



Creative Uses *for* **XMIM**

This practical guide offers useful examples for demonstrating how XMIM, LIM's patented near-English query tool, can help you in modeling and evaluating trading opportunities. The detailed studies within are designed to acquaint you with the software's capabilities and to highlight interesting and useful functionality. Each one demonstrates a problem, illustrates the query language and displays the results as would appear in the application.

Financial Applications

Volume 3: Queries and Results



LOGICAL INFORMATION MACHINES

Chicago: +1 (312) 456-3000

Houston: +1 (713) 652-4066

New York: +1 (212) 292-4282

Austin: +1 (512) 697-3000

London: +44 20 7190 2945

Singapore: +(65) 6322 4122

www.lim.com

www.markethistory.com

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Logical Information Machines, Inc.
120 North LaSalle Street, Suite 2150
Chicago, IL 60602
+1 (312) 456-3000 (Direct)
+1 (312) 456-3475 (Fax)

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Introduction

Logical Information Machines (LIM) provides occasional examples of the rich and varied analysis that customers can perform using our patented near-English query tool “XMIM”. The examples included here come from the financial markets in the United States and represent real market opportunities that traders can take advantage of.

As you will see, the queries are fairly sophisticated and based on a strong knowledge of the fundamental drivers in the financial markets. We hope that existing LIM users will see value in these queries and that those readers new to LIM will recognize the very high value that our tools add to market data.

We hope that you find the examples illuminating and that if you have questions or suggestions about the analysis, you let us know what you think. For more information about XMIM, please contact a LIM sales representative at one of the following offices, or visit our website at www.lim.com. **LIM**

Chicago: +1 (312) 456-3000

Houston: +1 (713) 652-4066

New York: +1 (212) 292-4282

Austin: +1 (512) 697-3000

London: +44 20 7190 2945

Singapore: +(65) 6322 4122

Chevron and the Producer Price Index

This query shows a link between movements of Chevron and the Producer Price Index. Sometimes the PPI report not only comes out lower than expected, but the inflation figure actually decreases. The results show a strong tendency for this energy stock to rise when this happens. In 10 previous occurrences dating back to 1986, the price of CHV has gone up over the next 20 trading days in 90% of the cases by an average of 4.3%, compared to only one case in which the decline was -0.4%. **LIM**

Query Language

```
SHOW
1:percent_move from today to 20 values later of CVX

WHEN
Date is in "ppi.rpt"

AND
PPI_ACT is less than PPI_EST
AND
PPI_ACT is less than 0
AND
1 day move of CVX is more than 0

AND
1 value ago { 1 value percent_move of CVX is less than
(30 day average of 1 value percent_move of CVX -
(1 * 30 day std_dev of 1 value percent_move of CVX ) ) }
```

This time frame was chosen after scanning every single value from 1 to 60 days later as having the highest risk/reward ratio.

The custom date files in XMIM allow the user to easily focus the query on report dates.

The PPI is both lower than expected and actually declines.

Here the 1-day move is compared to the average move over the past 30 days along with different magnitudes of standard deviations from average.

In this case, one standard deviation more than average was reached. This technique generalizes significant moves.

Query Results

Date	Day	t+20
03/14/1986	Fri	5.7432
05/16/1986	Fri	0.6289
09/15/1989	Fri	3.4557
02/15/1991	Fri	4.1379
03/05/1991	Fri	2.7778
02/14/1992	Fri	-0.3922
09/10/1993	Fri	6.5731
04/09/1998	Thu	5.6809
04/12/2001	Thu	2.4183
12/20/2005	Tue	7.4732
Avg		3.8497
AvgPos		4.3210
AvgNeg		-0.3922
PctPos		90.0000
PctNeg		10.0000
Maximum		7.4732
Minimum		-0.3922
StdDev		2.5667
ZStat		1.4999
Variance		6.5878

10 Occurrences

Intraday Currency Analysis

XMIM can easily adapt to do intraday studies. Here, we analyze the EURUSD's reaction to intraday price spikes. After setting the MIM server to analyze 5-minute bars, we see a tendency for the currency to pull back over the next 64 minutes after an upward spike. **LIM**

Query Language

```
%exec.units: 5 minute
%exec.skip: FIRST 3 hour

SHOW
16:move from today to 16 value
later of EURUSD

WHEN
  EURUSD crosses above 10 value average of EURUSD
  AND
  EURUSD is at least 10 value average of EURUSD + 0.0005
  AND
  Date is within 1 month
  AND
  Time is after 10:00am
```

This statement adjusts the XMIM execution parameters to study the equivalent of 5-minute bars.

This statement eliminates double-counting within the same swing.

Notice it is vital throughout the query to use the word "value," which allows XMIM to analyze data according to the execution units set above. In this case, we are looking at 16 5-minute bars, or 64 minutes after the event.

Normally the SHOW statement above, "move from today to..." would start calculating values from 12:00 a.m. Inserting this time condition helps focus the query on the desired time frames.

Query Results

Date	Time	Day	1
07/05/2006	01:35pm	Wed	-0.0007
07/06/2006	08:20pm	Thu	-0.0002
07/10/2006	10:55am	Mon	-0.0010
07/12/2006	01:00pm	Wed	0.0002
07/14/2006	12:10pm	Fri	-0.0006
07/17/2006	04:05pm	Mon	-0.0010
07/18/2006	11:05am	Tue	-0.0002
07/19/2006	12:45pm	Wed	0.0002
07/20/2006	11:00am	Thu	-0.0011
07/24/2006	08:05pm	Mon	-0.0001
07/24/2006	11:10pm	Mon	0.0022
07/26/2006	10:10am	Wed	0.0024
07/27/2006	10:35am	Thu	-0.0015
	Avg		-0.0001
	AvgPos		0.0012
	AvgNeg		-0.0007
	PctPos		30.7692
	PctNeg		69.2308
	Maximum		0.0024
	Minimum		-0.0015
	StdDev		0.0012
	ZStat		-0.0907
	Variance		0.0000

13 Occurrences

Cross-Market Analysis

XMIM is easily able to do a broad amount of cross-market analysis as well as heavy technical analysis. This query shows us that the various elements of the markets—internal bullish signals from the stock, combined with a bullish movement of the DJIA and crude oil—lead to an upmove in the price of World Fuel Services, Inc. In the 13 previous occurrences of this event, the stock has gained 12 out of 13 times by an average of 9% over the next 17 trading days. One occurrence from 11/16/1993 broke even during this period. **LIM**

Query Language

```
SHOW
1:percent_move from today to 17 values later of INT

WHEN
  volume of INT is more than exponential_average
  ( exponential_average ( volume of INT 1 value ago, 0.33333 ),
  0.064516129 ) + ( 2 * 30 day std_dev of exponential_average
  ( volume of INT 1 value ago, 0.33333 ) )

  AND {
    (High of INT - INT) is less than (0.2 * (High
    of INT - Low of INT))
    AND
    (Open of INT - Low of INT) is less than (0.2 * (High
    of INT - Low of INT)) }

  AND
  KStochastic ( INT, 52 weeks ) is more than 66.6

  AND
  1 value percent_move of DJIA is more than 0
  AND
  1 value percent_move of CL is more than 0
```

This expression uses a double-smoothing approach, using a 15.5 day exponential average to smooth out 3-day average values of volume history.

To detect significant movement, standard deviations of 3-day exponential averages of the recent volume history are calculated and matched against actual data. In this case, a move of 2 standard deviations more than normal was detected.

This constitutes what we call a “trend day up”, where the open is within the lower 20% of the day’s range, and the close is within the upper 20%. These usually accompany strong rallies.

Here we use our built-in, fully customizable slow stochastic oscillator and set it to 52 weeks. Having the value in the upper third of this range is another key bull property.

Dow movement is included to compare this stock with overall market movement. Crude oil futures are added since the company deals with fuel products.

Query Results

Date	Day	1
11/16/1993	Tue	0.0000
12/03/1993	Fri	5.7851
05/10/1996	Fri	2.6667
05/24/1996	Fri	2.6490
08/04/1997	Mon	1.3587
05/01/2001	Tue	26.5957
08/28/2003	Thu	2.5802
12/18/2003	Thu	8.8896
04/02/2004	Fri	12.8026
02/11/2005	Fri	0.5096
08/11/2005	Thu	23.5009
03/24/2006	Fri	2.9175
04/28/2006	Fri	18.8062

13 Occurrences

Avg	8.3894
AvgPos	9.0885
AvgNeg	NaN
PctPos	92.3077
PctNeg	0.0000
Maximum	26.5957
Minimum	0.0000
StdDev	9.1567
ZStat	0.9162
Variance	83.8451

Using the Investors Intelligence Reports

Among the myriad of data we have available is information from the Investor's Intelligence reports. After 2002, the query below shows that the S&P 500 has always been up over the next 30 trading days by an average of 4.3%—after the Investor's Intelligence report shows most newsletter writers are bullish. This shows that this contrary indicator has not worked at all since 2002. XMIM is great at debunking conventional wisdom. **LIM**

Query Language

```
%exec.skip FIRST 10 day

SHOW
t+30: percent_move from today to 30 values later of SPX

WHEN
  BullishPct of INVESTORS_INTELLIGENCE is at least 40
  AND
  BearishPct of INVESTORS_INTELLIGENCE is at least 29

AND
  Date is after 2002
```

This executing parameter is inserted to prevent duplicate results. The Investor's Intelligence number is reproduced every day though it only changes once a week.

These numbers were collected straight from Barron's. Numerical statistics such as these can be directly input into XMIM to yield interesting results.

This condition was added to limit data—which ranges from as far back as 1967 to recent history.

Query Results

Date	Day	t+30
02/07/2003	Fri	4.1360
02/21/2003	Fri	3.6172
03/07/2003	Fri	7.6150
03/21/2003	Fri	3.4223
04/04/2003	Fri	4.7699
04/18/2003	Fri	8.2164
05/02/2003	Fri	8.6724
04/08/2005	Fri	0.6841
04/18/2005	Fri	3.8008
10/14/2005	Fri	5.9744
10/28/2005	Fri	5.1752
02/24/2006	Fri	0.4707
03/10/2006	Fri	2.0701
Avg		4.3084
AvgPos		4.3084
AvgNeg		NaN
PctPos		100.0000
PctNeg		0.0000
Maximum		8.6724
Minimum		0.4707
StdDev		2.6368
ZStat		1.6339
Variance		6.9528

15 Occurrences

CPI and the Dow

In recent history, when the CPI is higher than expected, S&P futures make a positive move over the next three days. Again, this is contrary as to what one would expect. **LIM**

Query Language

```
LET
ATTR spread = CPI_ACT - CPI_EST

SHOW
Spread: spread
S&P: percent_move from today to 3 days later of SP
WHEN
Date is after 1996
AND
Date is in "cpi.rpt"
AND
spread is more than .1
```

Here the word "spread" is used to measure the deviation of the actual CPI number from the expected.

It is easy to set various values in XMIM to determine influential thresholds.

Query Results

Day	Date	Spread	S&P
05/14/1999	Fri	0.3000	0.7392
04/14/2000	Fri	0.2000	5.3236
02/21/2001	Wed	0.3000	1.3609
03/21/2001	Wed	0.2000	3.1007
10/19/2001	Fri	0.2000	1.1655
12/17/2002	Tue	0.2000	-0.5428
02/20/2004	Fri	0.2000	-0.0612
04/04/2004	Wed	0.2000	0.3541
06/15/2004	Tue	0.2000	0.0265
11/17/2004	Wed	0.2000	-0.5320
10/14/2005	Fri	0.3000	0.8824
02/22/2006	Wed	0.2000	0.1393
Avg		0.2250	0.9964
AvgPos		0.2250	1.4547
AvgNeg		NaN	-0.3787
PctPos		100.0000	75.0000
PctNeg		0.0000	25.0000
Maximum		0.3000	5.3236
Minimum		0.2000	-0.5428
StdDev		0.0452	1.6870
ZStat		4.9749	0.5906
Variance		0.0020	2.8459

12 Occurrences

OPEC Meeting Effects on Equities

Monthly OPEC meetings tend to have various effects on the major stock indices and individual energy stocks. When looking at weekly upmoves in Chevron of 2% or more the week before an OPEC meeting, it has an interesting tendency to move up—as it has done in 81.1% of the cases—while the S&P 500, the DJIA and more notably, the NASDAQ, show tendencies to move down over the next nine days. LIM

Query Language

```
SHOW
CVX: percent_move from today to 9 values later of CVX
SPX: percent_move from today to 9 values later of SPX
DJIA: percent_move from today to 9 values later of DJIA
NASD: percent_move from today to 9 values later of NASD
WHEN
  Date is in "opec_meet.date"
AND
  1 week percent_move of CVX is more than 2
AND
  Date is after 1996
```

Including all related market benchmarks in a query can give the user an idea of which area of the market to expect movement in.

Query Results

Date	Day	CVX	SPX	DJIA	NASD
03/23/1999	Tue	2.5036	4.4171	3.4688	10.3453
03/29/2000	Wed	0.2119	-0.5257	2.4355	-12.67449
11/10/2000	Fri	0.2229	-1.7724	-1.9204	-4.1111
06/05/2001	Tue	-2.0471	-5.8540	-4.7465	-10.9699
03/15/2002	Fri	0.5234	-1.6096	-1.9165	-1.2284
06/11/2003	Wed	-2.3806	-1.4065	-0.7989	-2.4550
12/04/2003	Thu	5.3079	0.6319	2.1593	-2.4111
03/31/2004	Wed	3.6683	0.1740	0.1954	1.5359
09/15/2004	Wed	5.9365	-0.9202	-1.5048	-1.4052
01/28/2005	Fri	6.8503	2.1898	3.0920	0.8483
06/15/2005	Wed	0.2815	-0.4152	-1.5212	-0.2424
Avg		1.9162	-0.4628	-0.0961	-2.0699
AvgPos		2.8340	1.8532	2.2702	4.2432
AvgNeg		-2.2139	-1.7862	-2.0681	-4.4373
PctPos		81.8182	36.3636	45.4545	27.2727
PctNeg		18.1818	63.6364	54.5455	72.7273
Maximum		6.8503	4.4171	3.4688	10.3453
Minimum		-2.3806	-5.8540	-4.7465	-12.6749
StdDev		3.1620	2.5623	2.5929	6.1339
ZStat		0.6060	-0.1806	-0.0371	-0.3374
Variance		9.9982	6.5654	6.7232	37.6252

11 Occurrences

The S&P 500 and the FOMC

This query tracks the subsequent bounce after a perceived bearish FOMC (Federal Open Market Committee) meeting. With the key conditions that the S&P index has been down severely for two consecutive days (more than 0.75% both the day of the FOMC meeting as well as the following day), we see a boost in the DJIA and SPX. The NASDAQ is only marginally bullish. **LIM**

Query Language

```
SHOW
  DJIA: percent_move from today to 7 values later of DJIA
  SPX: percent_move from today to 7 values later of SPX
  NASD: percent_move from today to 7 values later of NASD
WHEN
  Date is 1 day after in "FOMC/fomc.rpt"
AND
  SPX is down more than 0.75 %
  repeated for the previous and current day
AND
  Date is after 1980
```

This "repeated" clause is useful for making queries more efficient when working with trend-like conditions.

Query Results

Date	Day	DJIA	SPX	NASD
07/02/198	Fri	3.9398	2.5917	-0.4940
08/24/198	Wed	2.6346	2.3256	2.4032
05/18/198	Wed	0.2742	0.8235	-0.0899
08/22/199	Wed	2.1175	1.8986	1.6994
05/15/199	Wed	1.6937	2.4229	3.0518
12/20/200	Wed	3.1711	1.4651	-1.7541
03/21/200	Wed	4.1297	3.4033	0.5480
01/28/200	Wed	1.1909	1.2654	-0.6431
09/21/200	Wed	1.8372	1.5378	2.1385
	Avg	2.3321	1.9704	0.7622
	AvgPos	2.3321	1.9704	1.9682
	AvgNeg	NaN	NaN	-0.7453
	PctPos	100.000	100.000	55.5556
	PctNeg	0.0000	0.0000	44.4444
	Maximum	4.1297	3.4033	3.0518
	Minimum	0.2742	0.8235	-1.7541
	StdDev	1.2673	0.7929	1.6342
	ZStat	1.8403	2.4850	0.4664
	Variance	1.6059	0.6288	2.6706

9 Occurrences

Looking at the VIX

The VIX (S&P 100 Volatility Index) is used by many analysts as a predictor of market moves. High levels in the VIX reflect the increased buying of puts to protect long positions—meaning that higher levels in the VIX should reflect lower levels in the S&P cash index. In this query, 30, 60 and 90-day highs are scanned for as signals of a major milestone. All of this is done very efficiently using custom variables. (Note that some of the data in the results have been edited out for brevity.) **LIM**

Query Language

```
LET
  ATTR numb = 30 TO 90 BY 30

SHOW
  t+10: percent_move from today to 10 values later of SPX
  t+20: percent_move from today to 20 values later of SPX
  t+23: percent_move from today to 23 values later of SPX

WHEN
  Close of VIX is more than numb day highest of VIX 1
  value ago

AND
  Date is after 2002
```

This phrase automates the process of taking the query through different time frames.

First, a day's close is compared to the highest from 30 days ago. On the next iteration, the process is repeated over a 60 and then a 90-day period. All of this is done with the combination of one "WHEN" condition and one "LET" assignment.

Query Results

```
Let variable values:
numb      =      30.000000
Date      Day      t+10      t+20      t+23

01/24/2003  Fri      -3.6812      -3.3457      -2.8001
02/17/2003  Mon      -0.0096       3.3418       4.9048
06/09/2003  Mon       0.5851       3.2697       2.2758
08/04/2003  Mon       1.7216       3.9855       3.9244
09/24/2003  Wed       2.4173       2.0785       2.1548
11/20/2003  Thu       2.6943       5.3219       5.8424
03/10/2004  Wed      -2.8971       1.4806       0.4938
...
10/05/2005  Wed      -0.0527       1.5355       2.2083
01/18/2006  Wed       0.3545       0.1620       0.3999
04/11/2006  Tue       1.4644       2.8199       0.6164
05/12/2006  Fri      -0.8581      -4.2471      -2.7168
05/30/2006  Tue      -2.8694      -1.6383       0.8223
06/13/2006  Tue       1.12675      2.8528       0.8826

Avg        0.2202       1.2135       1.3754
AvgPos     1.5174       2.5182       2.1790
AvgNeg    -1.3129      -1.9551      -2.6423
PctPos     54.1667      70.8333      83.3333
PctNeg     45.8333      29.1667      16.6667
Maximum     3.0106       5.3219       6.3000
Minimum    -3.6812      -4.2471      -4.3223
StdDev     1.7859       2.5494       2.5802
ZStat      0.1233       0.4760       0.5331
Variance   3.1895       6.4993       6.6577
```

While the 10-day move of the SPX shows a slight bullish tendency when the VIX matches query conditions, things become more significant after 20 days.

24 Occurrences

Let variable values:
 numb = 60.000000

Date	Day	t+10	t+20	t+23
01/24/2003	Fri	-3.6812	-3.3457	-2.8001
02/17/2003	Mon	-0.0096	3.3418	4.9048
08/05/2003	Tue	3.8210	6.2986	6.8548
09/30/2003	Tue	5.3727	5.1026	5.4961
03/10/2004	Wed	-2.8971	1.4806	0.4938
04/15/2005	Fri	1.2454	1.0003	3.7580
08/16/2005	Tue	-0.8964	0.6413	0.9579
10/05/2005	Wed	-0.0527	1.5355	2.2083
05/12/2006	Fri	-0.8581	-4.2471	-2.7168
05/30/2006	Tue	-2.8964	-1.6383	0.8223
06/13/2006	Tue	1.2675	2.8528	0.8826

Avg	0.0402	1.1838	1.8965
AvgPos	2.9266	2.7817	2.9310
AvgNeg	-1.6092	-3.0770	-2.7584
PctPos	36.3636	72.7273	81.8182
PctNeg	63.6364	27.2727	18.1818
Maximum	5.3727	6.2986	6.8548
Minimum	-3.6812	-4.2471	-2.8001
StdDev	2.7987	3.2783	3.1389
ZStat	0.0144	0.3611	0.6042
Variance	7.8326	10.7475	9.8525

11 Occurrences

Expanding the query range to 60 days gives a more pronounced pullback reaction after 10 days. After 20 days, things look similar to the previous results.

Let variable values:
 numb = 90.000000

Date	Day	t+10	t+20	t+23
02/17/2003	Mon	-0.0096	3.3418	4.9048
09/30/2003	Tue	5.3727	5.1026	5.4961
03/11/2004	Thu	0.2177	2.9401	1.9326
04/15/2005	Fri	1.2454	1.0003	3.7580
10/05/2005	Wed	-0.0527	1.5355	2.2083
05/17/2006	Wed	1.2115	-1.1147	-2.3773
06/12/2006	Mon	1.1453	2.9214	-0.0162

Avg	1.3043	2.2467	2.2723
AvgPos	1.8385	2.8069	3.6600
AvgNeg	-0.0311	-1.1147	-1.1968
PctPos	71.4286	85.7143	71.4286
PctNeg	28.5714	14.2857	28.5714
Maximum	5.3727	5.1026	5.4961
Minimum	-0.0527	-1.1147	-2.3773
StdDev	1.8858	1.9853	2.7841
ZStat	0.6917	1.1316	0.8162
Variance	3.5562	3.9415	7.7511

7 Occurrences

Here we see the significance of 90-day highs. Both the 10 and 20-day ranges see very pronounced bullish tendencies.

Weighing the Weather

Looking for significant deviations from average temperatures can yield to some quick plays in certain commodities. Here, wheat traded at the Chicago Board of Trade sees a bullish boost from below-normal rainfall measured in Chicago in August. In 25 previous occurrences, wheat is up in 84% of the cases by an average of 1.7%. We also see the few declines average an almost equivalent 1.6%. (Note that some of the data in the results have been edited out for brevity.) **LIM**

Query Language

```
SHOW
  t+5: percent_move from today to 5 values later of W
WHEN
  Date is last day of August
AND
  1 calendar month average of rainprecip of CHICAGO.OHARE.IL
  is less than average from begin_of_time to today of IF
  Date is August
THEN rainprecip of CHICAGO.OHARE.IL
ENDIF
```

This condition ensures data from all of August will be analyzed.

It is useful to read this line from the end to the beginning. The embedded "IF-THEN" statement limits the query to rainfall values in August.

Only August rainfall values are averaged together over all time. Lastly, the value at the end of August is compared to the all-time average up to that point.

Query Results

Date	Day	t+5
08/31/1959	Mon	0.1927
08/31/1961	Thu	1.5267
08/31/1962	Fri	0.6398
08/31/1964	Mon	0.0838
08/31/1966	Wed	1.6096
08/31/1969	Fri	1.8537
08/31/1970	Mon	3.6306
...		
08/31/1992	Mon	3.1274
08/31/1994	Wed	1.7882
08/31/1995	Thu	2.8381
08/31/1996	Fri	1.1148
08/31/1999	Tue	1.6053
08/31/2000	Thu	-0.0997
08/31/2003	Fri	-5.1701
08/31/2005	Wed	2.4876
	Avg	1.1763
	AvgPos	1.7065
	AvgNeg	-1.6070
	PctPos	84.0000
	PctNeg	16.0000
	Maximum	3.6306
	Minimum	-5.1701
	StdDev	1.7670
	ZStat	0.6657
	Variance	3.1224

25 Occurrences

Programming a Peak Detector

This query shows what happens to Dell after a peak has been detected which is higher than the previous peak. First it detects a peak by finding the bar with a high that is higher than the three bars before and after it. The query is triggered when this peak is higher than the previous peak. The number of trading days between peaks is also reported. This query illustrates that Dell has a strong pullback tendency when a higher peak is detected, with it coming down 85% of the time seven trading days after the event and 93% of the time nine trading days after the event by an average of -2.4% and -2.5% respectively. **LIM**

Query Language

```

LET
  ATTR SwingHighClose = IF High of DELL is DEFINED
    AND
      High of DELL 3 values ago is more than highest from
      2 days ago to today of High of DELL
    AND
      High of DELL 3 values ago is more than highest
      from 6 values ago to 4 values ago of High of DELL
  THEN 1
  ENDIF

LET
  ATTR SwingHighValue = IF SwingHighClose is DEFINED
  THEN High of DELL 3 values ago
  ENDIF

  6 5 4 3 2 1 T

SHOW
  AftSH+7w: percent_move from today to 7 values
  later of High of DELL
  AftSH+9m: percent_move from today to 9 values
  later of High of DELL
  daysbetweenswing: periods_in_range from
    { SwingHighClose is DEFINED }
    to
    { SwingHighClose is DEFINED }

WHEN
  SwingHighValue is more than SwingHighValue
  1 value ago
    
```

Sometimes it is useful to add the condition "is DEFINED" to protect against errors which would occur as a result of a data not being in the system. While this is not an issue for Dell, applying this query to some other sets of data where holes are common will prevent lots of problems.

Here, a high is compared to the three bars after it.

Here, the same high is compared to the three bars before it.

If the above two conditions are true, the condition that a SwingHighClose has been found should be signaled. A common programming technique is to use "THEN 1", which does the actual signaling.

Now that a peak area has been found, SwingHighValue is assigned the actual high of the peak area. Note that one has to go back three values since the MIM server can only determine a peak area at the end of the 7-bar structure.

Here is the 7-bar structure that was detected. The "T" represents today and the numbers represent the number of values ago in the above section.

This is very useful for gauging the time between swings.

This triggers a result when one peak area is higher than the previous peak area.

Query Results

```
Let variable values:
SwingHighClose = IF
  High of DELL is DEFINED
  AND
  High of DELL 3 values ago is more than highest
  from 2 days ago to today of High of DELL
  AND
  High of DELL 3 values ago is more than highest
  from 6 values ago to 4 values ago of High of DELL
THEN 1
```

Here XMIM tells the user how variables are assigned. In this case it is telling you what is assigned as "SwingHighClose".

```
ENDIF
SwingHighValue = IF
  SwingHighClose is DEFINED
  THEN High of DELL 3 values ago
ENDIF
```

In this case, XMIM tells us what constitutes a "SwingHighValue".

Date	Day	AftSH+7	AftSH+9	daysbetweenswing
09/01/2004	Wed	2.0074	-0.1635	11.0000
09/16/2004	Thu	-1.3498	-0.3375	5.0000
10/12/2004	Tue	-0.8394	-3.3016	8.0000
12/08/2004	Wed	-1.0272	-0.5972	4.0000
12/14/2004	Tue	-1.3702	-0.8032	4.0000
02/04/2005	Fri	-3.1559	-2.8186	6.0000
03/09/2005	Wed	-4.1308	-5.2553	4.0000
03/15/2005	Tue	-1.9457	-2.3554	11.0000
04/08/2005	Fri	-6.6544	-3.3534	13.0000
05/11/2005	Wed	8.9563	9.8226	21.0000
06/22/2005	Wed	-2.7441	-2.4969	12.0000
07/25/2005	Mon	-1.8169	-3.9002	5.0000
01/12/2006	Thu	-2.7009	-4.6209	23.0000
02/21/2006	Tue	-0.8386	-2.3147	25.0000
08/09/2006	Wed	NaN	NaN	NaN
Avg		-1.2579	-1.6068	10.8571
AvgPos		5.4819	9.8226	10.8571
AvgNeg		-2.3812	-2.4860	NaN
PctPos		14.2857	7.1429	100.0000
PctNeg		85.7143	92.8571	0.0000
Maximum		8.9563	9.8226	25.0000
Minimum		-6.6544	-5.2553	4.0000
StdDev		3.5243	3.6468	7.3260
ZStat		-0.3569	-0.4406	1.4820
Variance		12.4210	13.2994	53.6703

Here we see 25 days had elapsed between this peak area and the one before and below it.

15 Occurrences