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using WealthLab.Backtest;
using System;
using WealthLab.Core;
using WealthLab.Data;
using WealthLab.Indicators;
using System.Collections.Generic;

namespace WealthScript4
{
    public class ScoreStrategy : UserStrategyBase
    {
        public double ScoreIt(double val)
        {
            if (val > 0.05) return 1;
            if (val < -0.05) return 0;
            return 0.5;
        }

        public ScoreStrategy()
        {
            AddParameter("Days", ParameterType.Int32, 5, 5, 30, 5);
            AddParameter("Score", ParameterType.Double, 3, 1, 6, 1);
        }

        //create indicators and other objects here, this is executed prior to the main trading
loop
        public override void Initialize(BarHistory bars)
        {
            ind4 = new PSAR(bars,0.02,0.2);
            PlotIndicator(ind4, WLCOLOR.FromArgb(255,204,55,0), PlotStyle.Line);
            ind3 = new MACD(bars.Close,10,15);
            PlotIndicator(ind3, WLCOLOR.FromArgb(255,0,0,0), PlotStyle.Line);
            ind2 = new MACDHist(bars.Close,10,15,5);
            PlotIndicator(ind2, WLCOLOR.FromArgb(255,124,252,0),
PlotStyle.HistogramTwoColor);
            ind1 = new CCI(bars,10);
            PlotIndicator(ind1, WLCOLOR.FromArgb(255,124,252,0),
PlotStyle.HistogramTwoColor);
            int days = Parameters[0].AsInt;
            double scoreThreshold = Parameters[1].AsDouble;

            const int nLines = 5;
            TimeSeries[] reglines = new TimeSeries[nLines];
            TimeSeries[] regRoc = new TimeSeries[nLines];
            score = new TimeSeries(bars.DateTimes);

            WLCOLOR[] clr = new WLCOLOR[5] { WLCOLOR.Red, WLCOLOR.Blue,
WLCOLOR.Green, WLCOLOR.Fuchsia, WLCOLOR.Black };

            // Create and plot the series
            for (int n = 0; n < nLines; n++)

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    {
        reglines[n] = LR.Series(bars.Close, days);
        regRoc[n] = ROC.Series(reglines[n], 1); // 1-day rate of change
        days += 2;

        PlotTimeSeries(reglines[n], reglines[n].Description, "Price", clr[n],
PlotStyle.Line);
        PlotTimeSeries(regRoc[n], regRoc[n].Description, "rocPane", clr[n],
PlotStyle.Line);
    }

    // Now that we have the series let's create a score series
    for (int bar = 5; bar < bars.Count; bar++)
    {
        // calculate score
        double sum = 0;
        for (int n = 0; n < nLines; n++)
        {
            sum += ScoreIt(regRoc[n][bar]);
        }
        score[bar] = sum;
    }

    PlotTimeSeries(score, "score", "scorePane", WLCColor.Blue,
PlotStyle.Histogram);

    //calculate mean turnover (bars)

    turnover = bars.Close * bars.Volume;
    meanturnover = SMA.Series(turnover, 20);

    StartIndex = 3;
}

//execute the strategy rules here, this is executed once for each bar in the backtest
history
public override void Execute(BarHistory bars, int idx)
{
    if (!HasOpenPosition(bars, PositionType.Long))
    {
        //code your buy conditions here
        if (score[idx] + score[idx - 1] + score[idx - 2] >= (scoreThreshold + 6))
            PlaceTrade(bars, TransactionType.Buy,
OrderType.MarketClose);
    }
    else
    {
        //code your sell conditions here
        Position p = LastPosition;
        if (score[idx] + score[idx - 1] + score[idx - 2] < (scoreThreshold + 6))

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        ClosePosition(p, OrderType.MarketClose);
    }
}

//declare private variables below
int days;
double scoreThreshold;
TimeSeries score, turnover, meanturnover;
private IndicatorBase ind1;
private IndicatorBase ind2;
private IndicatorBase ind3;
private IndicatorBase ind4;
}
}
```