//@version=4

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study("Optimized Trend Tracker","OTT", overlay=true)

src = input(close, title="Source")

length=input(2, "OTT Period", minval=1)

percent=input(1.4, "OTT Percent", type=input.float, step=0.1, minval=0)

showsupport = input(title="Show Support Line?", type=input.bool, defval=true)

showsignalsk = input(title="Show Support Line Crossing Signals?", type=input.bool, defval=true)

showsignalsc = input(title="Show Price/OTT Crossing Signals?", type=input.bool, defval=false)

highlight = input(title="Show OTT Color Changes?", type=input.bool, defval=false)

showsignalsr = input(title="Show OTT Color Change Signals?", type=input.bool, defval=false)

highlighting = input(title="Highlighter On/Off ?", type=input.bool, defval=true)

mav = input(title="Moving Average Type", defval="VAR", options=["SMA", "EMA", "WMA", "TMA", "VAR", "WWMA", "ZLEMA", "TSF"])

Var\_Func(src,length)=>

valpha=2/(length+1)

vud1=src>src[1] ? src-src[1] : 0

vdd1=src<src[1] ? src[1]-src : 0

vUD=sum(vud1,9)

vDD=sum(vdd1,9)

vCMO=nz((vUD-vDD)/(vUD+vDD))

VAR=0.0

VAR:=nz(valpha\*abs(vCMO)\*src)+(1-valpha\*abs(vCMO))\*nz(VAR[1])

VAR=Var\_Func(src,length)

Wwma\_Func(src,length)=>

wwalpha = 1/ length

WWMA = 0.0

WWMA := wwalpha\*src + (1-wwalpha)\*nz(WWMA[1])

WWMA=Wwma\_Func(src,length)

Zlema\_Func(src,length)=>

zxLag = length/2==round(length/2) ? length/2 : (length - 1) / 2

zxEMAData = (src + (src - src[zxLag]))

ZLEMA = ema(zxEMAData, length)

ZLEMA=Zlema\_Func(src,length)

Tsf\_Func(src,length)=>

lrc = linreg(src, length, 0)

lrc1 = linreg(src,length,1)

lrs = (lrc-lrc1)

TSF = linreg(src, length, 0)+lrs

TSF=Tsf\_Func(src,length)

getMA(src, length) =>

ma = 0.0

if mav == "SMA"

ma := sma(src, length)

ma

if mav == "EMA"

ma := ema(src, length)

ma

if mav == "WMA"

ma := wma(src, length)

ma

if mav == "TMA"

ma := sma(sma(src, ceil(length / 2)), floor(length / 2) + 1)

ma

if mav == "VAR"

ma := VAR

ma

if mav == "WWMA"

ma := WWMA

ma

if mav == "ZLEMA"

ma := ZLEMA

ma

if mav == "TSF"

ma := TSF

ma

ma

MAvg=getMA(src, length)

fark=MAvg\*percent\*0.01

longStop = MAvg - fark

longStopPrev = nz(longStop[1], longStop)

longStop := MAvg > longStopPrev ? max(longStop, longStopPrev) : longStop

shortStop = MAvg + fark

shortStopPrev = nz(shortStop[1], shortStop)

shortStop := MAvg < shortStopPrev ? min(shortStop, shortStopPrev) : shortStop

dir = 1

dir := nz(dir[1], dir)

dir := dir == -1 and MAvg > shortStopPrev ? 1 : dir == 1 and MAvg < longStopPrev ? -1 : dir

MT = dir==1 ? longStop: shortStop

OTT=MAvg>MT ? MT\*(200+percent)/200 : MT\*(200-percent)/200

plot(showsupport ? MAvg : na, color=#0585E1, linewidth=2, title="Support Line")

OTTC = highlight ? OTT[2] > OTT[3] ? color.green : color.red : #B800D9

pALL=plot(nz(OTT[2]), color=OTTC, linewidth=2, title="OTT", transp=0)

alertcondition(cross(OTT[2], OTT[3]), title="Color ALARM", message="OTT Has Changed Color!")

alertcondition(crossover(OTT[2], OTT[3]), title="GREEN ALERT", message="OTT GREEN BUY SIGNAL!")

alertcondition(crossunder(OTT[2], OTT[3]), title="RED ALERT", message="OTT RED SELL SIGNAL!")

alertcondition(cross(MAvg, OTT[2]), title="Cross Alert", message="OTT - Support Line Crossing!")

alertcondition(crossover(MAvg, OTT[2]), title="Crossover Alarm", message="Support Line BUY SIGNAL!")

alertcondition(crossunder(MAvg, OTT[2]), title="Crossunder Alarm", message="Support Line SELL SIGNAL!")

alertcondition(cross(src, OTT[2]), title="Price Cross Alert", message="OTT - Price Crossing!")

alertcondition(crossover(src, OTT[2]), title="Price Crossover Alarm", message="PRICE OVER OTT - BUY SIGNAL!")

alertcondition(crossunder(src, OTT[2]), title="Price Crossunder Alarm", message="PRICE UNDER OTT - SELL SIGNAL!")

buySignalk = crossover(MAvg, OTT[2])

plotshape(buySignalk and showsignalsk ? OTT\*0.995 : na, title="Buy", text="Buy", location=location.absolute, style=shape.labelup, size=size.tiny, color=color.green, textcolor=color.white, transp=0)

sellSignallk = crossunder(MAvg, OTT[2])

plotshape(sellSignallk and showsignalsk ? OTT\*1.005 : na, title="Sell", text="Sell", location=location.absolute, style=shape.labeldown, size=size.tiny, color=color.red, textcolor=color.white, transp=0)

buySignalc = crossover(src, OTT[2])

plotshape(buySignalc and showsignalsc ? OTT\*0.995 : na, title="Buy", text="Buy", location=location.absolute, style=shape.labelup, size=size.tiny, color=color.green, textcolor=color.white, transp=0)

sellSignallc = crossunder(src, OTT[2])

plotshape(sellSignallc and showsignalsc ? OTT\*1.005 : na, title="Sell", text="Sell", location=location.absolute, style=shape.labeldown, size=size.tiny, color=color.red, textcolor=color.white, transp=0)

mPlot = plot(ohlc4, title="", style=plot.style\_circles, linewidth=0,display=display.none)

longFillColor = highlighting ? (MAvg>OTT ? color.green : na) : na

shortFillColor = highlighting ? (MAvg<OTT ? color.red : na) : na

fill(mPlot, pALL, title="UpTrend Highligter", color=longFillColor)

fill(mPlot, pALL, title="DownTrend Highligter", color=shortFillColor)

buySignalr = crossover(OTT[2], OTT[3])

plotshape(buySignalr and showsignalsr ? OTT\*0.995 : na, title="Buy", text="Buy", location=location.absolute, style=shape.labelup, size=size.tiny, color=color.green, textcolor=color.white, transp=0)

sellSignallr = crossunder(OTT[2], OTT[3])

plotshape(sellSignallr and showsignalsr ? OTT\*1.005 : na, title="Sell", text="Sell", location=location.absolute, style=shape.labeldown, size=size.tiny, color=color.red, textcolor=color.white, transp=0)