Anil Poonai

CIS 4400 Assignment 2

# Exercise 1 – Importing and Transforming Sales Representatives as Type 2 SCD

I had to send the sales representatives data as an input and adjust the fields to be proper for later use. I then had to make Pentaho recognize it as a dimension table and write the sql code for my oracle database to have the table set up. After all that I had to send the data in through Pentaho.

## Sales Representatives Transformation


**Execution Results**

Logging | Execution History | Step Metrics | Performance Graph | Metrics | Preview data

| # | Stepname | Copynr | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Salesrep CSV file input | 0 | 0 | 33 | 34 | 0 | 0 | 0 | 0 | Finished | 0.0s | 11,333 | - |
| 2 | Dimension lookup/update | 0 | 33 | 33 | 33 | 33 | 0 | 0 | 0 | Finished | 1.0s | 33 | - |

| | SALESREP_DIM_ID | VERSION | DATE_FROM | DATE_TO | SALESREP_ID | FIRST_NAME | LAST_NAME | EMAIL | PHONE_NUMBER | HIRE_DATE | JOB_ID | SALARY | COMMISSION_PCT | MANAGER_ID | DEPARTMENT_ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 1 | (null) | (null) | (null) | (null) | (null) | (null) | (null) | (null) | (null) | (null) | (null) | (null) | (null) |
| 2 | 1 | 1 | 01-JAN-00 | 31-DEC-99 | 147 | Alberto | Errazuriz | AERRAZUR | 011.44.1344.429278 | 10-MAR-05 | SA_MAN | 12000 | 0.3 | 100 | 80 |
| 3 | 2 | 1 | 01-JAN-00 | 31-DEC-99 | 148 | Gerald | Cambrault | GCAMBRAU | 011.44.1344.619268 | 15-OCT-07 | SA_MAN | 11000 | 0.3 | 100 | 80 |
| 4 | 3 | 1 | 01-JAN-00 | 31-DEC-99 | 149 | Eleni | Zlotkey | EZLOTKEY | 011.44.1344.429018 | 29-JAN-08 | SA_MAN | 10500 | 0.2 | 100 | 80 |
| 5 | 4 | 1 | 01-JAN-00 | 31-DEC-99 | 150 | Peter | Tucker | PTUCKER | 011.44.1344.129268 | 30-JAN-05 | SA_REP | 10000 | 0.3 | 145 | 80 |
| 6 | 5 | 1 | 01-JAN-00 | 31-DEC-99 | 151 | David | Bernstein | DBERNSTE | 011.44.1344.345268 | 24-MAR-05 | SA_REP | 9500 | 0.25 | 145 | 80 |
| 7 | 6 | 1 | 01-JAN-00 | 31-DEC-99 | 152 | Peter | Hall | PHALL | 011.44.1344.478968 | 20-AUG-05 | SA_REP | 9000 | 0.25 | 145 | 80 |
| 8 | 7 | 1 | 01-JAN-00 | 31-DEC-99 | 153 | Christopher | Olsen | COLSEN | 011.44.1344.498718 | 30-MAR-06 | SA_REP | 8000 | 0.2 | 145 | 80 |
| 9 | 8 | 1 | 01-JAN-00 | 31-DEC-99 | 154 | Nanette | Cambrault | NCAMBRAU | 011.44.1344.987668 | 09-DEC-06 | SA_REP | 7500 | 0.2 | 145 | 80 |
| 10 | 9 | 1 | 01-JAN-00 | 31-DEC-99 | 155 | Oliver | Tuvault | OTUVAULT | 011.44.1344.486508 | 23-NOV-07 | SA_REP | 7000 | 0.15 | 145 | 80 |
| 11 | 10 | 1 | 01-JAN-00 | 31-DEC-99 | 156 | Janette | King | JKING | 011.44.1345.429268 | 30-JAN-04 | SA_REP | 10000 | 0.35 | 146 | 80 |
| 12 | 11 | 1 | 01-JAN-00 | 31-DEC-99 | 157 | Patrick | Sully | PSULLY | 011.44.1345.929268 | 04-MAR-04 | SA_REP | 9500 | 0.35 | 146 | 80 |
| 13 | 12 | 1 | 01-JAN-00 | 31-DEC-99 | 158 | Allan | McEwen | AMCEWEN | 011.44.1345.829268 | 01-AUG-04 | SA_REP | 9000 | 0.35 | 146 | 80 |
| 14 | 13 | 1 | 01-JAN-00 | 31-DEC-99 | 159 | Lindsey | Smith | LSMITH | 011.44.1345.729268 | 10-MAR-05 | SA_REP | 8000 | 0.3 | 146 | 80 |
| 15 | 14 | 1 | 01-JAN-00 | 31-DEC-99 | 160 | Louise | Doran | LDORAN | 011.44.1345.629268 | 15-DEC-05 | SA_REP | 7500 | 0.3 | 146 | 80 |
| 16 | 15 | 1 | 01-JAN-00 | 31-DEC-99 | 161 | Sarath | Sewall | SSEWALL | 011.44.1345.529268 | 03-NOV-06 | SA_REP | 7000 | 0.25 | 146 | 80 |
| 17 | 16 | 1 | 01-JAN-00 | 31-DEC-99 | 162 | Clara | Vishney | CVISHNEY | 011.44.1346.129268 | 11-NOV-05 | SA_REP | 10500 | 0.25 | 147 | 80 |
| 18 | 17 | 1 | 01-JAN-00 | 31-DEC-99 | 163 | Danielle | Greene | DGREENE | 011.44.1346.229268 | 19-MAR-07 | SA_REP | 9500 | 0.15 | 147 | 80 |
| 19 | 18 | 1 | 01-JAN-00 | 31-DEC-99 | 164 | Mattea | Marvins | MMARVINS | 011.44.1346.329268 | 24-JAN-08 | SA_REP | 7200 | 0.1 | 147 | 80 |
| 20 | 19 | 1 | 01-JAN-00 | 31-DEC-99 | 165 | David | Lee | DLEE | 011.44.1346.529268 | 23-FEB-08 | SA_REP | 6800 | 0.1 | 147 | 80 |
| 21 | 20 | 1 | 01-JAN-00 | 31-DEC-99 | 166 | Sundar | Ande | SANDE | 011.44.1346.629268 | 24-MAR-08 | SA_REP | 6400 | 0.1 | 147 | 80 |
| 22 | 21 | 1 | 01-JAN-00 | 31-DEC-99 | 167 | Amit | Banda | ABANDA | 011.44.1346.729268 | 21-APR-08 | SA_REP | 6200 | 0.1 | 147 | 80 |
| 23 | 22 | 1 | 01-JAN-00 | 31-DEC-99 | 168 | Lisa | Ozer | LOZER | 011.44.1343.929268 | 11-MAR-05 | SA_REP | 11500 | 0.25 | 148 | 80 |
| 24 | 23 | 1 | 01-JAN-00 | 31-DEC-99 | 169 | Harrison | Bloom | HBLOOM | 011.44.1343.829268 | 23-MAR-06 | SA_REP | 10000 | 0.2 | 148 | 80 |
| 25 | 24 | 1 | 01-JAN-00 | 31-DEC-99 | 170 | Tayler | Fox | TFOX | 011.44.1343.729268 | 24-JAN-06 | SA_REP | 9600 | 0.2 | 148 | 80 |
| 26 | 25 | 1 | 01-JAN-00 | 31-DEC-99 | 171 | William | Smith | WSMITH | 011.44.1343.629268 | 23-FEB-07 | SA_REP | 7400 | 0.15 | 148 | 80 |
| 27 | 26 | 1 | 01-JAN-00 | 31-DEC-99 | 172 | Elizabeth | Bates | EBATES | 011.44.1343.529268 | 24-MAR-07 | SA_REP | 7300 | 0.15 | 148 | 80 |
| 28 | 27 | 1 | 01-JAN-00 | 31-DEC-99 | 173 | Sundita | Kumar | SKUMAR | 011.44.1343.329268 | 21-APR-08 | SA_REP | 6100 | 0.1 | 148 | 80 |
| 29 | 28 | 1 | 01-JAN-00 | 31-DEC-99 | 174 | Ellen | Abel | EABEL | 011.44.1644.429267 | 11-MAY-04 | SA_REP | 11000 | 0.3 | 149 | 80 |
| 30 | 29 | 1 | 01-JAN-00 | 31-DEC-99 | 175 | Alyssa | Hutton | AHUTTON | 011.44.1644.429266 | 19-MAR-05 | SA_REP | 8800 | 0.25 | 149 | 80 |
| 31 | 30 | 1 | 01-JAN-00 | 31-DEC-99 | 176 | Jonathon | Taylor | JTAYLOR | 011.44.1644.429265 | 24-MAR-06 | SA_REP | 8600 | 0.2 | 149 | 80 |
| 32 | 31 | 1 | 01-JAN-00 | 31-DEC-99 | 177 | Jack | Livingston | JLIVINGS | 011.44.1644.429264 | 23-APR-06 | SA_REP | 8400 | 0.2 | 149 | 80 |
| 33 | 32 | 1 | 01-JAN-00 | 31-DEC-99 | 178 | Kimberely | Grant | KGRANT | 011.44.1644.429263 | 24-MAY-07 | SA_REP | 7000 | 0.15 | 149 | (null) |
| 34 | 33 | 1 | 01-JAN-00 | 31-DEC-99 | 179 | Charles | Johnson | CJOHNSON | 011.44.1644.429262 | 04-JAN-08 | SA_REP | 6200 | 0.1 | 149 | 80 |

# Implementing Type 1 Slowly Changing Dimension – Update in Place

I had to send the products data as an input and adjust the fields to be proper for later use. I then had to make Pentaho recognize it as a dimension table and write the sql code for my oracle database to have the table set up. Then I sent all of the data to through Pentaho but I had to resend it as one of the rows needed to be updated and I used the SCD method so that it simply replaced the old row. Then I finally sent the new data to the database.

Product Transformation


**Execution Results**

Logging | Execution History | Step Metrics | Performance Graph | Metrics | Preview data

| # | Stepname | Copynr | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Products CSV file input | 0 | 0 | 288 | 289 | 0 | 0 | 0 | 0 | Finished | 0.0s | 96,333 | - |
| 2 | Dimension lookup/update | 0 | 288 | 288 | 288 | 288 | 0 | 0 | 0 | Finished | 6.9s | 42 | - |

| | PRODUCT_DIM_ID | VERSION | DATE_FROM | DATE_TO | PRODUCT_ID | PRODUCT_NAME | LANGUAGE_ID | MIN_PRICE | LIST_PRICE | PRODUCT_STATUS | SUPPLIER_ID | WARRANTY_PERIOD | WEIGHT_CLASS | PRODUCT_DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 74 | 1 | 01-JAN-00 | 31-DEC-99 | 2252 | Monitor 21/HR/M | US | 717 | 889 | obsolete | 102079 | -5 | 5 | Monitor 21 inch (20 view |
| 2 | 75 | 1 | 01-JAN-00 | 31-DEC-99 | 3064 | Monitor 21/SD | US | 909 | 1023 | planned | 102096 | -5 | 5 | Monitor 21 inch (20 view |
| 3 | 76 | 1 | 01-JAN-00 | 31-DEC-99 | 3155 | Monitor Hinge - HD | US | 42 | 49 | orderable | 102092 | 10 | 4 | Monitor Hinge, heavy dut |
| 4 | 77 | 1 | 01-JAN-00 | 31-DEC-99 | 3234 | Monitor Hinge - STD | US | 34 | 39 | orderable | 102072 | 10 | 3 | Standard Monitor Hinge, |
| 5 | 78 | 1 | 01-JAN-00 | 31-DEC-99 | 3350 | Plasma Monitor 10/LE/VGA | US | 630 | 740 | orderable | 102068 | 1 | 3 | 10 inch low energy plasm |
| 6 | 79 | 1 | 01-JAN-00 | 31-DEC-99 | 2236 | Plasma Monitor 10/TFT/XGA | US | 863 | 964 | under development | 102090 | 1 | 3 | 10 inch TFT XGA flatscre |
| 7 | 80 | 1 | 01-JAN-00 | 31-DEC-99 | 2995 | SPNIX3.3 SAU | US | 62 | 70 | orderable | 103092 | 1 | 1 | Operating System Softwar |
| 8 | 81 | 1 | 01-JAN-00 | 31-DEC-99 | 3290 | SPNIX3.3 DU | US | 55 | 65 | orderable | 103092 | 1 | 1 | Operating System Softwar |
| 9 | 82 | 1 | 01-JAN-00 | 31-DEC-99 | 1778 | C for SPNIX3.3 - 1 Seat | US | 52 | 62 | orderable | 103092 | -6 | 1 | C programming software f |
| 10 | 83 | 1 | 01-JAN-00 | 31-DEC-99 | 1779 | C for SPNIX3.3 - Doc | US | 112 | 128 | orderable | 103092 | 10 | 2 | C programming language d |
| 11 | 84 | 1 | 01-JAN-00 | 31-DEC-99 | 1780 | C for SPNIX3.3 - Sys | US | 385 | 450 | orderable | 103092 | -6 | 1 | C programming software f |
| 12 | 85 | 1 | 01-JAN-00 | 31-DEC-99 | 2371 | C for SPNIX4.0 - Doc | US | 119 | 146 | orderable | 103092 | 10 | 2 | C programming language d |
| 13 | 86 | 1 | 01-JAN-00 | 31-DEC-99 | 2423 | C for SPNIX4.0 - 1 Seat | US | 73 | 84 | orderable | 103092 | -6 | 1 | C programming software f |
| 14 | 87 | 1 | 01-JAN-00 | 31-DEC-99 | 3501 | C for SPNIX4.0 - Sys | US | 448 | 555 | orderable | 103092 | -6 | 1 | C programming software f |
| 15 | 88 | 1 | 01-JAN-00 | 31-DEC-99 | 3502 | C for SPNIX3.3 -Sys/U | US | 88 | 105 | orderable | 103092 | -6 | 1 | C programming software f |
| 16 | 89 | 1 | 01-JAN-00 | 31-DEC-99 | 3503 | C for SPNIX3.3 - Seat/U | US | 18 | 22 | orderable | 103092 | -6 | 1 | C programming software f |
| 17 | 90 | 1 | 01-JAN-00 | 31-DEC-99 | 1774 | Base ISO CP - BL | US | 93 | 110 | orderable | 103088 | 0 | 1 | Base ISO Communication P |
| 18 | 91 | 1 | 01-JAN-00 | 31-DEC-99 | 1775 | Client ISO CP - S | US | 22 | 27 | orderable | 103087 | 0 | 1 | ISO Communication Packag |
| 19 | 92 | 1 | 01-JAN-00 | 31-DEC-99 | 1794 | OSI 8-16/IL | US | 112 | 128 | orderable | 103096 | 0 | 1 | OSI Layer 8 to 16 - Incr |
| 20 | 93 | 1 | 01-JAN-00 | 31-DEC-99 | 1825 | X25 - 1 Line License | US | 21 | 25 | orderable | 103093 | -6 | 1 | X25 network access contr |
| 21 | 94 | 1 | 01-JAN-00 | 31-DEC-99 | 2004 | IC Browser - S | US | 80 | 90 | orderable | 103086 | -1 | 1 | IC Web Browser for SPNIX |
| 22 | 95 | 1 | 01-JAN-00 | 31-DEC-99 | 2005 | IC Browser Doc - S | US | 100 | 115 | orderable | 103086 | 0 | 2 | Documentation set for IC |
| 23 | 96 | 1 | 01-JAN-00 | 31-DEC-99 | 2416 | Client ISO CP - S | US | 36 | 41 | orderable | 103088 | 0 | 1 | ISO Communication Packag |
| 24 | 97 | 1 | 01-JAN-00 | 31-DEC-99 | 2417 | Client ISO CP - V | US | 27 | 33 | orderable | 103088 | 0 | 1 | ISO Communication Packag |
| 25 | 98 | 1 | 01-JAN-00 | 31-DEC-99 | 2449 | OSI 1-4/IL | US | 72 | 83 | orderable | 103088 | 0 | 1 | OSI Layer 1 to 4 - Incre |
| 26 | 99 | 1 | 01-JAN-00 | 31-DEC-99 | 3101 | IC Browser - V | US | 67 | 75 | orderable | 103086 | -1 | 2 | IC Web Browser for Visio |
| 27 | 100 | 1 | 01-JAN-00 | 31-DEC-99 | 3170 | Smart Suite - V/SP | US | 132 | 161 | orderable | 103089 | -6 | 2 | Office Suite (SmartWrite |
| 28 | 0 | 1 | (null) | (null) | (null) | (null) | (null) | (null) | (null) | (null) | (null) | (null) | (null) | (null) |
| 29 | 1 | 1 | 01-JAN-00 | 31-DEC-99 | 3054 | Plasma Monitor 10/XGA | US | 519 | 600 | orderable | 102060 | 1 | 3 | 10 inch standard plasma |
| 30 | 2 | 1 | 01-JAN-00 | 31-DEC-99 | 1782 | Compact 400/DQ | US | 108 | 125 | obsolete | 102088 | -5 | 4 | 400 characters per secon |
| 31 | 3 | 1 | 01-JAN-00 | 31-DEC-99 | 2430 | Compact 400/LQ | US | 143 | 175 | orderable | 102087 | 2 | 4 | 400 characters per secon |
| 32 | 4 | 1 | 01-JAN-00 | 31-DEC-99 | 1792 | Industrial 600/DQ | US | 180 | 225 | orderable | 102088 | 5 | 4 | Wide carriage color capa |
| 33 | 5 | 1 | 01-JAN-00 | 31-DEC-99 | 1791 | Industrial 700/HD | US | 239 | 275 | orderable | 102086 | 5 | 5 | 700 characters per secon |
| 34 | 6 | 1 | 01-JAN-00 | 31-DEC-99 | 2302 | Inkjet B/6 | US | 121 | 150 | obsolete | 102096 | 2 | 3 | Inkjet Printer, black an |
| 35 | 7 | 1 | 01-JAN-00 | 31-DEC-99 | 2453 | Inkjet C/4 | US | 174 | 195 | orderable | 102090 | 2 | 3 | Inkjet Printer, color (w |
| 36 | 8 | 1 | 01-JAN-00 | 31-DEC-99 | 1797 | Inkjet C/8/HQ | US | 288 | 349 | orderable | 102094 | 2 | 3 | Inkjet printer, color, 8 |
| 37 | 9 | 1 | 01-JAN-00 | 31-DEC-99 | 2459 | LaserPro 1200/8/BW | US | 568 | 699 | under development | 102099 | 3 | 5 | Professional black and w |
| 38 | 10 | 1 | 01-JAN-00 | 31-DEC-99 | 3127 | LaserPro 600/6/BW | US | 444 | 498 | orderable | 102087 | 3 | 4 | Standard black and white |
| 39 | 11 | 1 | 01-JAN-00 | 31-DEC-99 | 2254 | HD 10GB /I | US | 371 | 453 | obsolete | 102071 | 2 | 2 | 10GB capacity hard disk |
| 40 | 12 | 1 | 01-JAN-00 | 31-DEC-99 | 3353 | HD 10GB /R | US | 413 | 489 | obsolete | 102071 | 3 | 1 | 10GB Removable hard disk |
| 41 | 13 | 1 | 01-JAN-00 | 31-DEC-99 | 3069 | HD 10GB /S | US | 350 | 436 | obsolete | 102051 | 2 | 1 | 10GB hard disk drive for |

## Exercise 2 – Importing and Transforming Promotions as Type 1 SCD

I had to send the promotions data as an input. I then had to make Pentaho recognize it as a dimension table and write the sql code for my oracle database to have the table set up. After all that I had to send the data in through Pentaho.

Promotions Transformation


**Execution Results**

Logging | Execution History | Step Metrics | Performance Graph | Metrics | Preview data

| # | Stepname | Copynr | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Promotions CSV file input | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | Finished | 0.0s | 3,000 | - |
| 2 | Promotions Dimension lookup/update | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | Finished | 0.3s | 7 | - |

| | PROMOTIONS_DIM_ID | VERSION | DATE_FROM | DATE_TO | PROMO_ID | PROMO_NAME |
|---|---|---|---|---|---|---|
| 1 | 0 | 1 | (null) | (null) | (null) | (null) |
| 2 | 1 | 1 | 01-JAN-00 | 31-DEC-99 | 1 | everyday low price |
| 3 | 2 | 1 | 01-JAN-00 | 31-DEC-99 | 2 | blowout sale |

## Generating a Date Dimension table

I had to make a bunch of rows with one column all being the same date, then I transformed it so that it would increase by one day for every iteration using a sequence and a calculator in Pentaho. I then had to make some more calculations that includes the sales month, year, quarter, etc. I then made that a dimensional table and added it to the database.

## Date Creation


**Execution Results**

Logging | Execution History | Step Metrics | Performance Graph | Metrics | Preview data

| # | Stepname | Copynr | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Generate rows | 0 | 0 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 550,000 | - |
| 2 | Add data sequence | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 137,500 | - |
| 3 | Calculate Dates | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 84,615 | - |
| 4 | Select values | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 64,706 | - |
| 5 | Calculate Additional Fields | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 32,353 | - |
| 6 | Date Dimension Update | 0 | 1100 | 1100 | 1100 | 1100 | 0 | 0 | 0 | Finished | 26.0s | 42 | - |

| | DATE_DIM_ID | VERSION | DATE_FROM | DATE_TO | SALES_DATE | SALES_DAY_OF_YEAR | SALES_MONTH | SALES_YEAR | SALES_QUARTER | SALES_MONTH_NAME |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 135 | 1 | 01-JAN-00 | 31-DEC-99 | 16-MAY-06 | 136 | 5 | 2006 | 2 | May |
| 2 | 136 | 1 | 01-JAN-00 | 31-DEC-99 | 17-MAY-06 | 137 | 5 | 2006 | 2 | May |
| 3 | 137 | 1 | 01-JAN-00 | 31-DEC-99 | 18-MAY-06 | 138 | 5 | 2006 | 2 | May |
| 4 | 138 | 1 | 01-JAN-00 | 31-DEC-99 | 19-MAY-06 | 139 | 5 | 2006 | 2 | May |
| 5 | 139 | 1 | 01-JAN-00 | 31-DEC-99 | 20-MAY-06 | 140 | 5 | 2006 | 2 | May |
| 6 | 140 | 1 | 01-JAN-00 | 31-DEC-99 | 21-MAY-06 | 141 | 5 | 2006 | 2 | May |
| 7 | 141 | 1 | 01-JAN-00 | 31-DEC-99 | 22-MAY-06 | 142 | 5 | 2006 | 2 | May |
| 8 | 142 | 1 | 01-JAN-00 | 31-DEC-99 | 23-MAY-06 | 143 | 5 | 2006 | 2 | May |
| 9 | 143 | 1 | 01-JAN-00 | 31-DEC-99 | 24-MAY-06 | 144 | 5 | 2006 | 2 | May |
| 10 | 144 | 1 | 01-JAN-00 | 31-DEC-99 | 25-MAY-06 | 145 | 5 | 2006 | 2 | May |
| 11 | 145 | 1 | 01-JAN-00 | 31-DEC-99 | 26-MAY-06 | 146 | 5 | 2006 | 2 | May |
| 12 | 146 | 1 | 01-JAN-00 | 31-DEC-99 | 27-MAY-06 | 147 | 5 | 2006 | 2 | May |
| 13 | 147 | 1 | 01-JAN-00 | 31-DEC-99 | 28-MAY-06 | 148 | 5 | 2006 | 2 | May |
| 14 | 148 | 1 | 01-JAN-00 | 31-DEC-99 | 29-MAY-06 | 149 | 5 | 2006 | 2 | May |
| 15 | 149 | 1 | 01-JAN-00 | 31-DEC-99 | 30-MAY-06 | 150 | 5 | 2006 | 2 | May |
| 16 | 150 | 1 | 01-JAN-00 | 31-DEC-99 | 31-MAY-06 | 151 | 5 | 2006 | 2 | May |
| 17 | 151 | 1 | 01-JAN-00 | 31-DEC-99 | 01-JUN-06 | 152 | 6 | 2006 | 2 | Jun |
| 18 | 152 | 1 | 01-JAN-00 | 31-DEC-99 | 02-JUN-06 | 153 | 6 | 2006 | 2 | Jun |
| 19 | 153 | 1 | 01-JAN-00 | 31-DEC-99 | 03-JUN-06 | 154 | 6 | 2006 | 2 | Jun |
| 20 | 154 | 1 | 01-JAN-00 | 31-DEC-99 | 04-JUN-06 | 155 | 6 | 2006 | 2 | Jun |
| 21 | 155 | 1 | 01-JAN-00 | 31-DEC-99 | 05-JUN-06 | 156 | 6 | 2006 | 2 | Jun |
| 22 | 156 | 1 | 01-JAN-00 | 31-DEC-99 | 06-JUN-06 | 157 | 6 | 2006 | 2 | Jun |
| 23 | 157 | 1 | 01-JAN-00 | 31-DEC-99 | 07-JUN-06 | 158 | 6 | 2006 | 2 | Jun |
| 24 | 158 | 1 | 01-JAN-00 | 31-DEC-99 | 08-JUN-06 | 159 | 6 | 2006 | 2 | Jun |
| 25 | 159 | 1 | 01-JAN-00 | 31-DEC-99 | 09-JUN-06 | 160 | 6 | 2006 | 2 | Jun |
| 26 | 160 | 1 | 01-JAN-00 | 31-DEC-99 | 10-JUN-06 | 161 | 6 | 2006 | 2 | Jun |
| 27 | 161 | 1 | 01-JAN-00 | 31-DEC-99 | 11-JUN-06 | 162 | 6 | 2006 | 2 | Jun |
| 28 | 162 | 1 | 01-JAN-00 | 31-DEC-99 | 12-JUN-06 | 163 | 6 | 2006 | 2 | Jun |
| 29 | 163 | 1 | 01-JAN-00 | 31-DEC-99 | 13-JUN-06 | 164 | 6 | 2006 | 2 | Jun |
| 30 | 164 | 1 | 01-JAN-00 | 31-DEC-99 | 14-JUN-06 | 165 | 6 | 2006 | 2 | Jun |
| 31 | 165 | 1 | 01-JAN-00 | 31-DEC-99 | 15-JUN-06 | 166 | 6 | 2006 | 2 | Jun |
| 32 | 166 | 1 | 01-JAN-00 | 31-DEC-99 | 16-JUN-06 | 167 | 6 | 2006 | 2 | Jun |
| 33 | 167 | 1 | 01-JAN-00 | 31-DEC-99 | 17-JUN-06 | 168 | 6 | 2006 | 2 | Jun |
| 34 | 168 | 1 | 01-JAN-00 | 31-DEC-99 | 18-JUN-06 | 169 | 6 | 2006 | 2 | Jun |
| 35 | 169 | 1 | 01-JAN-00 | 31-DEC-99 | 19-JUN-06 | 170 | 6 | 2006 | 2 | Jun |
| 36 | 170 | 1 | 01-JAN-00 | 31-DEC-99 | 20-JUN-06 | 171 | 6 | 2006 | 2 | Jun |
| 37 | 171 | 1 | 01-JAN-00 | 31-DEC-99 | 21-JUN-06 | 172 | 6 | 2006 | 2 | Jun |
| 38 | 172 | 1 | 01-JAN-00 | 31-DEC-99 | 22-JUN-06 | 173 | 6 | 2006 | 2 | Jun |
| 39 | 173 | 1 | 01-JAN-00 | 31-DEC-99 | 23-JUN-06 | 174 | 6 | 2006 | 2 | Jun |
| 40 | 174 | 1 | 01-JAN-00 | 31-DEC-99 | 24-JUN-06 | 175 | 6 | 2006 | 2 | Jun |

# Exercise 3 – Embellishing the Date Dimension with Additional Date information

I had to add on to the date table by making some more calculation such as the week in the month and the day in the month.

Additional Date Information added


**Execution Results**

Logging | Execution History | Step Metrics | Performance Graph | Metrics | Preview data

| # | Stepname | Copynr | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Generate rows | 0 | 0 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 1,100,000 | - |
| 2 | Add data sequence | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 220,000 | - |
| 3 | Calculate Dates | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 110,000 | - |
| 4 | Select values | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 84,615 | - |
| 5 | Calculate Additional Fields | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 30,556 | - |
| 6 | Date Dimension Update | 0 | 1100 | 1100 | 1100 | 1100 | 0 | 0 | 0 | Finished | 25.9s | 42 | - |

| | DATE_DIM_ID | VERSION | DATE_FROM | DATE_TO | SALES_DATE | SALES_DAY_OF_YEAR | SALES_MONTH | SALES_YEAR | SALES_QUARTER | SALES_MONTH_NAME | Sales Day of Week | Sales Day of Week Name | Sales Day of the Month |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 107 | 1 | 01-JAN-00 | 31-DEC-99 | 18-APR-06 | 108 | 4 | 2006 | 2 | Apr | 3 | Tuesday | 18 |
| 2 | 108 | 1 | 01-JAN-00 | 31-DEC-99 | 19-APR-06 | 109 | 4 | 2006 | 2 | Apr | 4 | Wednesday | 19 |
| 3 | 109 | 1 | 01-JAN-00 | 31-DEC-99 | 20-APR-06 | 110 | 4 | 2006 | 2 | Apr | 5 | Thursday | 20 |
| 4 | 110 | 1 | 01-JAN-00 | 31-DEC-99 | 21-APR-06 | 111 | 4 | 2006 | 2 | Apr | 6 | Friday | 21 |
| 5 | 111 | 1 | 01-JAN-00 | 31-DEC-99 | 22-APR-06 | 112 | 4 | 2006 | 2 | Apr | 7 | Saturday | 22 |
| 6 | 112 | 1 | 01-JAN-00 | 31-DEC-99 | 23-APR-06 | 113 | 4 | 2006 | 2 | Apr | 1 | Sunday | 23 |
| 7 | 113 | 1 | 01-JAN-00 | 31-DEC-99 | 24-APR-06 | 114 | 4 | 2006 | 2 | Apr | 2 | Monday | 24 |
| 8 | 114 | 1 | 01-JAN-00 | 31-DEC-99 | 25-APR-06 | 115 | 4 | 2006 | 2 | Apr | 3 | Tuesday | 25 |
| 9 | 115 | 1 | 01-JAN-00 | 31-DEC-99 | 26-APR-06 | 116 | 4 | 2006 | 2 | Apr | 4 | Wednesday | 26 |
| 10 | 116 | 1 | 01-JAN-00 | 31-DEC-99 | 27-APR-06 | 117 | 4 | 2006 | 2 | Apr | 5 | Thursday | 27 |
| 11 | 117 | 1 | 01-JAN-00 | 31-DEC-99 | 28-APR-06 | 118 | 4 | 2006 | 2 | Apr | 6 | Friday | 28 |
| 12 | 118 | 1 | 01-JAN-00 | 31-DEC-99 | 29-APR-06 | 119 | 4 | 2006 | 2 | Apr | 7 | Saturday | 29 |
| 13 | 119 | 1 | 01-JAN-00 | 31-DEC-99 | 30-APR-06 | 120 | 4 | 2006 | 2 | Apr | 1 | Sunday | 30 |
| 14 | 120 | 1 | 01-JAN-00 | 31-DEC-99 | 01-MAY-06 | 121 | 5 | 2006 | 2 | May | 2 | Monday | 1 |
| 15 | 121 | 1 | 01-JAN-00 | 31-DEC-99 | 02-MAY-06 | 122 | 5 | 2006 | 2 | May | 3 | Tuesday | 2 |
| 16 | 122 | 1 | 01-JAN-00 | 31-DEC-99 | 03-MAY-06 | 123 | 5 | 2006 | 2 | May | 4 | Wednesday | 3 |
| 17 | 123 | 1 | 01-JAN-00 | 31-DEC-99 | 04-MAY-06 | 124 | 5 | 2006 | 2 | May | 5 | Thursday | 4 |
| 18 | 124 | 1 | 01-JAN-00 | 31-DEC-99 | 05-MAY-06 | 125 | 5 | 2006 | 2 | May | 6 | Friday | 5 |
| 19 | 125 | 1 | 01-JAN-00 | 31-DEC-99 | 06-MAY-06 | 126 | 5 | 2006 | 2 | May | 7 | Saturday | 6 |
| 20 | 126 | 1 | 01-JAN-00 | 31-DEC-99 | 07-MAY-06 | 127 | 5 | 2006 | 2 | May | 1 | Sunday | 7 |
| 21 | 127 | 1 | 01-JAN-00 | 31-DEC-99 | 08-MAY-06 | 128 | 5 | 2006 | 2 | May | 2 | Monday | 8 |
| 22 | 128 | 1 | 01-JAN-00 | 31-DEC-99 | 09-MAY-06 | 129 | 5 | 2006 | 2 | May | 3 | Tuesday | 9 |
| 23 | 129 | 1 | 01-JAN-00 | 31-DEC-99 | 10-MAY-06 | 130 | 5 | 2006 | 2 | May | 4 | Wednesday | 10 |
| 24 | 130 | 1 | 01-JAN-00 | 31-DEC-99 | 11-MAY-06 | 131 | 5 | 2006 | 2 | May | 5 | Thursday | 11 |
| 25 | 131 | 1 | 01-JAN-00 | 31-DEC-99 | 12-MAY-06 | 132 | 5 | 2006 | 2 | May | 6 | Friday | 12 |
| 26 | 132 | 1 | 01-JAN-00 | 31-DEC-99 | 13-MAY-06 | 133 | 5 | 2006 | 2 | May | 7 | Saturday | 13 |
| 27 | 133 | 1 | 01-JAN-00 | 31-DEC-99 | 14-MAY-06 | 134 | 5 | 2006 | 2 | May | 1 | Sunday | 14 |
| 28 | 134 | 1 | 01-JAN-00 | 31-DEC-99 | 15-MAY-06 | 135 | 5 | 2006 | 2 | May | 2 | Monday | 15 |
| 29 | 135 | 1 | 01-JAN-00 | 31-DEC-99 | 16-MAY-06 | 136 | 5 | 2006 | 2 | May | 3 | Tuesday | 16 |
| 30 | 136 | 1 | 01-JAN-00 | 31-DEC-99 | 17-MAY-06 | 137 | 5 | 2006 | 2 | May | 4 | Wednesday | 17 |
| 31 | 137 | 1 | 01-JAN-00 | 31-DEC-99 | 18-MAY-06 | 138 | 5 | 2006 | 2 | May | 5 | Thursday | 18 |
| 32 | 138 | 1 | 01-JAN-00 | 31-DEC-99 | 19-MAY-06 | 139 | 5 | 2006 | 2 | May | 6 | Friday | 19 |
| 33 | 139 | 1 | 01-JAN-00 | 31-DEC-99 | 20-MAY-06 | 140 | 5 | 2006 | 2 | May | 7 | Saturday | 20 |
| 34 | 140 | 1 | 01-JAN-00 | 31-DEC-99 | 21-MAY-06 | 141 | 5 | 2006 | 2 | May | 1 | Sunday | 21 |
| 35 | 141 | 1 | 01-JAN-00 | 31-DEC-99 | 22-MAY-06 | 142 | 5 | 2006 | 2 | May | 2 | Monday | 22 |
| 36 | 142 | 1 | 01-JAN-00 | 31-DEC-99 | 23-MAY-06 | 143 | 5 | 2006 | 2 | May | 3 | Tuesday | 23 |
| 37 | 143 | 1 | 01-JAN-00 | 31-DEC-99 | 24-MAY-06 | 144 | 5 | 2006 | 2 | May | 4 | Wednesday | 24 |
| 38 | 144 | 1 | 01-JAN-00 | 31-DEC-99 | 25-MAY-06 | 145 | 5 | 2006 | 2 | May | 5 | Thursday | 25 |
| 39 | 145 | 1 | 01-JAN-00 | 31-DEC-99 | 26-MAY-06 | 146 | 5 | 2006 | 2 | May | 6 | Friday | 26 |
| 40 | 146 | 1 | 01-JAN-00 | 31-DEC-99 | 27-MAY-06 | 147 | 5 | 2006 | 2 | May | 7 | Saturday | 27 |

## Exercise 4 – Embellishing the Date Dimension with Holiday information

I got a new dataset with holiday dates and had to add that to the date table. I used a Microsoft excel input transformation as it was an excel file and not a csv. This added the data to the new fields I added based on the date so that it would update to include the holidays if the date had one. I then updated the database table with it.

Holiday Information Included


**Execution Results**

Logging | Execution History | Step Metrics | Performance Graph | Metrics | Preview data

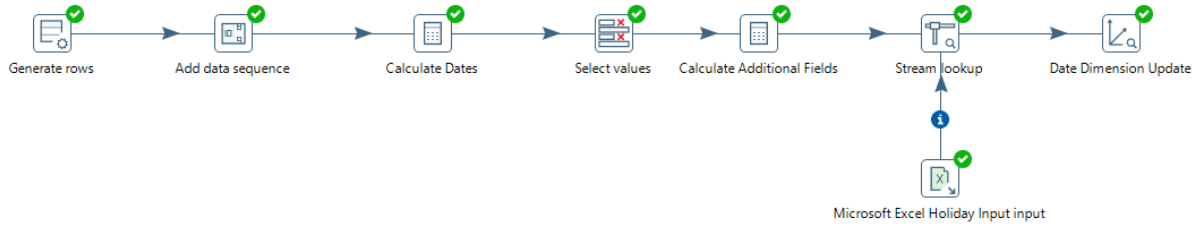
| # | Stepname | Copynr | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Generate rows | 0 | 0 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 1,100,000 | - |
| 2 | Add data sequence | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 220,000 | - |
| 3 | Calculate Dates | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 110,000 | - |
| 4 | Select values | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 84,615 | - |
| 5 | Calculate Additional Fields | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 30,556 | - |
| 6 | Date Dimension Update | 0 | 1100 | 1100 | 1100 | 1100 | 0 | 0 | 0 | Finished | 25.9s | 42 | - |

| | DATE_DIM_ID | VERSION | DATE_FROM | DATE_TO | SALES_DATE | SALES_DAY_OF_YEAR | SALES_MONTH | SALES_YEAR | SALES_QUARTER | SALES_MONTH_NAME | Sales Day of Week | Sales Day of Week Name | Sales Day of the Month |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 107 | 1 | 01-JAN-00 | 31-DEC-99 | 18-APR-06 | 108 | 4 | 2006 | 2 | Apr | 3 | Tuesday | 18 |
| 2 | 108 | 1 | 01-JAN-00 | 31-DEC-99 | 19-APR-06 | 109 | 4 | 2006 | 2 | Apr | 4 | Wednesday | 19 |
| 3 | 109 | 1 | 01-JAN-00 | 31-DEC-99 | 20-APR-06 | 110 | 4 | 2006 | 2 | Apr | 5 | Thursday | 20 |
| 4 | 110 | 1 | 01-JAN-00 | 31-DEC-99 | 21-APR-06 | 111 | 4 | 2006 | 2 | Apr | 6 | Friday | 21 |
| 5 | 111 | 1 | 01-JAN-00 | 31-DEC-99 | 22-APR-06 | 112 | 4 | 2006 | 2 | Apr | 7 | Saturday | 22 |
| 6 | 112 | 1 | 01-JAN-00 | 31-DEC-99 | 23-APR-06 | 113 | 4 | 2006 | 2 | Apr | 1 | Sunday | 23 |
| 7 | 113 | 1 | 01-JAN-00 | 31-DEC-99 | 24-APR-06 | 114 | 4 | 2006 | 2 | Apr | 2 | Monday | 24 |
| 8 | 114 | 1 | 01-JAN-00 | 31-DEC-99 | 25-APR-06 | 115 | 4 | 2006 | 2 | Apr | 3 | Tuesday | 25 |
| 9 | 115 | 1 | 01-JAN-00 | 31-DEC-99 | 26-APR-06 | 116 | 4 | 2006 | 2 | Apr | 4 | Wednesday | 26 |
| 10 | 116 | 1 | 01-JAN-00 | 31-DEC-99 | 27-APR-06 | 117 | 4 | 2006 | 2 | Apr | 5 | Thursday | 27 |
| 11 | 117 | 1 | 01-JAN-00 | 31-DEC-99 | 28-APR-06 | 118 | 4 | 2006 | 2 | Apr | 6 | Friday | 28 |
| 12 | 118 | 1 | 01-JAN-00 | 31-DEC-99 | 29-APR-06 | 119 | 4 | 2006 | 2 | Apr | 7 | Saturday | 29 |
| 13 | 119 | 1 | 01-JAN-00 | 31-DEC-99 | 30-APR-06 | 120 | 4 | 2006 | 2 | Apr | 1 | Sunday | 30 |
| 14 | 120 | 1 | 01-JAN-00 | 31-DEC-99 | 01-MAY-06 | 121 | 5 | 2006 | 2 | May | 2 | Monday | 1 |
| 15 | 121 | 1 | 01-JAN-00 | 31-DEC-99 | 02-MAY-06 | 122 | 5 | 2006 | 2 | May | 3 | Tuesday | 2 |
| 16 | 122 | 1 | 01-JAN-00 | 31-DEC-99 | 03-MAY-06 | 123 | 5 | 2006 | 2 | May | 4 | Wednesday | 3 |
| 17 | 123 | 1 | 01-JAN-00 | 31-DEC-99 | 04-MAY-06 | 124 | 5 | 2006 | 2 | May | 5 | Thursday | 4 |
| 18 | 124 | 1 | 01-JAN-00 | 31-DEC-99 | 05-MAY-06 | 125 | 5 | 2006 | 2 | May | 6 | Friday | 5 |
| 19 | 125 | 1 | 01-JAN-00 | 31-DEC-99 | 06-MAY-06 | 126 | 5 | 2006 | 2 | May | 7 | Saturday | 6 |
| 20 | 126 | 1 | 01-JAN-00 | 31-DEC-99 | 07-MAY-06 | 127 | 5 | 2006 | 2 | May | 1 | Sunday | 7 |
| 21 | 127 | 1 | 01-JAN-00 | 31-DEC-99 | 08-MAY-06 | 128 | 5 | 2006 | 2 | May | 2 | Monday | 8 |
| 22 | 128 | 1 | 01-JAN-00 | 31-DEC-99 | 09-MAY-06 | 129 | 5 | 2006 | 2 | May | 3 | Tuesday | 9 |
| 23 | 129 | 1 | 01-JAN-00 | 31-DEC-99 | 10-MAY-06 | 130 | 5 | 2006 | 2 | May | 4 | Wednesday | 10 |
| 24 | 130 | 1 | 01-JAN-00 | 31-DEC-99 | 11-MAY-06 | 131 | 5 | 2006 | 2 | May | 5 | Thursday | 11 |
| 25 | 131 | 1 | 01-JAN-00 | 31-DEC-99 | 12-MAY-06 | 132 | 5 | 2006 | 2 | May | 6 | Friday | 12 |
| 26 | 132 | 1 | 01-JAN-00 | 31-DEC-99 | 13-MAY-06 | 133 | 5 | 2006 | 2 | May | 7 | Saturday | 13 |
| 27 | 133 | 1 | 01-JAN-00 | 31-DEC-99 | 14-MAY-06 | 134 | 5 | 2006 | 2 | May | 1 | Sunday | 14 |
| 28 | 134 | 1 | 01-JAN-00 | 31-DEC-99 | 15-MAY-06 | 135 | 5 | 2006 | 2 | May | 2 | Monday | 15 |
| 29 | 135 | 1 | 01-JAN-00 | 31-DEC-99 | 16-MAY-06 | 136 | 5 | 2006 | 2 | May | 3 | Tuesday | 16 |
| 30 | 136 | 1 | 01-JAN-00 | 31-DEC-99 | 17-MAY-06 | 137 | 5 | 2006 | 2 | May | 4 | Wednesday | 17 |
| 31 | 137 | 1 | 01-JAN-00 | 31-DEC-99 | 18-MAY-06 | 138 | 5 | 2006 | 2 | May | 5 | Thursday | 18 |
| 32 | 138 | 1 | 01-JAN-00 | 31-DEC-99 | 19-MAY-06 | 139 | 5 | 2006 | 2 | May | 6 | Friday | 19 |
| 33 | 139 | 1 | 01-JAN-00 | 31-DEC-99 | 20-MAY-06 | 140 | 5 | 2006 | 2 | May | 7 | Saturday | 20 |
| 34 | 140 | 1 | 01-JAN-00 | 31-DEC-99 | 21-MAY-06 | 141 | 5 | 2006 | 2 | May | 1 | Sunday | 21 |
| 35 | 141 | 1 | 01-JAN-00 | 31-DEC-99 | 22-MAY-06 | 142 | 5 | 2006 | 2 | May | 2 | Monday | 22 |
| 36 | 142 | 1 | 01-JAN-00 | 31-DEC-99 | 23-MAY-06 | 143 | 5 | 2006 | 2 | May | 3 | Tuesday | 23 |
| 37 | 143 | 1 | 01-JAN-00 | 31-DEC-99 | 24-MAY-06 | 144 | 5 | 2006 | 2 | May | 4 | Wednesday | 24 |
| 38 | 144 | 1 | 01-JAN-00 | 31-DEC-99 | 25-MAY-06 | 145 | 5 | 2006 | 2 | May | 5 | Thursday | 25 |
| 39 | 145 | 1 | 01-JAN-00 | 31-DEC-99 | 26-MAY-06 | 146 | 5 | 2006 | 2 | May | 6 | Friday | 26 |
| 40 | 146 | 1 | 01-JAN-00 | 31-DEC-99 | 27-MAY-06 | 147 | 5 | 2006 | 2 | May | 7 | Saturday | 27 |

## Developing the Dimensional Lookup transformations for loading Fact Tables

I had to import the orders data into the database so I made that using a csv output. Then I started to work on the fact table and had to add a dimensional lookup for each dimensional table I had and then I also added a some more calculations that include the dollars sold and the amount sold from the orders table. After that I finally made a table output which made the fact table and used all of the keys from the previously mentioned dimensional lookups. I then updated the database with everything.

Orders Data and Fact Table Creation




**Execution Results**

Logging | Execution History | Step Metrics | Performance Graph | Metrics | Preview data

| # | Stepname | Copynr | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Generate rows | 0 | 0 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.0s | 1,100,000 | - |
| 2 | Add data sequence | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.1s | 8,730 | - |
| 3 | Calculate Dates | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.4s | 2,607 | - |
| 4 | Select values | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.4s | 2,582 | - |
| 5 | Microsoft Excel Holiday Input input | 0 | 0 | 33 | 33 | 0 | 0 | 0 | 0 | Finished | 0.4s | 78 | - |
| 6 | Calculate Additional Fields | 0 | 1100 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.4s | 2,511 | - |
| 7 | Stream lookup | 0 | 1133 | 1100 | 0 | 0 | 0 | 0 | 0 | Finished | 0.6s | 1,953 | - |
| 8 | Date Dimension Update | 0 | 1100 | 1100 | 1100 | 1100 | 0 | 0 | 0 | Finished | 26.6s | 41 | - |

| | DATE_DIM_ID | VERSION | DATE_FROM | DATE_TO | SALES_DATE | SALES_DAY_OF_YEAR | SALES_MONTH | SALES_YEAR | SALES_QUARTER | SA... | Sal... | Sales Day of Week Name | Sales Day of the Month | IS_A_HOLIDAY | HOLIDAY_DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 103 | 1 | 01-JAN-00 | 31-DEC-99 | 14-APR-06 | 104 | 4 | 2006 | 2 | Apr | 6 | Friday | 14 | 1 | Good Friday |
| 2 | 104 | 1 | 01-JAN-00 | 31-DEC-99 | 15-APR-06 | 105 | 4 | 2006 | 2 | Apr | 7 | Saturday | 15 | 0 | (null) |
| 3 | 105 | 1 | 01-JAN-00 | 31-DEC-99 | 16-APR-06 | 106 | 4 | 2006 | 2 | Apr | 1 | Sunday | 16 | 0 | (null) |
| 4 | 106 | 1 | 01-JAN-00 | 31-DEC-99 | 17-APR-06 | 107 | 4 | 2006 | 2 | Apr | 2 | Monday | 17 | 0 | (null) |
| 5 | 107 | 1 | 01-JAN-00 | 31-DEC-99 | 18-APR-06 | 108 | 4 | 2006 | 2 | Apr | 3 | Tuesday | 18 | 0 | (null) |
| 6 | 108 | 1 | 01-JAN-00 | 31-DEC-99 | 19-APR-06 | 109 | 4 | 2006 | 2 | Apr | 4 | Wednesday | 19 | 0 | (null) |
| 7 | 109 | 1 | 01-JAN-00 | 31-DEC-99 | 20-APR-06 | 110 | 4 | 2006 | 2 | Apr | 5 | Thursday | 20 | 0 | (null) |
| 8 | 110 | 1 | 01-JAN-00 | 31-DEC-99 | 21-APR-06 | 111 | 4 | 2006 | 2 | Apr | 6 | Friday | 21 | 0 | (null) |
| 9 | 111 | 1 | 01-JAN-00 | 31-DEC-99 | 22-APR-06 | 112 | 4 | 2006 | 2 | Apr | 7 | Saturday | 22 | 0 | (null) |
| 10 | 112 | 1 | 01-JAN-00 | 31-DEC-99 | 23-APR-06 | 113 | 4 | 2006 | 2 | Apr | 1 | Sunday | 23 | 0 | (null) |
| 11 | 113 | 1 | 01-JAN-00 | 31-DEC-99 | 24-APR-06 | 114 | 4 | 2006 | 2 | Apr | 2 | Monday | 24 | 0 | (null) |
| 12 | 114 | 1 | 01-JAN-00 | 31-DEC-99 | 25-APR-06 | 115 | 4 | 2006 | 2 | Apr | 3 | Tuesday | 25 | 0 | (null) |
| 13 | 115 | 1 | 01-JAN-00 | 31-DEC-99 | 26-APR-06 | 116 | 4 | 2006 | 2 | Apr | 4 | Wednesday | 26 | 0 | (null) |
| 14 | 116 | 1 | 01-JAN-00 | 31-DEC-99 | 27-APR-06 | 117 | 4 | 2006 | 2 | Apr | 5 | Thursday | 27 | 0 | (null) |
| 15 | 117 | 1 | 01-JAN-00 | 31-DEC-99 | 28-APR-06 | 118 | 4 | 2006 | 2 | Apr | 6 | Friday | 28 | 0 | (null) |
| 16 | 118 | 1 | 01-JAN-00 | 31-DEC-99 | 29-APR-06 | 119 | 4 | 2006 | 2 | Apr | 7 | Saturday | 29 | 0 | (null) |
| 17 | 119 | 1 | 01-JAN-00 | 31-DEC-99 | 30-APR-06 | 120 | 4 | 2006 | 2 | Apr | 1 | Sunday | 30 | 0 | (null) |
| 18 | 120 | 1 | 01-JAN-00 | 31-DEC-99 | 01-MAY-06 | 121 | 5 | 2006 | 2 | May | 2 | Monday | 1 | 0 | (null) |
| 19 | 121 | 1 | 01-JAN-00 | 31-DEC-99 | 02-MAY-06 | 122 | 5 | 2006 | 2 | May | 3 | Tuesday | 2 | 0 | (null) |
| 20 | 122 | 1 | 01-JAN-00 | 31-DEC-99 | 03-MAY-06 | 123 | 5 | 2006 | 2 | May | 4 | Wednesday | 3 | 0 | (null) |
| 21 | 123 | 1 | 01-JAN-00 | 31-DEC-99 | 04-MAY-06 | 124 | 5 | 2006 | 2 | May | 5 | Thursday | 4 | 0 | (null) |
| 22 | 124 | 1 | 01-JAN-00 | 31-DEC-99 | 05-MAY-06 | 125 | 5 | 2006 | 2 | May | 6 | Friday | 5 | 0 | (null) |
| 23 | 125 | 1 | 01-JAN-00 | 31-DEC-99 | 06-MAY-06 | 126 | 5 | 2006 | 2 | May | 7 | Saturday | 6 | 0 | (null) |
| 24 | 126 | 1 | 01-JAN-00 | 31-DEC-99 | 07-MAY-06 | 127 | 5 | 2006 | 2 | May | 1 | Sunday | 7 | 0 | (null) |
| 25 | 127 | 1 | 01-JAN-00 | 31-DEC-99 | 08-MAY-06 | 128 | 5 | 2006 | 2 | May | 2 | Monday | 8 | 0 | (null) |
| 26 | 128 | 1 | 01-JAN-00 | 31-DEC-99 | 09-MAY-06 | 129 | 5 | 2006 | 2 | May | 3 | Tuesday | 9 | 0 | (null) |
| 27 | 129 | 1 | 01-JAN-00 | 31-DEC-99 | 10-MAY-06 | 130 | 5 | 2006 | 2 | May | 4 | Wednesday | 10 | 0 | (null) |
| 28 | 130 | 1 | 01-JAN-00 | 31-DEC-99 | 11-MAY-06 | 131 | 5 | 2006 | 2 | May | 5 | Thursday | 11 | 0 | (null) |
| 29 | 131 | 1 | 01-JAN-00 | 31-DEC-99 | 12-MAY-06 | 132 | 5 | 2006 | 2 | May | 6 | Friday | 12 | 0 | (null) |
| 30 | 132 | 1 | 01-JAN-00 | 31-DEC-99 | 13-MAY-06 | 133 | 5 | 2006 | 2 | May | 7 | Saturday | 13 | 0 | (null) |
| 31 | 133 | 1 | 01-JAN-00 | 31-DEC-99 | 14-MAY-06 | 134 | 5 | 2006 | 2 | May | 1 | Sunday | 14 | 0 | (null) |
| 32 | 134 | 1 | 01-JAN-00 | 31-DEC-99 | 15-MAY-06 | 135 | 5 | 2006 | 2 | May | 2 | Monday | 15 | 0 | (null) |
| 33 | 135 | 1 | 01-JAN-00 | 31-DEC-99 | 16-MAY-06 | 136 | 5 | 2006 | 2 | May | 3 | Tuesday | 16 | 0 | (null) |
| 34 | 136 | 1 | 01-JAN-00 | 31-DEC-99 | 17-MAY-06 | 137 | 5 | 2006 | 2 | May | 4 | Wednesday | 17 | 0 | (null) |
| 35 | 137 | 1 | 01-JAN-00 | 31-DEC-99 | 18-MAY-06 | 138 | 5 | 2006 | 2 | May | 5 | Thursday | 18 | 0 | (null) |
| 36 | 138 | 1 | 01-JAN-00 | 31-DEC-99 | 19-MAY-06 | 139 | 5 | 2006 | 2 | May | 6 | Friday | 19 | 0 | (null) |
| 37 | 139 | 1 | 01-JAN-00 | 31-DEC-99 | 20-MAY-06 | 140 | 5 | 2006 | 2 | May | 7 | Saturday | 20 | 0 | (null) |
| 38 | 140 | 1 | 01-JAN-00 | 31-DEC-99 | 21-MAY-06 | 141 | 5 | 2006 | 2 | May | 1 | Sunday | 21 | 0 | (null) |
| 39 | 141 | 1 | 01-JAN-00 | 31-DEC-99 | 22-MAY-06 | 142 | 5 | 2006 | 2 | May | 2 | Monday | 22 | 0 | (null) |
| 40 | 142 | 1 | 01-JAN-00 | 31-DEC-99 | 23-MAY-06 | 143 | 5 | 2006 | 2 | May | 3 | Tuesday | 23 | 0 | (null) |

# Exercise 5 – Importing new Sales Data

I updated the orders data with a new file that included more rows.

Updated Orders


**Execution Results**

Logging | Execution History | Step Metrics | Performance Graph | Metrics | Preview data

| # | Stepname | Copynr | Read | Written | Input | Output | Updated | Rejected | Errors | Active | Time | Speed (r/s) | input/output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Orders CSV file input | 0 | 0 | 18 | 19 | 0 | 0 | 0 | 0 | Finished | 0.0s | 9,500 | - |
| 2 | Customer Dim Lookup | 0 | 18 | 18 | 18 | 0 | 0 | 0 | 0 | Finished | 0.3s | 66 | - |
| 3 | Salesrep Dim Lookup | 0 | 18 | 18 | 18 | 0 | 0 | 0 | 0 | Finished | 0.3s | 60 | - |
| 4 | Product Dim Lookup | 0 | 18 | 18 | 18 | 0 | 0 | 0 | 0 | Finished | 0.3s | 58 | - |
| 5 | Promotion Dim Lookup | 0 | 18 | 18 | 18 | 0 | 0 | 0 | 0 | Finished | 0.3s | 54 | - |
| 6 | Date Dim Lookup | 0 | 18 | 18 | 18 | 0 | 0 | 0 | 0 | Finished | 0.3s | 52 | - |
| 7 | Sales Totals | 0 | 18 | 18 | 0 | 0 | 0 | 0 | 0 | Finished | 0.3s | 58 | - |
| 8 | Load Sales Fact table | 0 | 18 | 18 | 0 | 18 | 0 | 0 | 0 | Finished | 0.4s | 47 | - |

| | ORDER_ID | CUSTOMER_DIM_ID | SALESREP_DIM_ID | PRODUCT_DIM_ID | PROMOTION_DIM_ID | DATE_DIM_ID | DOLLARS_SOLD | AMOUNT_SOLD |
|---|---|---|---|---|---|---|---|---|
| 1 | 2354 | 161 | 9 | 250 | 0 | 925 | 848 | 53 |
| 2 | 2354 | 161 | 9 | 240 | 0 | 925 | 3713 | 47 |
| 3 | 2354 | 161 | 9 | 174 | 0 | 925 | 1927 | 47 |
| 4 | 2354 | 161 | 9 | 253 | 1 | 925 | 1008 | 48 |
| 5 | 2354 | 161 | 9 | 179 | 0 | 925 | 2928 | 61 |
| 6 | 2354 | 161 | 9 | 173 | 0 | 925 | 4162.4 | 43 |
| 7 | 2354 | 161 | 9 | 163 | 0 | 925 | 2368 | 64 |
| 8 | 2354 | 161 | 9 | 261 | 0 | 925 | 4697 | 77 |
| 9 | 2354 | 161 | 9 | 164 | 1 | 925 | 3468 | 68 |
| 10 | 2354 | 161 | 9 | 100 | 0 | 925 | 10164 | 70 |
| 11 | 2354 | 161 | 9 | 154 | 0 | 925 | 986 | 58 |
| 12 | 2354 | 161 | 9 | 162 | 0 | 925 | 1830 | 61 |
| 13 | 2354 | 161 | 9 | 105 | 0 | 925 | 8157.599999999999 | 72 |
| 14 | 2355 | 161 | 0 | 244 | 0 | 25 | 16337.2 | 188 |
| 15 | 2355 | 161 | 0 | 176 | 0 | 25 | 10545 | 185 |
| 16 | 2355 | 161 | 0 | 66 | 1 | 25 | 46226.4 | 204 |
| 17 | 2355 | 161 | 0 | 180 | 0 | 25 | 9200 | 200 |
| 18 | 2355 | 161 | 0 | 113 | 0 | 25 | 211.20000000000002 | 192 |
| 19 | 2355 | 161 | 0 | 146 | 0 | 25 | 4975 | 199 |
| 20 | 2355 | 161 | 0 | 258 | 0 | 25 | 3572 | 188 |
| 21 | 2355 | 161 | 0 | 251 | 0 | 25 | 3230 | 190 |
| 22 | 2355 | 161 | 0 | 114 | 0 | 25 | 216.70000000000002 | 197 |
| 23 | 2356 | 162 | 0 | 239 | 1 | 755 | 3168 | 44 |
| 24 | 2356 | 162 | 0 | 172 | 0 | 755 | 3920 | 40 |
| 25 | 2356 | 162 | 0 | 61 | 0 | 755 | 5049 | 34 |
| 26 | 2356 | 162 | 0 | 255 | 0 | 755 | 1210 | 55 |
| 27 | 2356 | 162 | 0 | 251 | 0 | 755 | 990 | 55 |
| 28 | 2356 | 162 | 0 | 176 | 0 | 755 | 2726 | 47 |
| 29 | 2356 | 162 | 0 | 244 | 1 | 755 | 4845 | 51 |
| 30 | 2356 | 162 | 0 | 196 | 0 | 755 | 7565.8 | 38 |
| 31 | 2357 | 165 | 12 | 16 | 0 | 7 | 8987 | 38 |
| 32 | 2357 | 165 | 12 | 180 | 1 | 7 | 1968 | 41 |
| 33 | 2357 | 165 | 12 | 187 | 0 | 7 | 462 | 140 |
| 34 | 2357 | 165 | 12 | 39 | 1 | 7 | 10782.2 | 29 |
| 35 | 2357 | 165 | 12 | 204 | 0 | 7 | 2400 | 32 |
| 36 | 2357 | 165 | 12 | 71 | 0 | 7 | 12012 | 26 |
| 37 | 2357 | 165 | 12 | 74 | 0 | 7 | 20506.2 | 26 |
| 38 | 2357 | 165 | 12 | 209 | 0 | 7 | 2755 | 29 |
| 39 | 2358 | 162 | 9 | 271 | 2 | 737 | 715 | 13 |
| 40 | 2358 | 162 | 9 | 8 | 0 | 737 | 3801.6000000000004 | 12 |

## SQL Developer View and Tableau

I had to make a view combining all of the fact and dimension tables. I used the USING clause on the JOIN function in order to get rid of all of the duplicate keys. I then realized that it also duplicated the VERSION, FROM_DATE and FROM_TO columns which aren't needed in the database so I dropped them from each column except the date dimensional table. The code below is what was used to make the view as for getting rid of the columns it consisted of me just altering a table and dropping the three columns.

```
CREATE VIEW Tableau AS

SELECT *

FROM sales_fact

JOIN customer_dim USING (CUSTOMER_DIM_ID)

JOIN DATE_DIM USING (DATE_DIM_ID)

JOIN PRODUCT_DIM USING (PRODUCT_DIM_ID)

JOIN PROMOTION_DIM USING (PROMOTION_DIM_ID)

JOIN SALESREP_DIM USING (SALESREP_DIM_ID);
```

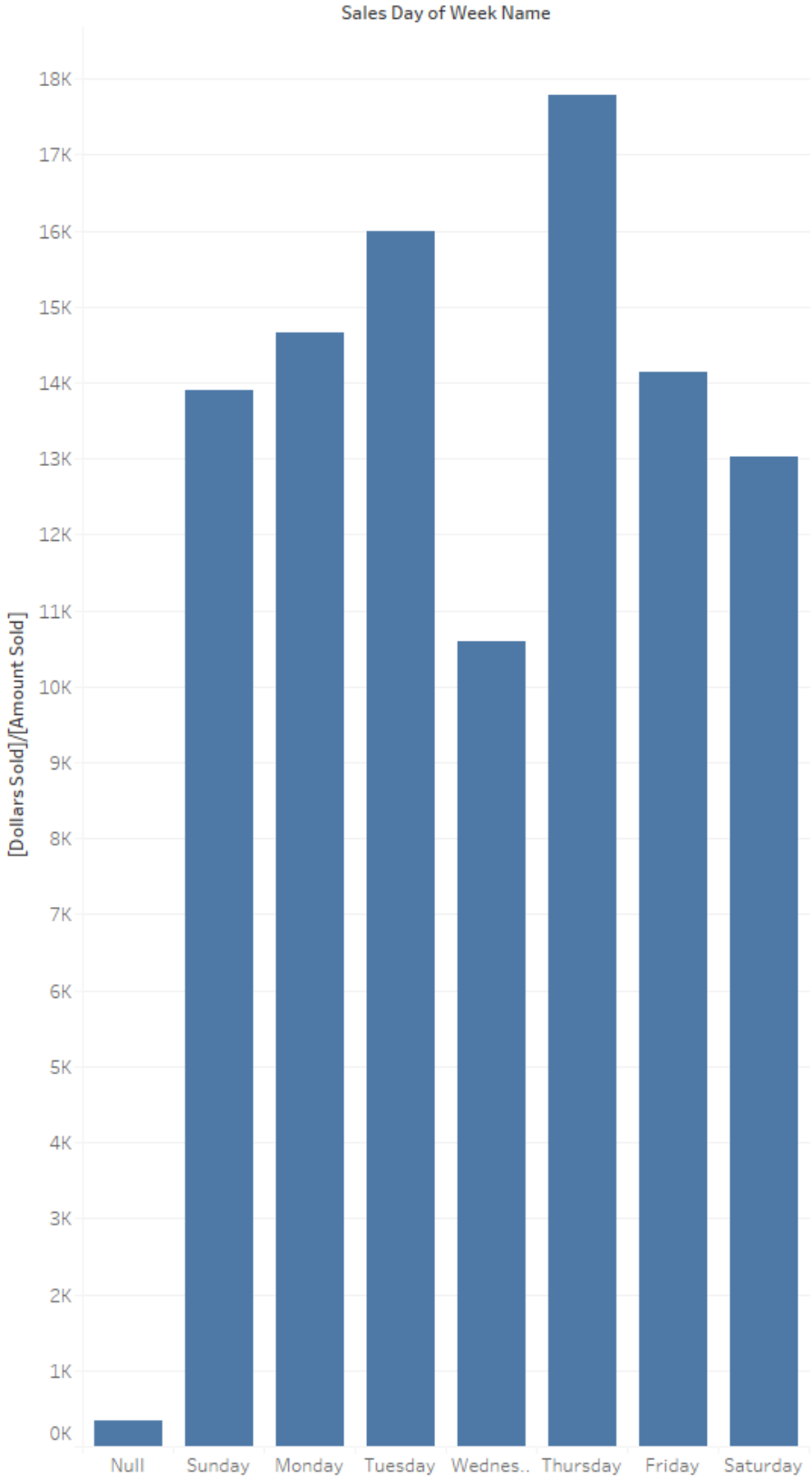
I then converted the view to a csv file and put it into Tableau to visualize the data. I made 4 graphs that show different aspects but are equally significant. I used the KPI's of: which day was the best day to have certain products available, which city we should prioritize, how we should adjust the store credit of our

customers and which employees we should prioritize when and how much we should pay them.

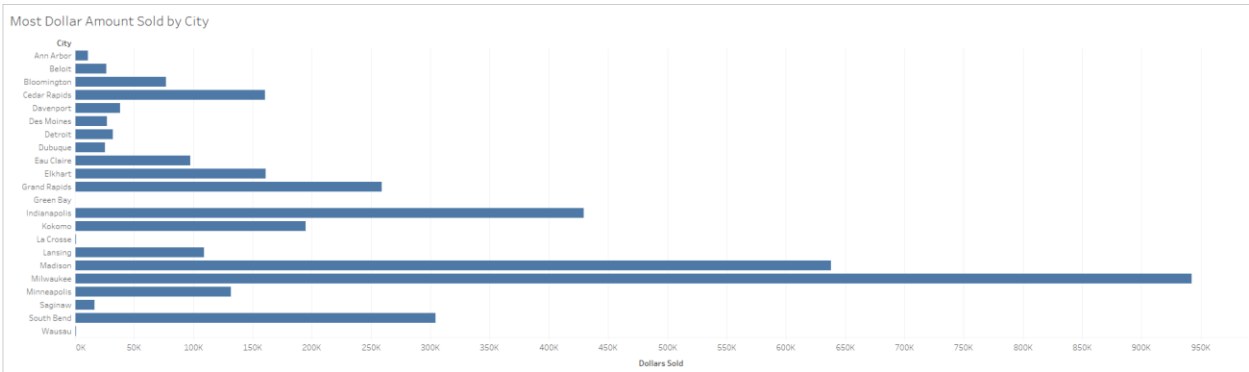

**Anything that say NULL can be ignored.**

So, for the top left graph I divided the total dollars sold by the total amount sold in order to get the day the most expensive objects were sold on overage. Turns out to be Thursday's.

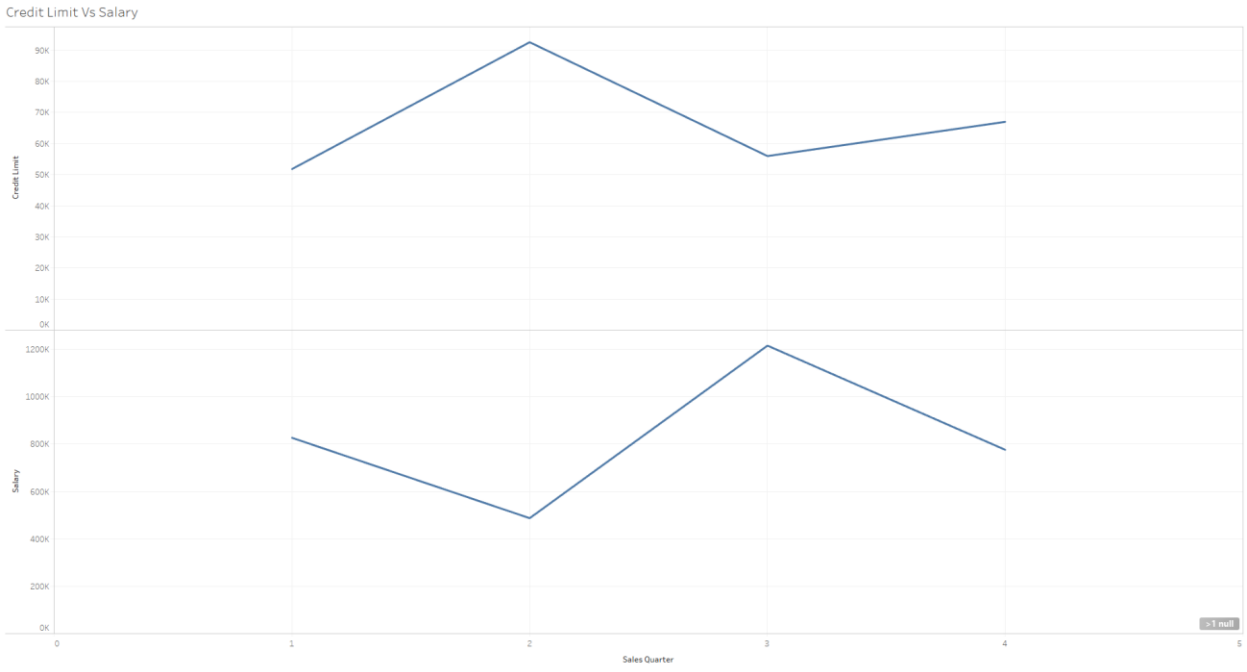
## Most Expensive Objects Sold by Day of the Week



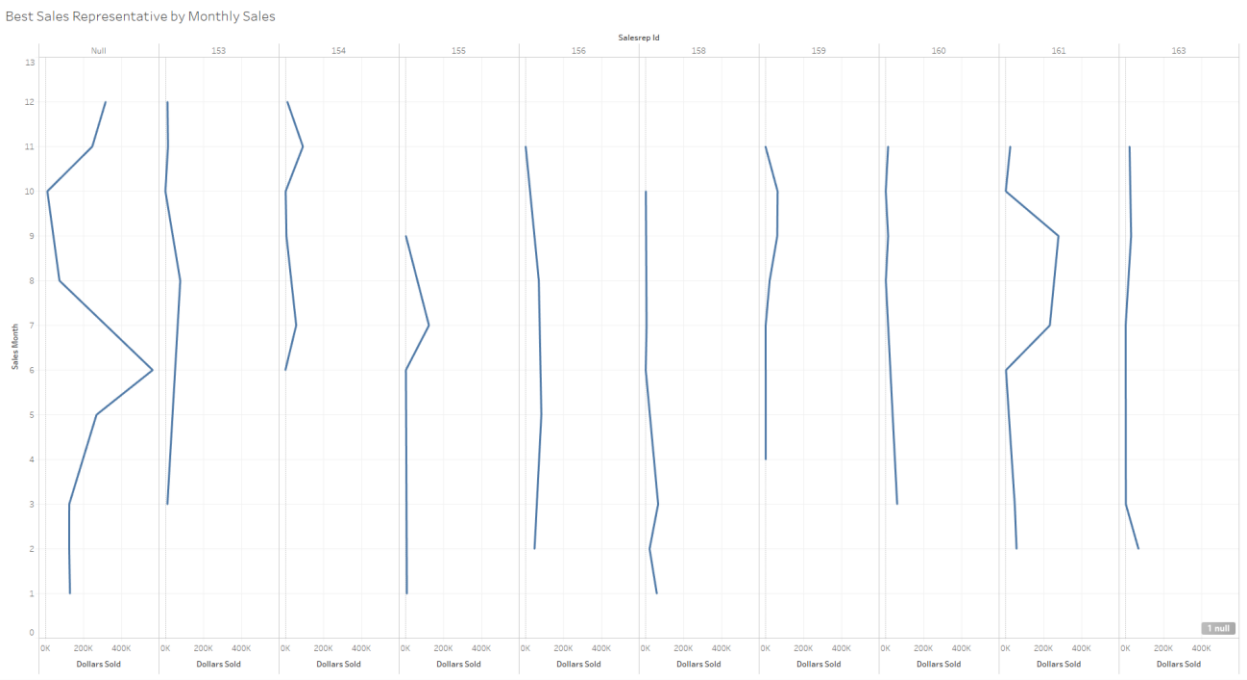
The top right graph shows the city that spends the most dollar amount, which ends up being Milwaukee with La Crosse being the least.




The bottom left is the most interesting to me as it shows that the average credit limit of customers against the average salary of employees by quarter and they seem to be inversely related.




The bottom right shows which employee sells the most products by month.




I probably spent close to 36 hours in total working on this as it took me about 6 hours to do the assignment once I got pass a problem I could not fix for a while. Pentaho would not test the oracle server whenever I tried to connect the database. I still do not know exactly what fixed it but once I deleted the BI Server files from Pentaho, I was able to connect to Oracle. I was stuck on that problem for awhile and kept trying all sorts of ways to get around it that would not work. Aside from that the biggest problem I had was creating the view as it had duplicated of columns that did not matter and that I couldn't think of a way to get rid of duplicates without using Natural Join. So, I just dropped the columns since they weren't any keys and didn't have any significance from all but one table and I was able to create the view afterwards and move on.