Garrison Works | 1508858 | 1203169 |

# | 9 | 2007 | Ruby Petty | 1221926 | 986677 |

# | 9 | 2007 | Byron Chemicals | 1111774 | 903125 |

# | 9 | 2007 | Emerson Electric Co. | 1414115 | 1158339 |

# | 9 | 2007 | Oleg Jones | 1405755 | 1126811 |

# | 9 | 2007 | Genevieve Day | 1009504 | 815978 |

# | 9 | 2007 | YuliChem | 1827825 | 1475653 |

# | 9 | 2007 | Setron | 1161725 | 941077 |

# | 9 | 2007 | Fuentes Incorporation. | 1231570 | 980254 |

# | 9 | 2007 | Mendoza Chem | 963751 | 779841 |

# | 9 | 2007 | India-Stuart | 1063208 | 865104 |

# | 9 | 2007 | Pulitzer Publishing Company | 1499715 | 1202770 |

# | 9 | 2007 | Ferdinand Supply | 669719 | 537134 |

# | 9 | 2007 | Beasley | 994013 | 811810 |

# | 9 | 2007 | Charity Incorporation. | 859432 | 682561 |

# | 9 | 2007 | Ronan French | 1324090 | 1066957 |

# | 9 | 2007 | Blevins | 1376226 | 1114495 |

# | 9 | 2007 | Ashton Washington | 1417087 | 1143816 |

# | 9 | 2007 | Austin Burns | 1142409 | 921158 |

# | 9 | 2007 | Gte Corporation | 1104658 | 905957 |

# | 9 | 2007 | Saint Andrews Golf Corporation | 1237766 | 1023163 |

# | 9 | 2007 | Austin Ferrell | 1264571 | 1022522 |

# | 9 | 2007 | Hop Adams | 1359549 | 1113044 |

# | 9 | 2007 | Mullins Incorporation. | 1044529 | 828586 |

# | 9 | 2007 | Processing Equipment Corporation | 1387586 | 1119778 |

# | 9 | 2007 | Meridian Resources Corporation | 1328915 | 1077144 |

# | 9 | 2007 | Haynes | 924326 | 625177 |

# | 9 | 2007 | Hammett Farley | 1543942 | 1081781 |

# | 9 | 2007 | Austin Ferrell | 975814 | 736084 |

# | 9 | 2007 | Cain | 1394156 | 952401 |

# | 9 | 2007 | Knight | 730967 | 488443 |

# | 9 | 2007 | Serrano | 1126526 | 783327 |

# | 9 | 2007 | Colton Maldonado | 709389 | 471035 |

# | 9 | 2007 | Googol | 1176985 | 820762 |

# | 9 | 2007 | Mallory Lynch | 938899 | 665675 |

# | 9 | 2007 | Zena Machines | 1040468 | 847105 |

# | 9 | 2007 | Melvin House | 1446016 | 1038601 |

# | 9 | 2007 | Emerson Electric Company | 1447151 | 1053484 |

# | 9 | 2007 | Rudyard-Knapp | 1143318 | 764074 |

# | 9 | 2007 | Pewter Gym | 1437827 | 911524 |

# | 9 | 2007 | Hop Adams | 1552750 | 1095491 |

# | 9 | 2007 | Xavier Harmon | 990596 | 707274 |

# | 9 | 2007 | Cross | 1158845 | 777640 |

# | 9 | 2007 | Martinez Disposables | 1094923 | 729200 |

# | 9 | 2007 | Atkins | 1796925 | 1280198 |

# | 9 | 2007 | Dakota Mills | 1181936 | 839826 |

# | 9 | 2007 | The Final Frontier | 1038033 | 834936 |

# | 9 | 2007 | Clare Baird | 1364386 | 989071 |

# | 9 | 2007 | Schultz Learning | 1295251 | 957597 |

# | 9 | 2007 | Blevins | 959136 | 665712 |

# | 9 | 2007 | Baxter May | 1038357 | 709070 |

# | 9 | 2007 | Knox Reid | 1427737 | 1027396 |

# | 9 | 2007 | Starfleet Academy | 720858 | 529482 |

# | 9 | 2007 | Ferengi Treasures | 883340 | 614468 |

# | 9 | 2007 | Tallulah | 980436 | 711938 |

# | 9 | 2007 | The Product Company (West) | 1022844 | 727027 |

# | 9 | 2007 | Ann Lee | 1164714 | 861789 |

# | 9 | 2007 | Merritt Long | 1459682 | 1186473 |

# | 9 | 2007 | Kuame Barnes | 1546968 | 1054328 |

# | 9 | 2007 | Beverly Equipment | 1680141 | 1176345 |

# | 9 | 2007 | Firstfed America Bancorp Incorporation | 1102433 | 802180 |

# | 9 | 2007 | Ronan French | 1350154 | 972621 |

# | 9 | 2007 | Maya Brewer | 1005762 | 732924 |

# | 9 | 2007 | Zena Machines | 1411208 | 994404 |

# | 9 | 2007 | Mullins Incorporation | 1539611 | 1089793 |

# | 9 | 2007 | Raphael Allison | 1181723 | 843294 |

# | 9 | 2007 | Martin Donaldson | 1299014 | 925538 |

# | 9 | 2007 | Gemma Castro | 1093722 | 723752 |

# | 9 | 2007 | Martinez Disposables | 1341640 | 1081739 |

# | 9 | 2007 | The Product Company (East) | 1193105 | 798552 |

# | 9 | 2007 | Room Plus Incorporation | 2809476 | 25614 |

# | 9 | 2007 | Saint Andrews Golf Corporation | 14237934 | 140370 |

# | 9 | 2007 | Synaptic Pharmaceutical Corporation | 5901407 | 70728 |

# | 9 | 2007 | Cohesant Technologies Incorporation | 4268700 | 71187 |

# | 9 | 2007 | Publishing Company Of North America Incorporation | 8649511 | 96960 |

# | 9 | 2007 | Newcor Incorporation | 3931536 | 37509 |

# | 9 | 2007 | Railamerica Incorporation | 13782534 | 148679 |

# | 9 | 2007 | Meridian Resources Corporation | 4114406 | 50685 |

# | 9 | 2007 | Camera Platforms International Incorporation | 1037457 | 832343 |

# | 9 | 2007 | V E V SA | 15255448 | 170465 |

# | 9 | 2007 | Scp Pool Corporation | 5725625 | 60287 |

# | 9 | 2007 | Camera Platforms International Incorporation | 9978017 | 105935 |

# | 9 | 2007 | Motts Holdings Incorporation | 8823832 | 82750 |

# | 9 | 2007 | Labor Ready Incorporation | 11248720 | 141468 |

# | 9 | 2007 | Shaw Brothers | 3252787 | 45354 |

# | 9 | 2007 | Chemfix Technologies Incorporation | 7318268 | 75723 |

# | 9 | 2007 | Ligand Pharmaceuticals Incorporation | 6856987 | 72554 |

# | 9 | 2007 | Helpmate Robotics Incorporation | 12882935 | 148156 |

# | 9 | 2007 | Liberty Homes Incorporation | 8500092 | 110393 |

# | 10 | 2007 | Beverly Equipment | 1190324 | 954124 |

# | 10 | 2007 | Cross | 1389497 | 1120440 |

# | 10 | 2007 | Firstfed America Bancorp Incorporation | 14239634 | 164125 |

# | 10 | 2007 | Lnr Property Corporation | 13538623 | 173475 |

# | 10 | 2007 | Gte Corporation | 12096875 | 153753 |

# | 10 | 2007 | Usx - Steel Group Incorporation | 11373907 | 133015 |

# | 10 | 2007 | Beckman Coulter Incorporation | 3522357 | 40220 |

# | 10 | 2007 | Pulitzer Publishing Company | 15128583 | 169777 |

# | 10 | 2007 | Setron | 8177815 | 103623 |

# | 10 | 2007 | Greenman Technologies Incorporation | 6414986 | 88825 |

# | 10 | 2007 | Polymer Group Incorporation | 10940445 | 134897 |

# | 10 | 2007 | Emerson Electric Co. | 5740380 | 66479 |

# | 10 | 2007 | Firstfed America Bancorp Incorporation | 1484269 | 1195399 |

# | 10 | 2007 | Integral - A Hotel & Restaurant Company | 18805332 | 203069 |

# | 10 | 2007 | Hickory Tech Corporation | 2445148 | 30681 |

# | 10 | 2007 | Televideo Incorporation | 8440550 | 94406 |

# | 10 | 2007 | Seattle Filmworks Incorporation | 6331997 | 81248 |

# | 10 | 2007 | Pricellular Corporation | 3868665 | 34803 |

# | 10 | 2007 | Magainin Pharmaceuticals Incorporation | 9572215 | 121481 |

# | 10 | 2007 | Sterling Financial Corporation Washington | 9684350 | 110805 |

# | 10 | 2007 | Fidelity National Corporation | 7925153 | 88128 |

# | 10 | 2007 | Fedders Corporation | 7636660 | 81602 |

# | 10 | 2007 | Clio-Hutchinson | 1587855 | 1283610 |

# | 10 | 2007 | United Healthcare Corporation | 7894459 | 92184 |

# | 10 | 2007 | Greate Bay Casino Corporation | 19671644 | 207991 |

# | 10 | 2007 | Price Rivers | 1288442 | 1047882 |

# | 10 | 2007 | Santos LLC. | 1079397 | 865454 |

# | 10 | 2007 | Santiago Processing | 1009397 | 815736 |

# | 10 | 2007 | Chemfix Technologies Incorporation | 968614 | 789168 |

# | 10 | 2007 | Chantale-Huffman Incorporation. | 809983 | 654011 |

# | 10 | 2007 | Garrison Works | 968114 | 790148 |

# | 10 | 2007 | Ruby Petty | 1402333 | 1121856 |

# | 10 | 2007 | Byron Chemicals | 1413282 | 1124277 |

# | 10 | 2007 | Emerson Electric Co. | 1254184 | 1014897 |

# | 10 | 2007 | Oleg Jones | 877310 | 711463 |

# | 10 | 2007 | Genevieve Day | 1478295 | 1173411 |

# | 10 | 2007 | YuliChem | 1399089 | 1136769 |

# | 10 | 2007 | Setron | 891032 | 721820 |

# | 10 | 2007 | Fuentes Incorporation. | 1172074 | 968909 |

# | 10 | 2007 | Mendoza Chem | 1182726 | 965002 |

# | 10 | 2007 | India-Stuart | 1213634 | 969318 |

# | 10 | 2007 | Pulitzer Publishing Company | 1764031 | 1439215 |

# | 10 | 2007 | Ferdinand Supply | 1206707 | 980604 |

# | 10 | 2007 | Beasley | 784515 | 625398 |

# | 10 | 2007 | Charity Incorporation. | 760233 | 625703 |

# | 10 | 2007 | Ronan French | 1423754 | 1147090 |

# | 10 | 2007 | Blevins | 1621720 | 1303849 |

# | 10 | 2007 | Ashton Washington | 1564488 | 1250228 |

# | 10 | 2007 | Austin Burns | 1309471 | 1055240 |

# | 10 | 2007 | Gte Corporation | 856466 | 683564 |

# | 10 | 2007 | Saint Andrews Golf Corporation | 1344826 | 1104096 |

# | 10 | 2007 | Austin Ferrell | 1174050 | 954604 |

# | 10 | 2007 | Hop Adams | 882982 | 712333 |

# | 10 | 2007 | Mullins Incorporation. | 1446064 | 1164167 |

# | 10 | 2007 | Processing Equipment Corporation | 1005090 | 792350 |

# | 10 | 2007 | Meridian Resources Corporation | 1218689 | 994580 |

# | 10 | 2007 | Haynes | 1190885 | 846132 |

# | 10 | 2007 | Hammett Farley | 1476406 | 1090875 |

# | 10 | 2007 | Austin Ferrell | 1294114 | 853311 |

# | 10 | 2007 | Cain | 955300 | 693119 |

# | 10 | 2007 | Knight | 980501 | 687930 |

# | 10 | 2007 | Serrano | 1280827 | 877011 |

# | 10 | 2007 | Colton Maldonado | 1060591 | 747380 |

# | 10 | 2007 | Googol | 1161518 | 804799 |

# | 10 | 2007 | Mallory Lynch | 1283386 | 935430 |

# | 10 | 2007 | Zena Machines | 1051013 | 851751 |

# | 10 | 2007 | Melvin House | 1086066 | 792105 |

# | 10 | 2007 | Emerson Electric Company | 1229101 | 898031 |

# | 10 | 2007 | Rudyard-Knapp | 1231695 | 900348 |

# | 10 | 2007 | Pewter Gym | 1195695 | 800170 |

# | 10 | 2007 | Hop Adams | 1485112 | 1030129 |

# | 10 | 2007 | Xavier Harmon | 1299297 | 903416 |

# | 10 | 2007 | Cross | 1503169 | 1013335 |

# | 10 | 2007 | Martinez Disposables | 1647255 | 1128621 |

# | 10 | 2007 | Atkins | 860384 | 591431 |

# | 10 | 2007 | Dakota Mills | 1019651 | 723516 |

# | 10 | 2007 | The Final Frontier | 864390 | 698435 |

# | 10 | 2007 | Clare Baird | 1190944 | 811025 |

# | 10 | 2007 | Schultz Learning | 1241998 | 871323 |

# | 10 | 2007 | Blevins | 1186934 | 861523 |

# | 10 | 2007 | Baxter May | 1203477 | 834821 |

# | 10 | 2007 | Knox Reid | 1478919 | 1054310 |

# | 10 | 2007 | Starfleet Academy | 754218 | 505895 |

# | 10 | 2007 | Ferengi Treasures | 783130 | 515440 |

# | 10 | 2007 | Tallulah | 957290 | 660370 |

# | 10 | 2007 | The Product Company (West) | 1029812 | 711955 |

# | 10 | 2007 | Ann Lee | 1421302 | 1025448 |

# | 10 | 2007 | Merritt Long | 1196659 | 966955 |

# | 10 | 2007 | Kuame Barnes | 985582 | 706757 |

# | 10 | 2007 | Beverly Equipment | 715942 | 476026 |

# | 10 | 2007 | Firstfed America Bancorp Incorporation | 1254753 | 966201 |

# | 10 | 2007 | Ronan French | 1583056 | 1120082 |

# | 10 | 2007 | Maya Brewer | 1478623 | 994467 |

# | 10 | 2007 | Zena Machines | 1082330 | 781109 |

# | 10 | 2007 | Mullins Incorporation | 1280940 | 891682 |

# | 10 | 2007 | Raphael Allison | 1568643 | 1117797 |

# | 10 | 2007 | Martin Donaldson | 970844 | 698427 |

# | 10 | 2007 | Gemma Castro | 982205 | 691684 |

# | 10 | 2007 | Martinez Disposables | 1245446 | 979560 |

# | 10 | 2007 | The Product Company (East) | 1389273 | 1027025 |

# | 10 | 2007 | Room Plus Incorporation | 10295671 | 113455 |

# | 10 | 2007 | Saint Andrews Golf Corporation | 7766691 | 90579 |

# | 10 | 2007 | Synaptic Pharmaceutical Corporation | 4476320 | 41057 |

# | 10 | 2007 | Cohesant Technologies Incorporation | 2663992 | 37325 |

# | 10 | 2007 | Publishing Company Of North America Incorporation | 13918468 | 173427 |

# | 10 | 2007 | Newcor Incorporation | 6561393 | 72627 |

# | 10 | 2007 | Railamerica Incorporation | 9516231 | 107627 |

# | 10 | 2007 | Meridian Resources Corporation | 4730849 | 48148 |

# | 10 | 2007 | Camera Platforms International Incorporation | 1107346 | 888078 |

# | 10 | 2007 | V E V SA | 7228650 | 72893 |

# | 10 | 2007 | Scp Pool Corporation | 10934151 | 114218 |

# | 10 | 2007 | Camera Platforms International Incorporation | 4588889 | 79415 |

# | 10 | 2007 | Motts Holdings Incorporation | 7925074 | 103900 |

# | 10 | 2007 | Labor Ready Incorporation | 9004639 | 119752 |

# | 10 | 2007 | Shaw Brothers | 10615941 | 121282 |

# | 10 | 2007 | Chemfix Technologies Incorporation | 7906866 | 77002 |

# | 10 | 2007 | Ligand Pharmaceuticals Incorporation | 7252488 | 87366 |

# | 10 | 2007 | Helpmate Robotics Incorporation | 10234857 | 155922 |

# | 10 | 2007 | Liberty Homes Incorporation | 8695470 | 88523 |

# | 11 | 2007 | Beverly Equipment | 903825 | 730251 |

# | 11 | 2007 | Cross | 1014692 | 826243 |

# | 11 | 2007 | Firstfed America Bancorp Incorporation | 6180351 | 96946 |

# | 11 | 2007 | Lnr Property Corporation | 12523153 | 133264 |

# | 11 | 2007 | Gte Corporation | 14970824 | 162180 |

# | 11 | 2007 | Usx - Steel Group Incorporation | 8788935 | 110852 |

# | 11 | 2007 | Beckman Coulter Incorporation | 6417573 | 98402 |

# | 11 | 2007 | Pulitzer Publishing Company | 11215951 | 157501 |

# | 11 | 2007 | Setron | 3149524 | 48642 |

# | 11 | 2007 | Greenman Technologies Incorporation | 11891228 | 159971 |

# | 11 | 2007 | Polymer Group Incorporation | 14311730 | 144563 |

# | 11 | 2007 | Emerson Electric Co. | 4343335 | 65120 |

# | 11 | 2007 | Firstfed America Bancorp Incorporation | 1109766 | 895779 |

# | 11 | 2007 | Integral - A Hotel & Restaurant Company | 8048176 | 102351 |

# | 11 | 2007 | Hickory Tech Corporation | 16906091 | 192559 |

# | 11 | 2007 | Televideo Incorporation | 9742807 | 113965 |

# | 11 | 2007 | Seattle Filmworks Incorporation | 8851945 | 109320 |

# | 11 | 2007 | Pricellular Corporation | 9221287 | 152537 |

# | 11 | 2007 | Magainin Pharmaceuticals Incorporation | 2741876 | 40276 |

# | 11 | 2007 | Sterling Financial Corporation Washington | 7767788 | 89541 |

# | 11 | 2007 | Fidelity National Corporation | 11107814 | 114758 |

# | 11 | 2007 | Fedders Corporation | 10116266 | 119105 |

# | 11 | 2007 | Clio-Hutchinson | 964877 | 772114 |

# | 11 | 2007 | United Healthcare Corporation | 2905904 | 45984 |

# | 11 | 2007 | Greate Bay Casino Corporation | 4845818 | 52944 |

# | 11 | 2007 | Price Rivers | 749718 | 617573 |

# | 11 | 2007 | Santos LLC. | 1178783 | 954977 |

# | 11 | 2007 | Santiago Processing | 701891 | 575538 |

# | 11 | 2007 | Chemfix Technologies Incorporation | 1055111 | 848902 |

# | 11 | 2007 | Chantale-Huffman Incorporation. | 904306 | 726609 |

# | 11 | 2007 | Garrison Works | 1289170 | 1062469 |

# | 11 | 2007 | Ruby Petty | 1158274 | 940511 |

# | 11 | 2007 | Byron Chemicals | 1551933 | 1286483 |

# | 11 | 2007 | Emerson Electric Co. | 838336 | 696271 |

# | 11 | 2007 | Oleg Jones | 882803 | 720737 |

# | 11 | 2007 | Genevieve Day | 969588 | 777830 |

# | 11 | 2007 | YuliChem | 1062482 | 861798 |

# | 11 | 2007 | Setron | 987210 | 800597 |

# | 11 | 2007 | Fuentes Incorporation. | 943455 | 757514 |

# | 11 | 2007 | Mendoza Chem | 1299116 | 1037813 |

# | 11 | 2007 | India-Stuart | 1469127 | 1174073 |

# | 11 | 2007 | Pulitzer Publishing Company | 1173814 | 943472 |

# | 11 | 2007 | Ferdinand Supply | 1371868 | 1118106 |

# | 11 | 2007 | Beasley | 1430015 | 1152373 |

# | 11 | 2007 | Charity Incorporation. | 1609229 | 1295296 |

# | 11 | 2007 | Ronan French | 724548 | 581803 |

# | 11 | 2007 | Blevins | 957999 | 797750 |

# | 11 | 2007 | Ashton Washington | 1209913 | 958185 |

# | 11 | 2007 | Austin Burns | 1174833 | 933535 |

# | 11 | 2007 | Gte Corporation | 850154 | 683321 |

# | 11 | 2007 | Saint Andrews Golf Corporation | 1147614 | 928390 |

# | 11 | 2007 | Austin Ferrell | 1048087 | 835935 |

# | 11 | 2007 | Hop Adams | 1199205 | 972109 |

# | 11 | 2007 | Mullins Incorporation. | 960076 | 785008 |

# | 11 | 2007 | Processing Equipment Corporation | 1776220 | 1423926 |

# | 11 | 2007 | Meridian Resources Corporation | 1151112 | 927231 |

# | 11 | 2007 | Haynes | 1062517 | 722669 |

# | 11 | 2007 | Hammett Farley | 785097 | 519026 |

# | 11 | 2007 | Austin Ferrell | 1097475 | 729063 |

# | 11 | 2007 | Cain | 1106631 | 794693 |

# | 11 | 2007 | Knight | 935057 | 642935 |

# | 11 | 2007 | Serrano | 794756 | 566292 |

# | 11 | 2007 | Colton Maldonado | 1157771 | 801852 |

# | 11 | 2007 | Googol | 1190571 | 825934 |

# | 11 | 2007 | Mallory Lynch | 1525805 | 1098468 |

# | 11 | 2007 | Zena Machines | 981015 | 805766 |

# | 11 | 2007 | Melvin House | 1026440 | 727553 |

# | 11 | 2007 | Emerson Electric Company | 1332581 | 970150 |

# | 11 | 2007 | Rudyard-Knapp | 986540 | 663252 |

# | 11 | 2007 | Pewter Gym | 981349 | 673074 |

# | 11 | 2007 | Hop Adams | 1107762 | 772470 |

# | 11 | 2007 | Xavier Harmon | 1348117 | 991457 |

# | 11 | 2007 | Cross | 1382558 | 1000300 |

# | 11 | 2007 | Martinez Disposables | 1404573 | 977321 |

# | 11 | 2007 | Atkins | 1113437 | 814349 |

# | 11 | 2007 | Dakota Mills | 1132845 | 822116 |

# | 11 | 2007 | The Final Frontier | 1247645 | 995916 |

# | 11 | 2007 | Clare Baird | 1327820 | 965586 |

# | 11 | 2007 | Schultz Learning | 973361 | 693306 |

# | 11 | 2007 | Blevins | 1036428 | 737108 |

# | 11 | 2007 | Baxter May | 1471905 | 1022896 |

# | 11 | 2007 | Knox Reid | 1516637 | 1074263 |

# | 11 | 2007 | Starfleet Academy | 1235049 | 859790 |

# | 11 | 2007 | Ferengi Treasures | 1017037 | 728505 |

# | 11 | 2007 | Tallulah | 1427211 | 1011101 |

# | 11 | 2007 | The Product Company (West) | 1037428 | 734857 |

# | 11 | 2007 | Ann Lee | 1657054 | 1184622 |

# | 11 | 2007 | Merritt Long | 1416676 | 1160751 |

# | 11 | 2007 | Kuame Barnes | 1271827 | 911363 |

# | 11 | 2007 | Beverly Equipment | 1239599 | 925832 |

# | 11 | 2007 | Firstfed America Bancorp Incorporation | 1177707 | 822856 |

# | 11 | 2007 | Ronan French | 903052 | 583942 |

# | 11 | 2007 | Maya Brewer | 859293 | 598808 |

# | 11 | 2007 | Zena Machines | 1499388 | 1048466 |

# | 11 | 2007 | Mullins Incorporation | 1280774 | 907585 |

# | 11 | 2007 | Raphael Allison | 1078660 | 808882 |

# | 11 | 2007 | Martin Donaldson | 1299616 | 920281 |

# | 11 | 2007 | Gemma Castro | 1313884 | 918223 |

# | 11 | 2007 | Martinez Disposables | 1213180 | 978169 |

# | 11 | 2007 | The Product Company (East) | 1020008 | 768227 |

# | 11 | 2007 | Room Plus Incorporation | 6689873 | 73370 |

# | 11 | 2007 | Saint Andrews Golf Corporation | 9394289 | 126231 |

# | 11 | 2007 | Synaptic Pharmaceutical Corporation | 20870018 | 208974 |

# | 11 | 2007 | Cohesant Technologies Incorporation | 4699490 | 53462 |

# | 11 | 2007 | Publishing Company Of North America Incorporation | 11891351 | 115408 |

# | 11 | 2007 | Newcor Incorporation | 11545248 | 117751 |

# | 11 | 2007 | Railamerica Incorporation | 5175761 | 63873 |

# | 11 | 2007 | Meridian Resources Corporation | 10477770 | 114481 |

# | 11 | 2007 | Camera Platforms International Incorporation | 1402858 | 1139841 |

# | 11 | 2007 | V E V SA | 13672052 | 161795 |

# | 11 | 2007 | Scp Pool Corporation | 5200039 | 68056 |

# | 11 | 2007 | Camera Platforms International Incorporation | 8417364 | 94859 |

# | 11 | 2007 | Motts Holdings Incorporation | 4452310 | 59659 |

# | 11 | 2007 | Labor Ready Incorporation | 8331519 | 97177 |

# | 11 | 2007 | Shaw Brothers | 8273322 | 105130 |

# | 11 | 2007 | Chemfix Technologies Incorporation | 7361757 | 90263 |

# | 11 | 2007 | Ligand Pharmaceuticals Incorporation | 6016534 | 67954 |

# | 11 | 2007 | Helpmate Robotics Incorporation | 6142756 | 60088 |

# | 11 | 2007 | Liberty Homes Incorporation | 10130154 | 110267 |

# | 12 | 2007 | Beverly Equipment | 1392129 | 1132605 |

# | 12 | 2007 | Cross | 952070 | 760243 |

# | 12 | 2007 | Firstfed America Bancorp Incorporation | 5709882 | 58949 |

# | 12 | 2007 | Lnr Property Corporation | 12153334 | 129641 |

# | 12 | 2007 | Gte Corporation | 7789369 | 92874 |

# | 12 | 2007 | Usx - Steel Group Incorporation | 4086655 | 51184 |

# | 12 | 2007 | Beckman Coulter Incorporation | 14827985 | 175199 |

# | 12 | 2007 | Pulitzer Publishing Company | 5903532 | 68798 |

# | 12 | 2007 | Setron | 8716356 | 103291 |

# | 12 | 2007 | Greenman Technologies Incorporation | 14476668 | 161586 |

# | 12 | 2007 | Polymer Group Incorporation | 13868062 | 146927 |

# | 12 | 2007 | Emerson Electric Co. | 11646048 | 130283 |

# | 12 | 2007 | Firstfed America Bancorp Incorporation | 949550 | 752211 |

# | 12 | 2007 | Integral - A Hotel & Restaurant Company | 4433461 | 59874 |

# | 12 | 2007 | Hickory Tech Corporation | 9927598 | 99780 |

# | 12 | 2007 | Televideo Incorporation | 7436854 | 92381 |

# | 12 | 2007 | Seattle Filmworks Incorporation | 7169100 | 66823 |

# | 12 | 2007 | Pricellular Corporation | 2444732 | 37119 |

# | 12 | 2007 | Magainin Pharmaceuticals Incorporation | 1961953 | 20947 |

# | 12 | 2007 | Sterling Financial Corporation Washington | 4794196 | 78072 |

# | 12 | 2007 | Fidelity National Corporation | 9388163 | 87290 |

# | 12 | 2007 | Fedders Corporation | 3496538 | 40124 |

# | 12 | 2007 | Clio-Hutchinson | 1207383 | 974200 |

# | 12 | 2007 | United Healthcare Corporation | 7850970 | 82440 |

# | 12 | 2007 | Greate Bay Casino Corporation | 13247487 | 140559 |

# | 12 | 2007 | Price Rivers | 1798827 | 1465115 |

# | 12 | 2007 | Santos LLC. | 1594206 | 1270078 |

# | 12 | 2007 | Santiago Processing | 957481 | 776257 |

# | 12 | 2007 | Chemfix Technologies Incorporation | 986558 | 794699 |

# | 12 | 2007 | Chantale-Huffman Incorporation. | 1849239 | 1489427 |

# | 12 | 2007 | Garrison Works | 1763469 | 1443649 |

# | 12 | 2007 | Ruby Petty | 1792418 | 1443911 |

# | 12 | 2007 | Byron Chemicals | 517527 | 421989 |

# | 12 | 2007 | Emerson Electric Co. | 1317261 | 1058707 |

# | 12 | 2007 | Oleg Jones | 821269 | 661647 |

# | 12 | 2007 | Genevieve Day | 1023405 | 823024 |

# | 12 | 2007 | YuliChem | 1768674 | 1426874 |

# | 12 | 2007 | Setron | 1288910 | 1042641 |

# | 12 | 2007 | Fuentes Incorporation. | 1404437 | 1137763 |

# | 12 | 2007 | Mendoza Chem | 1100227 | 900124 |

# | 12 | 2007 | India-Stuart | 1436900 | 1155363 |

# | 12 | 2007 | Pulitzer Publishing Company | 1167114 | 937069 |

# | 12 | 2007 | Ferdinand Supply | 1454579 | 1190024 |

# | 12 | 2007 | Beasley | 1362842 | 1127922 |

# | 12 | 2007 | Charity Incorporation. | 1661340 | 1337388 |

# | 12 | 2007 | Ronan French | 1263527 | 1016857 |

# | 12 | 2007 | Blevins | 1548098 | 1248762 |

# | 12 | 2007 | Ashton Washington | 962512 | 776964 |

# | 12 | 2007 | Austin Burns | 854069 | 694352 |

# | 12 | 2007 | Gte Corporation | 1345507 | 1086575 |

# | 12 | 2007 | Saint Andrews Golf Corporation | 1386368 | 1121040 |

# | 12 | 2007 | Austin Ferrell | 1241238 | 990825 |

# | 12 | 2007 | Hop Adams | 912651 | 723276 |

# | 12 | 2007 | Mullins Incorporation. | 715419 | 580883 |

# | 12 | 2007 | Processing Equipment Corporation | 1859483 | 1500713 |

# | 12 | 2007 | Meridian Resources Corporation | 1360653 | 1102062 |

# | 12 | 2007 | Haynes | 1366808 | 948752 |

# | 12 | 2007 | Hammett Farley | 794381 | 555263 |

# | 12 | 2007 | Austin Ferrell | 1134826 | 809294 |

# | 12 | 2007 | Cain | 845347 | 589639 |

# | 12 | 2007 | Knight | 1067257 | 795012 |

# | 12 | 2007 | Serrano | 1076755 | 788904 |

# | 12 | 2007 | Colton Maldonado | 1326188 | 935859 |

# | 12 | 2007 | Googol | 1454897 | 1012288 |

# | 12 | 2007 | Mallory Lynch | 1154100 | 792083 |

# | 12 | 2007 | Zena Machines | 1095830 | 875703 |

# | 12 | 2007 | Melvin House | 1228951 | 850568 |

# | 12 | 2007 | Emerson Electric Company | 1408658 | 989525 |

# | 12 | 2007 | Rudyard-Knapp | 1047808 | 748759 |

# | 12 | 2007 | Pewter Gym | 1104728 | 745312 |

# | 12 | 2007 | Hop Adams | 880438 | 618612 |

# | 12 | 2007 | Xavier Harmon | 1368162 | 1029065 |

# | 12 | 2007 | Cross | 1164518 | 837888 |

# | 12 | 2007 | Martinez Disposables | 1458130 | 1005461 |

# | 12 | 2007 | Atkins | 1398144 | 915147 |

# | 12 | 2007 | Dakota Mills | 1106575 | 779076 |

# | 12 | 2007 | The Final Frontier | 880286 | 705550 |

# | 12 | 2007 | Clare Baird | 1315504 | 888486 |

# | 12 | 2007 | Schultz Learning | 1514861 | 1020969 |

# | 12 | 2007 | Blevins | 1186206 | 814932 |

# | 12 | 2007 | Baxter May | 1276905 | 876971 |

# | 12 | 2007 | Knox Reid | 1025445 | 749335 |

# | 12 | 2007 | Starfleet Academy | 1258013 | 853808 |

# | 12 | 2007 | Ferengi Treasures | 1783761 | 1204371 |

# | 12 | 2007 | Tallulah | 915458 | 637856 |

# | 12 | 2007 | The Product Company (West) | 1095782 | 732307 |

# | 12 | 2007 | Ann Lee | 1426886 | 1026862 |

# | 12 | 2007 | Merritt Long | 1015435 | 817509 |

# | 12 | 2007 | Kuame Barnes | 1351933 | 949286 |

# | 12 | 2007 | Beverly Equipment | 891862 | 618221 |

# | 12 | 2007 | Firstfed America Bancorp Incorporation | 1203375 | 852412 |

# | 12 | 2007 | Ronan French | 1382776 | 959924 |

# | 12 | 2007 | Maya Brewer | 1134294 | 803090 |

# | 12 | 2007 | Zena Machines | 777582 | 542939 |

# | 12 | 2007 | Mullins Incorporation | 989672 | 713204 |

# | 12 | 2007 | Raphael Allison | 1168007 | 841114 |

# | 12 | 2007 | Martin Donaldson | 828118 | 595932 |

# | 12 | 2007 | Gemma Castro | 1041404 | 731166 |

# | 12 | 2007 | Martinez Disposables | 1069325 | 858421 |

# | 12 | 2007 | The Product Company (East) | 1027437 | 746990 |

# | 12 | 2007 | Room Plus Incorporation | 2481425 | 41708 |

# | 12 | 2007 | Saint Andrews Golf Corporation | 7463945 | 73696 |

# | 12 | 2007 | Synaptic Pharmaceutical Corporation | 8455328 | 96848 |

# | 12 | 2007 | Cohesant Technologies Incorporation | 9025642 | 96002 |

# | 12 | 2007 | Publishing Company Of North America Incorporation | 12681496 | 130915 |

# | 12 | 2007 | Newcor Incorporation | 12449439 | 139715 |

# | 12 | 2007 | Railamerica Incorporation | 9221236 | 108170 |

# | 12 | 2007 | Meridian Resources Corporation | 8876379 | 111253 |

# | 12 | 2007 | Camera Platforms International Incorporation | 923868 | 756777 |

# | 12 | 2007 | V E V SA | 8609803 | 95898 |

# | 12 | 2007 | Scp Pool Corporation | 11951650 | 135396 |

# | 12 | 2007 | Camera Platforms International Incorporation | 8353148 | 99897 |

# | 12 | 2007 | Motts Holdings Incorporation | 6878689 | 83572 |

# | 12 | 2007 | Labor Ready Incorporation | 4865785 | 49406 |

# | 12 | 2007 | Shaw Brothers | 10435684 | 115170 |

# | 12 | 2007 | Chemfix Technologies Incorporation | 6305940 | 56618 |

# | 12 | 2007 | Ligand Pharmaceuticals Incorporation | 6381607 | 72022 |

# | 12 | 2007 | Helpmate Robotics Incorporation | 12357643 | 167065 |

# | 12 | 2007 | Liberty Homes Incorporation | 11248460 | 130155 |

# +-----------+----------+---------------------------------------------------+----------+---------+

# 1428 rows in set (0.00 sec)

# mysql>

# mysql> select salemonth, saleyear, name customer\_name, amt, cost from `month\_customer\_fp`

# -> join `month\_sales date` using(saleDate\_SK)

# -> join customer using(customer\_SK)

# -> where name = "Price Rivers";

# +-----------+----------+---------------+---------+---------+

# | salemonth | saleyear | customer\_name | amt | cost |

# +-----------+----------+---------------+---------+---------+

# | 1 | 2005 | Price Rivers | 752466 | 609394 |

# | 2 | 2005 | Price Rivers | 1329866 | 1080863 |

# | 3 | 2005 | Price Rivers | 1160667 | 930836 |

# | 4 | 2005 | Price Rivers | 1947437 | 1600718 |

# | 5 | 2005 | Price Rivers | 1575848 | 1257444 |

# | 6 | 2005 | Price Rivers | 1384753 | 1119884 |

# | 7 | 2005 | Price Rivers | 1161770 | 938484 |

# | 8 | 2005 | Price Rivers | 1169685 | 951891 |

# | 9 | 2005 | Price Rivers | 1149572 | 933082 |

# | 10 | 2005 | Price Rivers | 1267498 | 1023689 |

# | 11 | 2005 | Price Rivers | 1443431 | 1173733 |

# | 12 | 2005 | Price Rivers | 1549105 | 1245181 |

# | 1 | 2006 | Price Rivers | 1702438 | 1386348 |

# | 2 | 2006 | Price Rivers | 1254030 | 997967 |

# | 3 | 2006 | Price Rivers | 1263006 | 1009623 |

# | 4 | 2006 | Price Rivers | 1787616 | 1439246 |

# | 5 | 2006 | Price Rivers | 1016913 | 838623 |

# | 6 | 2006 | Price Rivers | 1353933 | 1093552 |

# | 7 | 2006 | Price Rivers | 1463734 | 1195586 |

# | 8 | 2006 | Price Rivers | 1307891 | 1052427 |

# | 9 | 2006 | Price Rivers | 1453515 | 1159462 |

# | 10 | 2006 | Price Rivers | 1144420 | 912277 |

# | 11 | 2006 | Price Rivers | 675375 | 529783 |

# | 12 | 2006 | Price Rivers | 1019360 | 815340 |

# | 1 | 2007 | Price Rivers | 1516011 | 1233147 |

# | 2 | 2007 | Price Rivers | 871442 | 703080 |

# | 3 | 2007 | Price Rivers | 1587418 | 1284898 |

# | 4 | 2007 | Price Rivers | 1303308 | 1042388 |

# | 5 | 2007 | Price Rivers | 1515947 | 1229074 |

# | 6 | 2007 | Price Rivers | 790349 | 640594 |

# | 7 | 2007 | Price Rivers | 1315582 | 1053699 |

# | 8 | 2007 | Price Rivers | 1516975 | 1225942 |

# | 9 | 2007 | Price Rivers | 1017940 | 837423 |

# | 10 | 2007 | Price Rivers | 1288442 | 1047882 |

# | 11 | 2007 | Price Rivers | 749718 | 617573 |

# | 12 | 2007 | Price Rivers | 1798827 | 1465115 |

# | 1 | 2008 | Price Rivers | 1373850 | 1111285 |

# | 2 | 2008 | Price Rivers | 912645 | 741007 |

# | 3 | 2008 | Price Rivers | 1345884 | 1081194 |

# | 4 | 2008 | Price Rivers | 994826 | 812029 |

# | 5 | 2008 | Price Rivers | 1040534 | 848784 |

# | 6 | 2008 | Price Rivers | 1246940 | 999013 |

# | 7 | 2008 | Price Rivers | 1037595 | 851101 |

# | 8 | 2008 | Price Rivers | 858062 | 689960 |

# | 9 | 2008 | Price Rivers | 1396071 | 1118528 |

# | 10 | 2008 | Price Rivers | 985902 | 803830 |

# | 11 | 2008 | Price Rivers | 1125263 | 907485 |

# | 12 | 2008 | Price Rivers | 1303324 | 1059829 |

# | 1 | 2009 | Price Rivers | 1445944 | 1157572 |

# | 2 | 2009 | Price Rivers | 1215142 | 990177 |

# | 3 | 2009 | Price Rivers | 1089059 | 879857 |

# | 4 | 2009 | Price Rivers | 1398148 | 1146718 |

# | 5 | 2009 | Price Rivers | 1373584 | 1109451 |

# | 6 | 2009 | Price Rivers | 1158526 | 941155 |

# | 7 | 2009 | Price Rivers | 1348738 | 1108217 |

# | 8 | 2009 | Price Rivers | 1432428 | 1174581 |

# | 9 | 2009 | Price Rivers | 880589 | 722732 |

# | 10 | 2009 | Price Rivers | 1569520 | 1263289 |

# | 11 | 2009 | Price Rivers | 910069 | 737105 |

# | 12 | 2009 | Price Rivers | 1041439 | 836426 |

# | 1 | 2010 | Price Rivers | 1440595 | 1161982 |

# | 2 | 2010 | Price Rivers | 1176595 | 949339 |

# | 3 | 2010 | Price Rivers | 1502117 | 1214305 |

# | 4 | 2010 | Price Rivers | 1013943 | 818374 |

# | 5 | 2010 | Price Rivers | 1372681 | 1110356 |

# | 6 | 2010 | Price Rivers | 1184825 | 963964 |

# | 7 | 2010 | Price Rivers | 1357421 | 1086991 |

# | 8 | 2010 | Price Rivers | 1213361 | 988397 |

# | 9 | 2010 | Price Rivers | 1427946 | 1172146 |

# | 10 | 2010 | Price Rivers | 1205962 | 960309 |

# +-----------+----------+---------------+---------+---------+

# 70 rows in set (0.06 sec)

supplier\_FP (lost dimension)

-Show the total cost of products for each supplier.

INSERT INTO supplier\_FP (supplier\_SK, cost)

select supplier\_SK, cost from `financial performance` group by supplier\_SK;

Queries

select supplierName, supplierCompany, cost from supplier\_FP a

-> join supplier using(supplier\_SK);

+------------------------------------------+-----------------+-------+

| supplierName | supplierCompany | cost |

+------------------------------------------+-----------------+-------+

| Dollar General Corporation | TPCW | 16689 |

| Specialty Teleconstructors Incorporation | TPCE | 6918 |

| Saurer Group Holding | TPCE | 724 |

| Specialty Teleconstructors Incorporation | TPCW | 31476 |

| Sinclair Broadcast Group Incorporation | TPCW | 18008 |

| Sinclair Broadcast Group Incorporation | TPCE | 794 |

| Afg Industries Incorporation | TPCW | 4731 |

| Black Hills Corporation | TPCE | 623 |

| Black Hills Corporation | TPCW | 4337 |

| Immunex Corporation | TPCE | 2278 |

| Dollar General Corporation | TPCE | 6778 |

| Immunex Corporation | TPCW | 74373 |

| First Bancshares Incorporation | TPCW | 76894 |

| First Bancshares Incorporation | TPCE | 5861 |

| Afg Industries Incorporation | TPCE | 1591 |

| American General Ventures Incorporation | TPCW | 18749 |

| American General Ventures Incorporation | TPCE | 971 |

| Saurer Gruppe Holding | TPCW | 34072 |

| Fedders Corporation | TPCW | 31749 |

| Fedders Corporation | TPCE | 14355 |

| PEC | PEC | 9120 |

| TPCW | PEC | 26378 |

| TPCE | PEC | 43485 |

+------------------------------------------+-----------------+-------+

23 rows in set (0.00 sec)

mysql>

mysql> select supplierCompany, sum(cost) from supplier\_FP a

-> join supplier using(supplier\_SK)

-> group by supplierCompany;

+-----------------+-----------+

| supplierCompany | sum(cost) |

+-----------------+-----------+

| PEC | 78983 |

| TPCE | 40893 |

| TPCW | 311078 |

+-----------------+-----------+

3 rows in set (0.00 sec)

***VIII. Handling Slowly Changing Dimensions (SCD)***

a) What type of slowly changing dimension would you implement? Why? (There

Should be at least two different SCD types other than Type 0)

* Type 1 on Company Name attribute from product dimension when the name of company is an invalid value (In the example table any value other than TPCE is considered as an invalid value. ) The results can be found in scd1.txt file in SCD folder.
* Type 2 on address attributes (ADDR1,ADDR2, city, state, zip) from Customer dimension when those attributes values change because the customer address changed.
* Type 6 on price attributes (PRICE1, PRICE2) from product dimension when those values change, since it is important to have the historical price change and make easily comparisons beyond the historical prices and the current price.

b) Create a set of sample source data (minimum 15 records) and make a copy of dimension tables to demonstrate your choices of slowly changing dimension types.

Don’t apply this to your original data mart. Use Pentaho Kettle steps or any other tool

that you have used in the project. Describe how the slowly changing dimension types

were implemented and include the code.

Type 1 was implemented using sql statements.

Please run sad.sql file to create the table needed for performing SCD1 changes. The table used is called ‘product\_scd1’.

Queries used are:

 select \* from product\_SCD1;

select \* from product\_SCD1 where company = 'XXXX’;

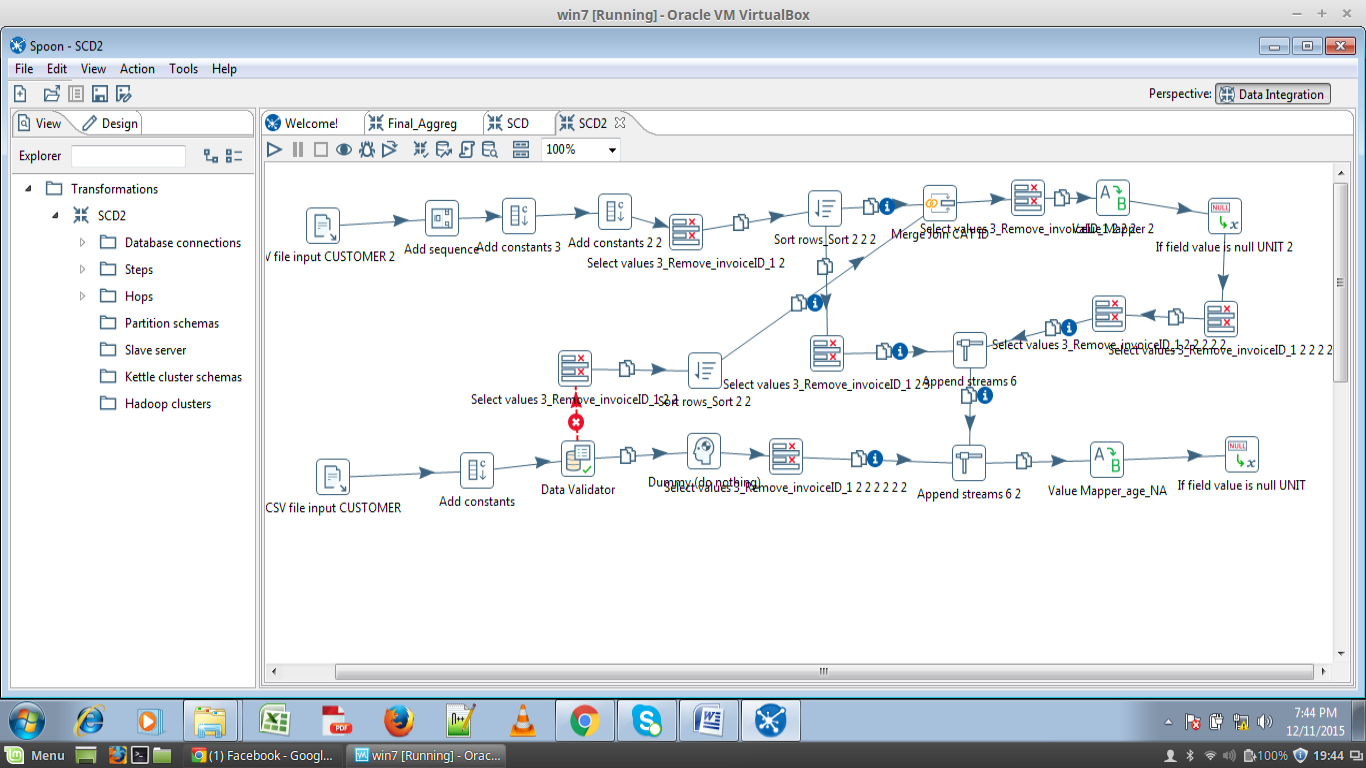
update product\_scd1 set company = 'TPCE' where company = 'XXXX’;

select \* from product\_SCD1 where company = 'XXXX’;

select \* from product\_SCD1;

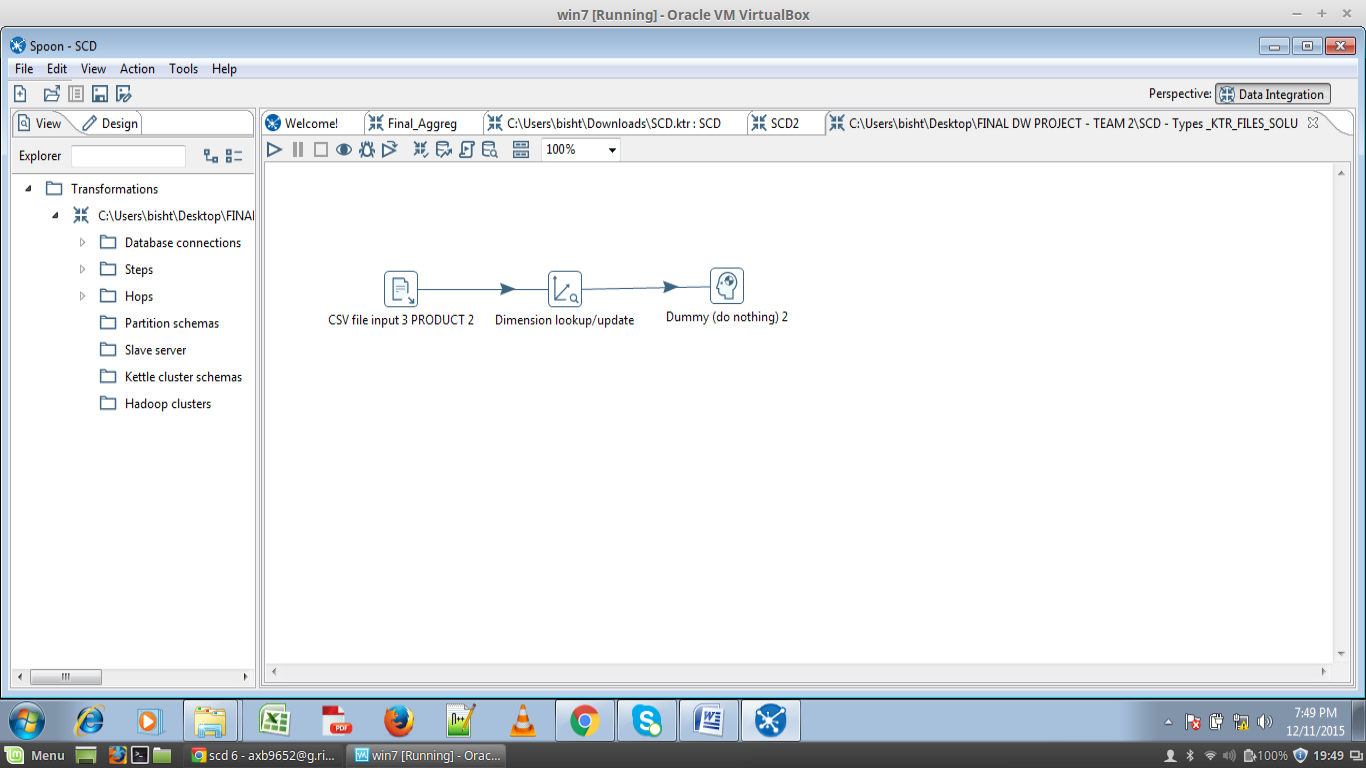
The results are attached in scd1.txt in the SCD folder.

Type 2 , we have used pentaho for transformations. The 2 input files used can be found in SCD folder. The first CSV input is Customer\_DM\_input(add).txt and Customer\_DM\_input.txt. Output can be seen at the end of the transformation.



The following are pentaho transformations done to implement SCD 2.

Type 6 , we have used pentaho for transformations. The input file used can be found in SCD folder. The CSV input is Product\_DM\_input(add).txt. Output can be seen at the end of the transformation.



IX Many-to-Many (N-M) Relationship Implementation Option

In a classical Data Warehouse design, the grain of fact table is known and each dimension is attached to the fact table record. In this scenario, for each fact table record there is only one record in the corresponding dimension, which is termed as one-to-many relation. But there are scenarios where a dimension can have zero, one or many records for a single fact table record. It is called many-to-many relation.

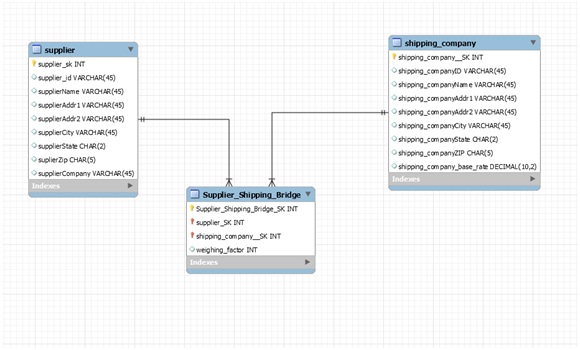
In the given scenario where TPC is interested in evaluating the performance of its suppliers. They need to solve the many-to-many relations between the supplier and the shipping companies (subcontractors). There is an open endedness in this problem as one supplier can have more than one shipping company or a big supplier can have more than 10 shippers. There is no upper limit on the number of shippers a supplier can have.

If this design is implemented in the classical Data warehousing problem, the SQL’s group by logic will fail.

To implement this many-to-may problem, Kimball proposes a “Bridge Table Approach”, it will be between the Supplier dimension and shipping company dimension. In our scenario we will it as Supplier\_Shipping\_Bridge dimension. The primary of Supplier\_Shipping\_Bridge will be Supplier\_Shipping\_Bridge\_SK. This table will also have surrogate keys of Supplier dimension (Supplier\_SK) and Shipping\_Company dimension (Shipping\_Company\_SK). It will also have another attribute called “Weighting factor”.

The weighing factor is the percentage which identifies the business happened between a specific supplier and shipping companies.

The following is the E-R implementation of Supplier and Shipping problem. (many –to – many ) using “Bridge Table Approach”.



The following is the arbitrary sample output in the Supplier\_Shipping\_Bridge

|  |  |  |  |
| --- | --- | --- | --- |
| **Supplier\_Shipping\_Bridge\_SK** | **Supplier\_SK** | **Shipping\_company\_SK** | **weighting\_factor** |
| 1 | 1 | 2 | .5 |
| 2 | 1 | 3 | .5 |
| 3 | 2 | 4 | .3 |
| 4 | 2 | 5 | .3 |
| 5 | 2 | 1 | .3 |
| 6 | 4 | 2 | 1 |
| 7 | 5 | 3 | 1 |

In the clearly shown that for Supplier\_SK =1, there are two shipping companies with Shipping\_Company\_SK as 2 and 3. The weighing\_facor as .5 indicates that the Supplier\_SK =1 has done equal business with these two shipping companies. Whereas Supplier with Supplier\_SK =2 has done business with shipping companies with Shipping\_Company\_SK = 4, 5 and 1. Here the weighing\_factor as .3 states that the supplier with Supplier\_SK =2 has done business with Shipping\_Company\_SK = 4, 5 and 1.

The sum of weighing\_factor for a given supplier must be 1.

References:

Kimball, R. (1998). *The data warehouse lifecycle toolkit: expert methods for designing, developing, and deploying data warehouses*. John Wiley & Sons.