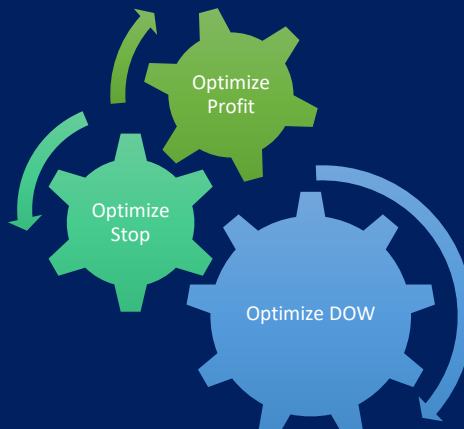


Day Trader
Framework
version 1.3

TradeStation and
Multicharts



The Day-Trader EasyLanguage Framework - A Toolbox

A Pre-programmed Environment to help empirically test your Day Trading ideas

Getting your trading ideas into EasyLanguage is difficult enough when dealing with simple daily bars. Adding intraday analysis makes it more complicated - much more complicated. Why?

- You must keep track of entries during the day
- Interfacing with daily bar calculations as an overlay
- Example: using a 40-day momentum indicator
- Limiting entries to a certain portion of the trading day
- Using intraday volatility-based stops and profit objectives
- Or use a fixed \$ stop - profit objective
- Or use a percent of price stop or profit objective
- Limiting entries after a narrow range such as Toby Crabel's NR7
- Using Volatility or Time-based breakouts
- Buy-Short off the open a certain percentage of the Average Range (True)
- Buy-the highest high/lowest low after N minutes after the open
- Day Of Week [DOW] Analysis
 - Is it better to just buy on a Monday?
 - Is it better to short on Fridays?
 - Is it worth trading on Wednesday?

Everything has been pre-programmed for you. You can simply adjust the parameters via the inputs to create your own strategy. Plus, having all of the code disclosed will allow you to simply copy and paste portions of the framework directly into your own code. The base template code is fully documented. Learn how to limit trade entries during certain periods. Also learn how to use TradeStation's optimization to perform a day of week analysis. You will learn the following concepts:

- arrays and array manipulation
- building your own protective stops and profit objectives
- how to keep track of the number of underlying bars and their extremes prior to a trade
- integrate multiple buy/short setups and then optimize each one with different stops/profit objectives

What can I optimize?

- Profit objectives
 - percentage of average true range or average of range (average length: user input)
 - percentage of entryPrice - .5% or 1% - up to you
 - fixed \$ amount - does a quick \$500 hurt overall results?
- Protective stops
 - percentage of average true range or average of range (average length: user input)
 - percentage of entryPrice - .5% or 1% - up to you
 - fixed \$ amount - does a quick \$500 stop increase or decrease draw down?
- Is it best to wait 30 minutes after the open to place an order?
 - or 60 minutes?
 - or 90 minutes?
- Is it best to stop initiating trades after 3:30?
 - or after 3:00?
 - or after 3:30>
- Should I get out 5 or 10 or 15 minutes prior to the close? (Based on chart granularity)
- Day of Week - does it make sense to only trade a certain day of the week - many market technicians think it's a valid filtering process

| | DayTraderCreator1.2_ELM: wichDayOfWeekOptimizer | Test | All: Net Profit | All: Gross Profit | All: Gross Loss | All: Total Trades | All: % Profitable | All: Winning Trades | All: Losing Trades |
|---|--|------|-----------------|-------------------|-----------------|-------------------|-------------------|---------------------|--------------------|
| 1 | 1 | 1 | 11,300.00 | 14,050.00 | -2,750.00 | 34 | 70.59 | 24 | 8 |
| 2 | 3 | 3 | 4,837.50 | 11,487.50 | -6,650.00 | 31 | 58.06 | 18 | 13 |
| 3 | 5 | 5 | 3,075.00 | 8,787.50 | -5,712.50 | 31 | 45.16 | 14 | 17 |
| 4 | 2 | 2 | 2,912.50 | 10,412.50 | -7,500.00 | 37 | 62.16 | 23 | 14 |
| 5 | 4 | 4 | -1,162.50 | 4,650.00 | -5,812.50 | 26 | 57.69 | 15 | 11 |

- Is there a certain pattern such as + + + - that precedes an up move. Or is there a different combination of a 4 close pattern that really rings the bell. The template of pattern optimization is built-in and can be easily modified

These concepts can be combined to create a day trading strategy that might provide a technical edge. Remember these concepts are integral parts to a full-blown trading algorithm. Optimizing core concepts such as these, in my honest opinion, are not providing the tools to fool yourself (over curve fitting). These tools help you find the ballpark and then you can pull the necessary code out and apply to your own algorithm. The following are different scenarios that are provided with the framework.

Set Up - One Chart Two Data

Data1 should be 5 or less minute granularity. Data2 should be a higher time frame. In all of the examples here a daily bar will be used.

DayTrade Creator Scenarios

Scenario #1: Volatility Based Open Range Breakout with protective stop and profit objective

Investigate profit/loss stream of an ES [ES.D] day trade algorithm using the following criteria

- Buy - open range break out of 20% of the ten-day average true range:
 - Enter long on a stop at open tick + 0.2 * ATR(10)
 - Initiate only after the following condition are met:

- Yesterday's True-Range < the ten-day ATR [range compression]
 - Yesterday's Close > Prior Day's Close and the Prior Day's Close > the Day Before
 - Buy Pattern String = [+ +] (**ONLY BUY AFTER TWO UP CLOSES**)
 - Time > 0930 and Time <= 1230 [morning trades only]
- Exit long at entryPrice – 0.4 of the ten-day ATR or \$500 whichever is closer
- Exit long at entryPrice +0.5 of the ten-day ATR or \$600 whichever is closer
- Short – open range break out of 20% of the ten-day average true range:
 - Enter short on a stop at open tick – 0.2 *ATR(10)
 - Initiate only after the following conditions are met:
 - Yesterday's True-Range < the ten-day ATR [range compression]
 - Yesterday's Close < Prior Day's Close and the Prior Days Close < the Day Before
 - Sell Pattern String = [- -] (**ONLY SELL AFTER TWO DOWN CLOSES**)
 - Time > 0930 and Time <= 1230 [morning trades only]
 - Exit short at entryPrice + 0.4 of the ten-day ATR or \$500 whichever is closer
 - Exit short at entryPrice - 0.5 of the ten-day ATR or \$600 whichever is closer

Here are the inputs to the Day Trader Creator Frame Work to effectuate **Scenario #1** on the ES.D:

TradeStation Strategy Performance Report - @ES.D 5 min (5/10/2011-5/10/2021)

Account (USD) | ALL Data

| TradeStation Strategy Inputs | |
|---|---------|
| Description | Value |
| EL-DayTraderFramework1.3 - userInput1 | 0 |
| EL-DayTraderFramework1.3 - userInput2 | 0 |
| EL-DayTraderFramework1.3 - maxBuysToday | 1 |
| EL-DayTraderFramework1.3 - maxShortsToday | 1 |
| EL-DayTraderFramework1.3 - numShares | 1 |
| EL-DayTraderFramework1.3 - buyShortSetUp | 0 |
| EL-DayTraderFramework1.3 - buyPattern | "++" |
| EL-DayTraderFramework1.3 - shortPattern | "--" |
| EL-DayTraderFramework1.3 - useVolBreakOut | True |
| EL-DayTraderFramework1.3 - orboBuyPer | .2 |
| EL-DayTraderFramework1.3 - orboShortPer | .2 |
| EL-DayTraderFramework1.3 - useXBarBreakOut | False |
| EL-DayTraderFramework1.3 - numMinBarsBreakOut | 6 |
| EL-DayTraderFramework1.3 - useTimeConstra | true |
| EL-DayTraderFramework1.3 - startTime | 930 |
| EL-DayTraderFramework1.3 - startDelay | 5 |
| EL-DayTraderFramework1.3 - endTime | 1230 |
| EL-DayTraderFramework1.3 - endTimeDelay | 5 |
| EL-DayTraderFramework1.3 - getOutTime | 1600 |
| EL-DayTraderFramework1.3 - getOutTimeDelay | 5 |
| EL-DayTraderFramework1.3 - useNRDays | false |
| EL-DayTraderFramework1.3 - NRDays | 7 |
| EL-DayTraderFramework1.3 - atrLen | 10 |
| EL-DayTraderFramework1.3 - arLen | 10 |
| EL-DayTraderFramework1.3 - useSmallRange | True |
| EL-DayTraderFramework1.3 - smallRngPer | .9 |
| EL-DayTraderFramework1.3 - useLargeRange | False |
| EL-DayTraderFramework1.3 - largeRngPer | 1.5 |
| EL-DayTraderFramework1.3 - useTrueRanges | true |
| EL-DayTraderFramework1.3 - whichDaysToTrade | "mtwrf" |
| EL-DayTraderFramework1.3 - wichDayOfWeekOptimizer | 0 |
| EL-DayTraderFramework1.3 - perATRStop | 0.4 |
| EL-DayTraderFramework1.3 - perRangeStop | 0 |
| EL-DayTraderFramework1.3 - perPriceStop | 0 |
| EL-DayTraderFramework1.3 - dollarStop | 500 |
| EL-DayTraderFramework1.3 - perATRProf | .5 |
| EL-DayTraderFramework1.3 - perRangeProf | 0 |
| EL-DayTraderFramework1.3 - perPriceProf | 0 |
| EL-DayTraderFramework1.3 - dollarProf | 600 |

Performance Summary | Trade Analysis | Trades List | Periodical Returns | Performance Graphs | Trade Graphs | Settings

Did it work. Here are two examples that follow our directives:

- Two Up Closes [daily bars]
- Range Compression [small histogram at bottom of chart]
- 20% of ATR above open tick
- Profit and Loss at specified \$ values

Examples of Entries and Exits on Scenario #1



1. Close > Close[1]
2. ATR is small
3. Close > Close[1]
4. ATR is really small
5. Market moves up off of the open
 - a. Trade 1 took profits
 - b. Trade 2 got stopped out

Scenario #2: Optimize: Day of Week, Profit Objective and Protective Stop

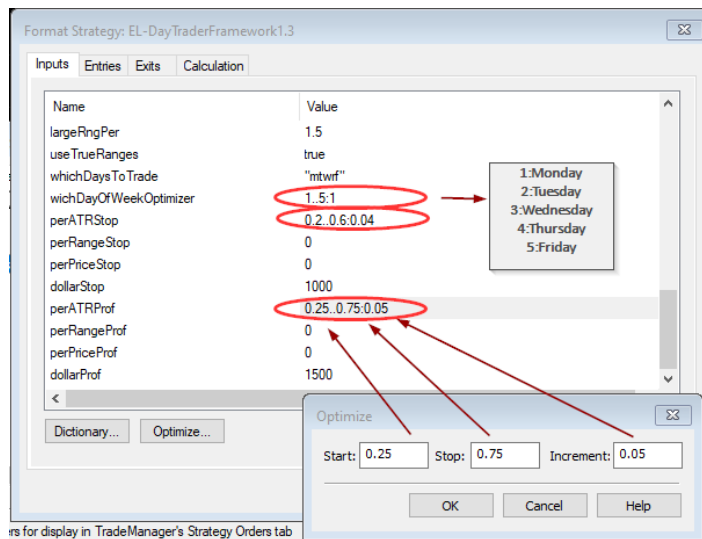
Investigate testing Scenario #1 through optimizing the Day of Week, the Profit Objective [% of ATR], and the Protective Stop [% of ATR.] Here is a snapshot of the optimization:

Optimization Results of Scenario #2

| | EL-DayTraderFramework1.3: whichDayOfWeekOptimizer | perATRStop | perATRProf | Test | All: Net Profit | All: Max Intraday Drawdown | All: Avg Trade |
|----|--|------------|------------|------|-----------------|----------------------------|----------------|
| 1 | 5 | 0.52 | 0.40 | 210 | 6,450.00 | -1,175.00 | 403.13 |
| 2 | 5 | 0.56 | 0.40 | 215 | 6,400.00 | -1,225.00 | 400.00 |
| 3 | 5 | 0.52 | 0.45 | 265 | 6,387.50 | -1,175.00 | 399.22 |
| 4 | 5 | 0.60 | 0.40 | 220 | 6,362.50 | -1,262.50 | 397.66 |
| 5 | 5 | 0.52 | 0.40 | 270 | 6,337.50 | -1,225.00 | 396.09 |
| 6 | 5 | 0.32 | 0.40 | 275 | 6,300.00 | -1,262.50 | 393.75 |
| 7 | 5 | 0.32 | 0.45 | 185 | 5,925.00 | -1,025.00 | 370.31 |
| 8 | 5 | 0.36 | 0.40 | 240 | 5,862.50 | -1,025.00 | 366.41 |
| 9 | 5 | 0.36 | 0.45 | 190 | 5,750.00 | -1,137.50 | 359.38 |
| 10 | 5 | 0.36 | 0.45 | 245 | 5,687.50 | -1,137.50 | 355.47 |
| 11 | 5 | 0.52 | 0.35 | 155 | 5,687.50 | -1,175.00 | 355.47 |
| 12 | 5 | 0.44 | 0.40 | 200 | 5,675.00 | -1,087.50 | 354.69 |
| 13 | 5 | 0.56 | 0.35 | 160 | 5,637.50 | -1,225.00 | 352.34 |
| 14 | 5 | 0.44 | 0.45 | 255 | 5,612.50 | -1,087.50 | 350.78 |
| 15 | 5 | 0.60 | 0.35 | 165 | 5,600.00 | -1,262.50 | 350.00 |
| 16 | 5 | 0.40 | 0.40 | 195 | 5,587.50 | -1,237.50 | 349.22 |
| 17 | 5 | 0.48 | 0.40 | 205 | 5,562.50 | -1,175.00 | 347.66 |
| 18 | 5 | 0.40 | 0.45 | 250 | 5,525.00 | -1,237.50 | 345.31 |
| 19 | 5 | 0.48 | 0.45 | 260 | 5,500.00 | -1,137.50 | 343.75 |
| 20 | 5 | 0.24 | 0.45 | 230 | 5,375.00 | -800.00 | 335.94 |
| 21 | 5 | 0.32 | 0.35 | 130 | 5,162.50 | -1,025.00 | 322.66 |
| 22 | 5 | 0.52 | 0.55 | 375 | 5,062.50 | -1,612.50 | 316.41 |

Optimization Set Up for Scenario #2

Here it looks like trading on Fridays is our best bet and using 52% of the ATR as a stop and 40% of ATR as a profit objective works best. Now how did I set up the Framework to do this optimization?



This was all accomplished without changing one line of source code.

Scenario #3: Optimize Day of Week – Buy/Short penetration of highest high or lowest low of the first six bars or 30 minutes.

Short penetration of first lowest low of first 30 minutes. This is known as the 30-minute break out - a highly flaunted systems that was shown at many trade shows live. Let's continue in the same vein of this research and use the capabilities to see if buying near the open of the day with a wide stop has a better chance on Monday than Friday. We will reverse it and see if Fridays are better for selling.

Investigate profit/loss stream of an ES [ES.D] day trade algorithm using the following criteria

- Buy - open range break out at highest high of first six (5 minutes) bars:
 - Enter long on a stop at first 30 minute highest high of the day
 - Initiate only after the following condition are met:
 - Yesterday's True-Range < the ten-day ATR [range compression]
 - Time > 0930 and Time <= 1530 [do not trades late in day]
 - Exit long at entryPrice – 0.4 of the ten-day ATR or \$500 whichever is closer
- Short - open range break out at lowest low of first six (5 minutes) bars:
 - Enter short on a stop at first 30-minute lowest low of the day
 - Initiate only after the following condition are met:
 - Yesterday's True-Range < the ten-day ATR [range compression]
 - Time > 0930 and Time <= 1530 [do not trades late in day]
 - Exit Short at entryPrice + 0.4 of the ten-day ATR or \$500 whichever is closer
- Only allow one long and one short entry each day
- Exit near close if not stopped out.

Scenario 3 Setup

Here are the Framework inputs to put this system to work.

< - this portion of this page left intentionally blank >

| Description | Value |
|---|---------|
| EL-DayTraderFramework1.3 - userInput1 | 0 |
| EL-DayTraderFramework1.3 - userInput2 | 0 |
| EL-DayTraderFramework1.3 - maxBuysToday | 1 |
| EL-DayTraderFramework1.3 - maxShortsToday | 1 |
| EL-DayTraderFramework1.3 - numShares | 1 |
| EL-DayTraderFramework1.3 - buyShortSetUp | 0 |
| EL-DayTraderFramework1.3 - buyPattern | "" |
| EL-DayTraderFramework1.3 - shortPattern | "" |
| EL-DayTraderFramework1.3 - useVolBreakOut | False |
| EL-DayTraderFramework1.3 - orboBuyPer | .2 |
| EL-DayTraderFramework1.3 - orboShortPer | .2 |
| EL-DayTraderFramework1.3 - useXBarBreakOut | True |
| EL-DayTraderFramework1.3 - numMinBarsBreakOut | 6 |
| EL-DayTraderFramework1.3 - useTimeConstraints | true |
| EL-DayTraderFramework1.3 - startTime | 930 |
| EL-DayTraderFramework1.3 - startTimeDelay | 5 |
| EL-DayTraderFramework1.3 - endTime | 1530 |
| EL-DayTraderFramework1.3 - endTimeDelay | 5 |
| EL-DayTraderFramework1.3 - getOutTime | 1600 |
| EL-DayTraderFramework1.3 - getOutTimeDelay | 5 |
| EL-DayTraderFramework1.3 - useNRDays | false |
| EL-DayTraderFramework1.3 - NRDays | 7 |
| EL-DayTraderFramework1.3 - atrLen | 10 |
| EL-DayTraderFramework1.3 - arLen | 10 |
| EL-DayTraderFramework1.3 - useSmallRange | True |
| EL-DayTraderFramework1.3 - smallRngPer | 1 |
| EL-DayTraderFramework1.3 - useLargeRange | false |
| EL-DayTraderFramework1.3 - largeRngPer | 1.5 |
| EL-DayTraderFramework1.3 - useTrueRanges | true |
| EL-DayTraderFramework1.3 - whichDaysToTrade | "mtwrf" |
| EL-DayTraderFramework1.3 - wichDayOfWeekOptimizer | 0 |
| EL-DayTraderFramework1.3 - perATRStop | 0.4 |
| EL-DayTraderFramework1.3 - perRangeStop | 0 |
| EL-DayTraderFramework1.3 - perPriceStop | 0 |
| EL-DayTraderFramework1.3 - dollarStop | 500 |
| EL-DayTraderFramework1.3 - perATRProf | 0 |
| EL-DayTraderFramework1.3 - perRangeProf | 0 |
| EL-DayTraderFramework1.3 - perPriceProf | 0 |
| EL-DayTraderFramework1.3 - dollarProf | 0 |

Six Bar
Break
Out

0.4 ATR or
\$500 Stop
Loss

0 Values Turn
These Off

< - this portion of this page left intentionally blank >

Chart Showing Examples of Trades



Overall, the results were not that great - recently volatility probably requires a larger stop value. But the objective was to optimize this system on Day of the Week (DOW). So, let us first analyze this from the long side on different days of the week and while we are at it let us increase the max stop loss to \$1,000. Here is how you do it.

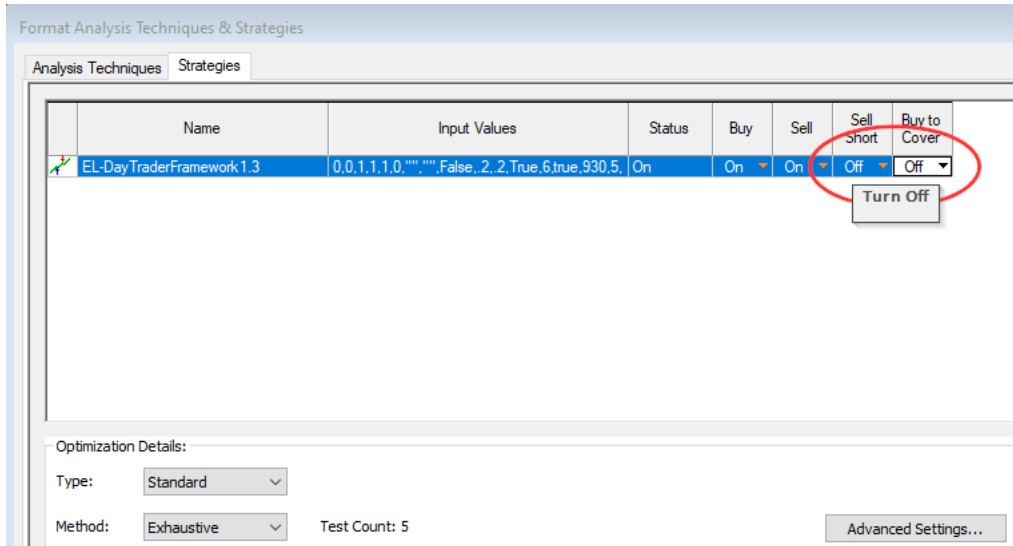
Optimize on Day Of Week for Long Entries Only

First set up the optimization of the Day of Week.

Format Strategy: EL-DayTraderFramework1.3

| Inputs | |
|------------------------|---------|
| Name | Value |
| useNRDays | false |
| NRDays | 7 |
| atrLen | 10 |
| arLen | 10 |
| useSmallRange | True |
| smallRngPer | 1 |
| useLargeRange | false |
| largeRngPer | 1.5 |
| useTrueRanges | true |
| whichDaysToTrade | "mtwrf" |
| wichDayOfWeekOptimizer | 1..5:1 |
| perATRStop | 0.4 |

Now turn off the short entries from the Format dialog.

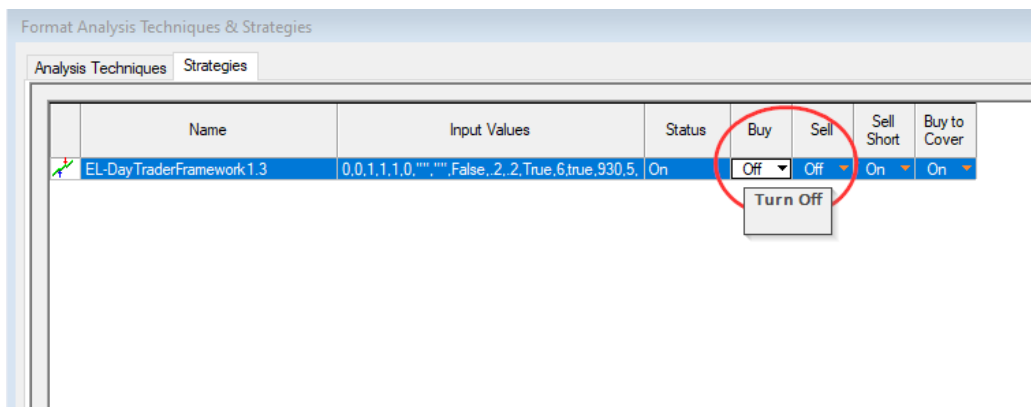


Results of Long Side Only Optimizations

| | EL-DayTraderFramework1.3: wichDayOfWeekOptimizer | Test | All: Net Profit | All: Avg Trade |
|---|---|------|-----------------|----------------|
| 1 | | 4 | 3,000.00 | 49.18 |
| 2 | Buy Monday or Thursday | 1 | 2,237.50 | 41.44 |
| 3 | | 5 | -125.00 | -2.27 |
| 4 | | 3 | -225.00 | -3.13 |
| 5 | | 2 | -3,987.50 | -60.42 |

Buy on Thursday's and use a \$1,000 stop

Optimize on Day of Week for Short Entries



Results of Short Side Optimizations

| | EL-DayTraderFramework1.3: wchDayOfWeekOptimizer | Test | All: Net Profit | All: Avg Trade |
|---|--|------|-----------------|----------------|
| 1 | 2 | 2 | 6,250.00 | 125.00 |
| 2 | 1 | 1 | 2,300.00 | 50.00 |
| 3 | 5 | 5 | -1,987.50 | -38.97 |
| 4 | 3 | 3 | -2,912.50 | -42.21 |
| 5 | 4 | 4 | -3,737.50 | -71.88 |

Short On Tuesdays or Mondays- against the accepted grain

Sell Short on Tuesday or Monday only. Well it was a rule of thumb to buy on Monday and Short on Friday.

Combine Research on Scenario #3 Into One Chart

| TradeStation Performance Summary Expand | | | |
|--|---------------|---------------|---------------|
| | All Trades | Long Trades | Short Trades |
| Total Net Profit | \$12,412.50 | \$4,912.50 | \$7,500.00 |
| Gross Profit | \$73,075.00 | \$39,237.50 | \$33,837.50 |
| Gross Loss | (\$60,662.50) | (\$34,325.00) | (\$26,337.50) |
| Profit Factor | 1.20 | 1.14 | 1.28 |
| Total Number of Trades | 211 | 115 | 96 |
| Percent Profitable | 45.50% | 47.83% | 42.71% |
| Winning Trades | 96 | 55 | 41 |
| Losing Trades | 114 | 60 | 54 |
| Even Trades | 1 | 0 | 1 |
| Avg. Trade Net Profit | \$58.83 | \$42.72 | \$78.13 |
| Avg. Winning Trade | \$761.20 | \$713.41 | \$825.30 |
| Avg. Losing Trade | (\$532.13) | (\$572.08) | (\$487.73) |
| Ratio Avg. Win:Avg. Loss | 1.43 | 1.25 | 1.69 |
| Largest Winning Trade | \$3,212.50 | \$3,212.50 | \$3,137.50 |
| Largest Losing Trade | (\$1,000.00) | (\$1,000.00) | (\$1,000.00) |
| Max. Consecutive Winning Trades | 6 | 5 | 5 |
| Max. Consecutive Losing Trades | 7 | 10 | 4 |
| Avg. Bars in Winning Trades | 64.45 | 65.89 | 62.51 |
| Avg. Bars in Losing Trades | 36.46 | 32.73 | 40.61 |
| Avg. Bars in Even Trades | 52.00 | 0.00 | 52.00 |
| Max. Shares/Contracts Held | 1 | 1 | 1 |
| Total Shares/Contracts Held | 211 | 115 | 96 |
| Account Size Required | \$6,925.00 | \$6,725.00 | \$4,637.50 |

These results were derived by combining the Framework with the exact same parameters except for the days of the week and either to go long only or to go short only.

| Name | Input Values | Monday and Tuesday |
|--------|--|---------------------|
| EL-Day | 0,0,1,1,1,0,"", "", False, 2, 2, True, 6, true, 930, 5, 1530, 5, 1600, 5, false, 7, 10, 10, True, 1, false, 1.5, true, "mt", 0, 0, 4, 0, 0, 1000, 0, 0, 0, 0 | |
| EL-Day | 0,0,1,1,1,0,"", "", False, 2, 2, True, 6, true, 930, 5, 1530, 5, 1600, 5, false, 7, 10, 10, True, 1, false, 1.5, true, "mr", 0, 0, 4, 0, 0, 1000, 0, 0, 0, 0 | Monday and Thursday |

| Name | Input Value | Status | Buy | Sell | Sell Short | Buy to Cover |
|--------|----------------|--------|-------|-------|---------------|-----------------|
| EL-Day | 0.0 | On | Off ▼ | Off ▼ | On ▼ | On ▼ |
| EL-Day | 0.0 | On | On ▼ | On ▼ | Off ▼ | Off ▼ |

Scenario #4: A Long Side Only Breakout taken from EasyLanguageMastery.com

Investigate buying when a longer-term momentum is negative (mean reversion). Now this is where you can actually go into the Framework and modify the source code to fit your needs. Many times, you will come up with a trading idea that is more complicated than just turning some inputs on or off, but you still want to use time constraints, DayOfWeek (DOW) analysis, and different profit objectives and stop losses. This code also demonstrates how to use the prior day's close as the basis for a breakout. Now if you modify the internal code it is a good idea to save the Framework as another name. In this case I have saved this version as EL-DayTraderFWScenario4.

- Buy a stretch amount above the prior day's close:
 - Enter long on a stop at $\text{closeD} + X * \text{stretch}$
 - Initiate only if momentum indicator is negative
- Exit long at a profit = 0.75 times ATR
- Exit long at predefined user exit level ($\frac{1}{2}$ stretch amount)

Here is the code that is nested inside the BuyShortSetup section.

```

If buyShortSetUP = 1 then
Begin
    okToBuy = False;
    okToShort = False;
    if vMomentum < 0 then
    begin
        okToBuy = True;
        stb = close of data2 + MaxOffsetAvg;
    end;
// if okToBuy then print(d," ",t," ",stb);
end;

```

This code turns **okToBuy** and **okToShort** off initially. Then if **vMomentum** is less than 0 and **okToBuy** is set to true and the stop to enter a long position is set to:

stb = close of data2 + MaxOffsetAvg;

Now where did we get the following values from:

- **vMomentum** = close of data2 - close[userInput1] of data2
- **MaxOffsetAvg** = a three-day average of
 - Maximum of High - Close or Close - Low

Now the Framework does not calculate these values automatically. You have to go in there and tell EasyLanguage what you need and how to derive it. Since we are dealing with calculations on daily bars we must always DATA ALIAS these calculations correctly.

Take a look at how I declared the values that I need based on Daily Bars:

```
// put your own variables here here
vars:
LowOffset(0,data2),HighOffset(0,data2),MaxOffset(0,data2),MaxOffSetAvg(0,data2),vMomentum(0);
```

These variables are declared with the word data2 inside of the values of each variable. If data 1 is a five minute bar then all calculations are carried out on each 5 minute bar. A daily bar does not contain intraday bars so if you say look back at the last three values of MaxOffset and **did not declare** the value with the keyword data2 this is what you would get. Each value is the same and if you average these three you get the same number. This is not correct.

Data Aliasing

| | | | | | | | | | |
|------------|---------|--------------------|-------------------|-------------------|----------------------|-------|-------|-------|-------|
| 1210506.00 | 1615.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 935.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 42.42 | 54.00 | 54.00 | 19.25 |
| 1210507.00 | 940.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 945.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 950.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 955.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1000.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1005.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1010.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1015.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1020.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1025.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1030.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1035.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1040.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1045.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1050.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1055.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1100.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1105.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1110.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1115.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1120.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1125.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1130.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |
| 1210507.00 | 1135.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffSetAvg = 54.00 | 54.00 | 54.00 | 54.00 | 54.00 |

Now if you declare these values properly this is what you get.

| | | | | | | | | |
|------------|---------|--------------------|-------------------|--------------------|----------------------|-------|-------|-------|
| 1210506.00 | 1540.00 | vMomentum = 105.45 | LowOffset = 7.75 | HighOffset = 19.25 | MaxOffsetAvg = 24.83 | 19.25 | 35.50 | 19.75 |
| 1210506.00 | 1545.00 | vMomentum = 105.45 | LowOffset = 7.75 | HighOffset = 19.25 | MaxOffsetAvg = 24.83 | 19.25 | 35.50 | 19.75 |
| 1210506.00 | 1550.00 | vMomentum = 105.45 | LowOffset = 7.75 | HighOffset = 19.25 | MaxOffsetAvg = 24.83 | 19.25 | 35.50 | 19.75 |
| 1210506.00 | 1555.00 | vMomentum = 105.45 | LowOffset = 7.75 | HighOffset = 19.25 | MaxOffsetAvg = 24.83 | 19.25 | 35.50 | 19.75 |
| 1210506.00 | 1600.00 | vMomentum = 105.45 | LowOffset = 7.75 | HighOffset = 19.25 | MaxOffsetAvg = 24.83 | 19.25 | 35.50 | 19.75 |
| 1210506.00 | 1605.00 | vMomentum = 105.45 | LowOffset = 7.75 | HighOffset = 19.25 | MaxOffsetAvg = 24.83 | 19.25 | 35.50 | 19.75 |
| 1210506.00 | 1610.00 | vMomentum = 105.45 | LowOffset = 7.75 | HighOffset = 19.25 | MaxOffsetAvg = 24.83 | 19.25 | 35.50 | 19.75 |
| 1210506.00 | 1615.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 935.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 940.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 945.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 950.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 955.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1000.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1005.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1010.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1015.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1020.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1025.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1030.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1035.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1040.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1045.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1050.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1055.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1100.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1105.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1110.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1115.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |
| 1210507.00 | 1120.00 | vMomentum = 131.72 | LowOffset = 54.00 | HighOffset = 2.00 | MaxOffsetAvg = 36.25 | 54.00 | 19.25 | 35.50 |

User Defined Calculations:

```

if userInput1 <> 0 then
begin
  LowOffset = Absvalue(Close of data2 - Low of data2 );
  HighOffset = Absvalue(Close of data2 - High of data2);
  MaxOffset = Maxlist( LowOffset, HighOffset );
  MaxOffsetAvg = Average( MaxOffset, 3);
  vMomentum = Close data2 - Average( Close data2, userInput1 );
end;

```

Here the following values are calculated. They are only calculated if userInput1 is not equal to zero. In this case the userInput1 is the length of the momentum indicator.

- LowOffset - magnitude of the distance between close of yesterday and the low of yesterday
- HighOffset - magnitude of the distance between close of yesterday and the high of yesterday
- MaxOffset - the larger of the prior two values
- MaxOffsetAvg - the three period moving average of MaxOffset
- vMomentum - are we above or below the close 40 days back?

Once the variables are calculated then you will need to insert the code to determine if a trade needs to be issued for the next day.

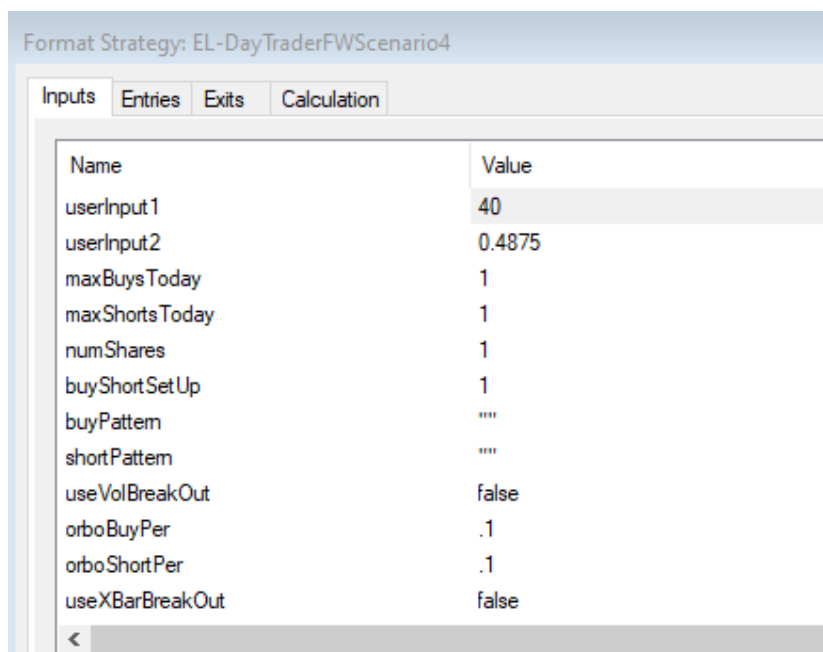
```
If buyShortSetUP = 1 then
Begin
    okToBuy = False;
    okToShort = False;
//    if close of data2 > average(close of data2, 100) then okToBuy = True;
//    if close of data2 < average(close of data2, 100) then okToShort = True;
    if vMomentum < 0 then
    begin
        okToBuy = True;
        stb = close of data2 + userInput2*MaxOffsetAvg;
    end;
//    if okToBuy then print(d," ",t," ",stb);
end;
```

Okay now we are cooking with gas. If the **buyShortSetUP** = 1 - this means use a custom Buy and/or Short logic then determine if a long or short entry criteria is met. Here the **vMomentum** must be less than **zero** and if it is **okToBuy** is set to **True**. Once this is set to true then a stop order to buy is needed to be calculated:

```
Stb = close of data2 + userInput2*MaxOffSetAvg;
```

Special Inputs for Custom Strategy

Here the stop order is placed at yesterday's close + userInput2 * maxOffSetAvg. UserInput2 is set to 0.4875.



| Name | Value |
|-----------------|--------|
| userInput1 | 40 |
| userInput2 | 0.4875 |
| maxBuys Today | 1 |
| maxShorts Today | 1 |
| numShares | 1 |
| buyShortSetUp | 1 |
| buyPattern | "" |
| shortPattern | "" |
| useVolBreakOut | false |
| orboBuyPer | .1 |
| orboShortPer | .1 |
| useXBarBreakOut | false |

Custom Exit Logic

And since we are not using one of the pre-defined stops or profit objectives we need to install some additional code to handle this as well.

```
{Use Custom Stop}

if(marketPosition = 1) then
    sell("Stop Loss") next bar at entryPrice - MaxOffsetAvg/2 stop;
if(marketPosition =-1) then
    buytocover("shortCustLiq") next bar at entryPrice + atrVal*perAtrStop stop;
```

Here we are getting out at **entryPrice - MaxOffsetAvg/2**. Since we are only entering a long position you can just keep the buyToCover stop level as the default logic.

Here is the full input listing for this strategy. Again, the premise was laid out by EasyLanguageMastery.com.

< - this portion of this page left intentionally blank >

Input Values for Scenario #4

| | |
|--|---------|
| EL-DayTraderFWScenario4 - userInput1 | 40 |
| EL-DayTraderFWScenario4 - userInput2 | 0.4875 |
| EL-DayTraderFWScenario4 - maxBuysToday | 1 |
| EL-DayTraderFWScenario4 - maxShortsToday | 1 |
| EL-DayTraderFWScenario4 - numShares | 1 |
| EL-DayTraderFWScenario4 - buyShortSetUp | 1 |
| EL-DayTraderFWScenario4 - buyPattern | "" |
| EL-DayTraderFWScenario4 - shortPattern | "" |
| EL-DayTraderFWScenario4 - useVolBreakOut | false |
| EL-DayTraderFWScenario4 - orboBuyPer | .1 |
| EL-DayTraderFWScenario4 - orboShortPer | .1 |
| EL-DayTraderFWScenario4 - useXBarBreakOut | false |
| EL-DayTraderFWScenario4 - numMinBarsBreakOut | 6 |
| EL-DayTraderFWScenario4 - useTimeConstraints | False |
| EL-DayTraderFWScenario4 - startTime | 930 |
| EL-DayTraderFWScenario4 - startTimeDelay | 5 |
| EL-DayTraderFWScenario4 - endTime | 1610 |
| EL-DayTraderFWScenario4 - endTimeDelay | 5 |
| EL-DayTraderFWScenario4 - getOutTime | 1620 |
| EL-DayTraderFWScenario4 - getOutTimeDelay | 5 |
| EL-DayTraderFWScenario4 - useNRDays | false |
| EL-DayTraderFWScenario4 - NRDays | 7 |
| EL-DayTraderFWScenario4 - atrLen | 10 |
| EL-DayTraderFWScenario4 - arLen | 10 |
| EL-DayTraderFWScenario4 - useSmallRange | false |
| EL-DayTraderFWScenario4 - smallRngPer | .75 |
| EL-DayTraderFWScenario4 - useLargeRange | false |
| EL-DayTraderFWScenario4 - largeRngPer | 1.5 |
| EL-DayTraderFWScenario4 - useTrueRanges | true |
| EL-DayTraderFWScenario4 - whichDaysToTrade | "mtwrf" |
| EL-DayTraderFWScenario4 - wichDayOfWeekOptimizer | 0 |
| EL-DayTraderFWScenario4 - perATRStop | 0 |
| EL-DayTraderFWScenario4 - perRangeStop | 0 |
| EL-DayTraderFWScenario4 - perPriceStop | 0 |
| EL-DayTraderFWScenario4 - dollarStop | 0 |
| EL-DayTraderFWScenario4 - perATRProf | 0.75 |
| EL-DayTraderFWScenario4 - perRangeProf | 0 |
| EL-DayTraderFWScenario4 - perPriceProf | 0 |
| EL-DayTraderFWScenario4 - dollarProf | 0 |

Installation

Import ELDayTraderTool.ELD

This ELD contains the following Strategies:

EL-DayTraderFWScenario4 - the version of the Better Break Out strategy as described on www.easylangmastery.com.

BBO- the standalone strategy that is embedded into the EL-DayTraderFramework1.3

EL-DayTraderFramework1.3 - the base strategy that is to be used as a template

- Here the default parameters when you insert it into a chart with data one as an intraday “.D” and data two as a daily “.D”. Or if you insert any Stock data such as AAPL.
 - Data1: 5 minute or some minute bar of the form @ES.D or @ESM21.D or @NQ.D or AAPL
 - Data2: Daily bar of the same data as data: @ES.D or @ESM12.D or any stock data such as AAPL

```
// over ride with these userInptu values
input:      userInput1(0),
           userInput2(0);

// control number of buys and shorts and numshares
input:      maxBuysToday(1),
           maxShortsToday(1),
           numShares(1);

// use your own buyShortSetup or one of the predefined patterns
// use ++ pluses or -- minuses - no spaces
input:      buyShortSetUp(0),
           buyPattern("++"),
           shortPattern("--");

// use volatility break out
Input:      useVolBreakOut(false),
           orboBuyPer(.1),
           orboShortPer(.1);

// use x bar breka out
Input:      useXBarBreakOut(true),
           numMinBarsBreakOut(6);

// use time of day constraints
input: useTimeConstraints(true),
           startTime(930),startDelay(5),
           endTime(1430),endDelay(5),
           getOutTime(1600),getOutDelay(5);

//us NR days such as Crabel NR7
input: useNRDays(false),NRDays(7);
```

```

// volatility in terms of average (true) ranges
input: atrLen(10),arLen(10);

//use range compression on the last daily bar?
input: useSmallRange(false),smallRngPer(.75);

//use range expansion on the last daily bar
input: useLargeRange(false),largeRngPer(1.5);

// use true ranges for volatility calculations
input: useTrueRanges(true);

// which day of the week to trade
// m - Monday, t - Tuesdays, w - Wednesday, r - Thursday, f - Friday
// use whichDayOfWeekOptimizer from 1 to 5 to determine the day of week
// to trade
input: whichDaysToTrade("mtwrf"),
      whichDayOfWeekOptimizer(0);
// use a percent of ATR or AR or price as a stop or use a dollar stop or all three
input: perATRStop(.2),
      perRangeStop(0),
      perPriceStop(0),
      dollarStop(1000);

// use a percent of ATR or AR or price as a profit or use a dollar profit or all three
input: perATRProf(.25),
      perRangeProf(0),
      perPriceProf(0),
      dollarProf(1500);

```

Open Workspace - ELDayTraderTool



This workspace will contain 5 charts -

- AAPL - EL-DayTraderFramework1.3 - “BASIC” with optimized profit and loss

- ES.D - EL-DayTraderFramework1.3 - Scenario#1
- ES.D - EL-DayTraderFramework1.3 - Scenario#2
- ES.D - EL-DayTraderFramework1.3 - Scenario#3
- ES.D - EL-DayTraderFramework1.3 - Scenario#3 Combined
 - Buy Mon/Tues
 - Short Mon/Thursday