// This source code is subject to the terms of the Mozilla Public License 2.0 at https://mozilla.org/MPL/2.0/

// © vumanchu

//@version=4

// Thanks to dynausmaux for the code

// Thanks to falconCoin for https://www.tradingview.com/script/KVfgBvDd-Market-Cipher-B-Free-version-with-Buy-and-sell/ inspired me to start this.

// Thanks to LazyBear for WaveTrend Oscillator https://www.tradingview.com/script/2KE8wTuF-Indicator-WaveTrend-Oscillator-WT/

// Thanks to RicardoSantos for https://www.tradingview.com/script/3oeDh0Yq-RS-Price-Divergence-Detector-V2/

// Thanks to LucemAnb for Plain Stochastic Divergence https://www.tradingview.com/script/FCUgF8ag-Plain-Stochastic-Divergence/

// Thanks to andreholanda73 for MFI+RSI Area https://www.tradingview.com/script/UlGZzUAr/

// I especially want to thank TradingView for its platform that facilitates development and learning.

//

// CIRCLES & TRIANGLES:

// - LITTLE CIRCLE: They appear at all WaveTrend wave crossings.

// - GREEN CIRCLE: The wavetrend waves are at the oversold level and have crossed up (bullish).

// - RED CIRCLE: The wavetrend waves are at the overbought level and have crossed down (bearish).

// - GOLD/ORANGE CIRCLE: When RSI is below 20, WaveTrend waves are below or equal to -80 and have crossed up after good bullish divergence (DONT BUY WHEN GOLD CIRCLE APPEAR).

// - None of these circles are certain signs to trade. It is only information that can help you.

// - PURPLE TRIANGLE: Appear when a bullish or bearish divergence is formed and WaveTrend waves crosses at overbought and oversold points.

//

// NOTES:

// - I am not an expert trader or know how to program pine script as such, in fact it is my first indicator only to study and all the code is copied and modified from other codes that are published in TradingView.

// - I am very grateful to the entire TV community that publishes codes so that other newbies like me can learn and present their results. This is an attempt to imitate Market Cipher B.

// - Settings by default are for 4h timeframe, divergences are more stronger and accurate. Haven't tested in all timeframes, only 2h and 4h.

// - If you get an interesting result in other timeframes I would be very grateful if you would comment your configuration to implement it or at least check it.

//

// CONTRIBUTIONS:

// - Tip/Idea: Add higher timeframe analysis for bearish/bullish patterns at the current timeframe.

// + Bearish/Bullish FLAG:

// - MFI+RSI Area are RED (Below 0).

// - Wavetrend waves are above 0 and crosses down.

// - VWAP Area are below 0 on higher timeframe.

// - This pattern reversed becomes bullish.

// - Tip/Idea: Check the last heikinashi candle from 2 higher timeframe

// + Bearish/Bullish DIAMOND:

// - HT Candle is red

// - WT > 0 and crossed down

study(title = 'VuManChu B Divergences', shorttitle = 'VMC Cipher\_B\_Divergences')

// PARAMETERS {

// WaveTrend

wtShow = input(true, title = 'Show WaveTrend', type = input.bool)

wtBuyShow = input(true, title = 'Show Buy dots', type = input.bool)

wtGoldShow = input(true, title = 'Show Gold dots', type = input.bool)

wtSellShow = input(true, title = 'Show Sell dots', type = input.bool)

wtDivShow = input(true, title = 'Show Div. dots', type = input.bool)

vwapShow = input(true, title = 'Show Fast WT', type = input.bool)

wtChannelLen = input(9, title = 'WT Channel Length', type = input.integer)

wtAverageLen = input(12, title = 'WT Average Length', type = input.integer)

wtMASource = input(hlc3, title = 'WT MA Source', type = input.source)

wtMALen = input(3, title = 'WT MA Length', type = input.integer)

// WaveTrend Overbought & Oversold lines

obLevel = input(53, title = 'WT Overbought Level 1', type = input.integer)

obLevel2 = input(60, title = 'WT Overbought Level 2', type = input.integer)

obLevel3 = input(100, title = 'WT Overbought Level 3', type = input.integer)

osLevel = input(-53, title = 'WT Oversold Level 1', type = input.integer)

osLevel2 = input(-60, title = 'WT Oversold Level 2', type = input.integer)

osLevel3 = input(-75, title = 'WT Oversold Level 3', type = input.integer)

// Divergence WT

wtShowDiv = input(true, title = 'Show WT Regular Divergences', type = input.bool)

wtShowHiddenDiv = input(false, title = 'Show WT Hidden Divergences', type = input.bool)

showHiddenDiv\_nl = input(true, title = 'Not apply OB/OS Limits on Hidden Divergences', type = input.bool)

wtDivOBLevel = input(45, title = 'WT Bearish Divergence min', type = input.integer)

wtDivOSLevel = input(-65, title = 'WT Bullish Divergence min', type = input.integer)

// Divergence extra range

wtDivOBLevel\_addshow = input(true, title = 'Show 2nd WT Regular Divergences', type = input.bool)

wtDivOBLevel\_add = input(15, title = 'WT 2nd Bearish Divergence', type = input.integer)

wtDivOSLevel\_add = input(-40, title = 'WT 2nd Bullish Divergence 15 min', type = input.integer)

// RSI+MFI

rsiMFIShow = input(true, title = 'Show MFI', type = input.bool)

rsiMFIperiod = input(60,title = 'MFI Period', type = input.integer)

rsiMFIMultiplier = input(150, title = 'MFI Area multiplier', type = input.float)

rsiMFIPosY = input(2.5, title = 'MFI Area Y Pos', type = input.float)

// RSI

rsiShow = input(false, title = 'Show RSI', type = input.bool)

rsiSRC = input(close, title = 'RSI Source', type = input.source)

rsiLen = input(14, title = 'RSI Length', type = input.integer)

rsiOversold = input(30, title = 'RSI Oversold', minval = 50, maxval = 100, type = input.integer)

rsiOverbought = input(60, title = 'RSI Overbought', minval = 0, maxval = 50, type = input.integer)

// Divergence RSI

rsiShowDiv = input(false, title = 'Show RSI Regular Divergences', type = input.bool)

rsiShowHiddenDiv = input(false, title = 'Show RSI Hidden Divergences', type = input.bool)

rsiDivOBLevel = input(60, title = 'RSI Bearish Divergence min', type = input.integer)

rsiDivOSLevel = input(30, title = 'RSI Bullish Divergence min', type = input.integer)

// RSI Stochastic

stochShow = input(true, title = 'Show Stochastic RSI', type = input.bool)

stochUseLog = input(true, title=' Use Log?', type = input.bool)

stochAvg = input(false, title='Use Average of both K & D', type = input.bool)

stochSRC = input(close, title = 'Stochastic RSI Source', type = input.source)

stochLen = input(14, title = 'Stochastic RSI Length', type = input.integer)

stochRsiLen = input(14, title = 'RSI Length ', type = input.integer)

stochKSmooth = input(3, title = 'Stochastic RSI K Smooth', type = input.integer)

stochDSmooth = input(3, title = 'Stochastic RSI D Smooth', type = input.integer)

// Divergence stoch

stochShowDiv = input(false, title = 'Show Stoch Regular Divergences', type = input.bool)

stochShowHiddenDiv = input(false, title = 'Show Stoch Hidden Divergences', type = input.bool)

// Schaff Trend Cycle

tcLine = input(false, title="Show Schaff TC line", type=input.bool)

tcSRC = input(close, title = 'Schaff TC Source', type = input.source)

tclength = input(10, title="Schaff TC", type=input.integer)

tcfastLength = input(23, title="Schaff TC Fast Lenght", type=input.integer)

tcslowLength = input(50, title="Schaff TC Slow Length", type=input.integer)

tcfactor = input(0.5, title="Schaff TC Factor", type=input.float)

// Sommi Flag

sommiFlagShow = input(false, title = 'Show Sommi flag', type = input.bool)

sommiShowVwap = input(false, title = 'Show Sommi F. Wave', type = input.bool)

sommiVwapTF = input('720', title = 'Sommi F. Wave timeframe', type = input.string)

sommiVwapBearLevel = input(0, title = 'F. Wave Bear Level (less than)', type = input.integer)

sommiVwapBullLevel = input(0, title = 'F. Wave Bull Level (more than)', type = input.integer)

soomiFlagWTBearLevel = input(0, title = 'WT Bear Level (more than)', type = input.integer)

soomiFlagWTBullLevel = input(0, title = 'WT Bull Level (less than)', type = input.integer)

soomiRSIMFIBearLevel = input(0, title = 'Money flow Bear Level (less than)', type = input.integer)

soomiRSIMFIBullLevel = input(0, title = 'Money flow Bull Level (more than)', type = input.integer)

// Sommi Diamond

sommiDiamondShow = input(false, title = 'Show Sommi diamond', type = input.bool)

sommiHTCRes = input('60', title = 'HTF Candle Res. 1', type = input.string)

sommiHTCRes2 = input('240', title = 'HTF Candle Res. 2', type = input.string)

soomiDiamondWTBearLevel = input(0, title = 'WT Bear Level (More than)', type = input.integer)

soomiDiamondWTBullLevel = input(0, title = 'WT Bull Level (Less than)', type = input.integer)

// macd Colors

macdWTColorsShow = input(false, title = 'Show MACD Colors', type = input.bool)

macdWTColorsTF = input('240', title = 'MACD Colors MACD TF', type = input.string)

darkMode = input(false, title = 'Dark mode', type = input.bool)

// Colors

colorRed = #ff0000

colorPurple = #e600e6

colorGreen = #3fff00

colorOrange = #e2a400

colorYellow = #ffe500

colorWhite = #ffffff

colorPink = #ff00f0

colorBluelight = #31c0ff

colorWT1 = #90caf9

colorWT2 = #0d47a1

colorWT2\_ = #131722

colormacdWT1a = #4caf58

colormacdWT1b = #af4c4c

colormacdWT1c = #7ee57e

colormacdWT1d = #ff3535

colormacdWT2a = #305630

colormacdWT2b = #310101

colormacdWT2c = #132213

colormacdWT2d = #770000

// } PARAMETERS

// FUNCTIONS {

// Divergences

f\_top\_fractal(src) => src[4] < src[2] and src[3] < src[2] and src[2] > src[1] and src[2] > src[0]

f\_bot\_fractal(src) => src[4] > src[2] and src[3] > src[2] and src[2] < src[1] and src[2] < src[0]

f\_fractalize(src) => f\_top\_fractal(src) ? 1 : f\_bot\_fractal(src) ? -1 : 0

f\_findDivs(src, topLimit, botLimit, useLimits) =>

 fractalTop = f\_fractalize(src) > 0 and (useLimits ? src[2] >= topLimit : true) ? src[2] : na

 fractalBot = f\_fractalize(src) < 0 and (useLimits ? src[2] <= botLimit : true) ? src[2] : na

 highPrev = valuewhen(fractalTop, src[2], 0)[2]

 highPrice = valuewhen(fractalTop, high[2], 0)[2]

 lowPrev = valuewhen(fractalBot, src[2], 0)[2]

 lowPrice = valuewhen(fractalBot, low[2], 0)[2]

 bearSignal = fractalTop and high[2] > highPrice and src[2] < highPrev

 bullSignal = fractalBot and low[2] < lowPrice and src[2] > lowPrev

 bearDivHidden = fractalTop and high[2] < highPrice and src[2] > highPrev

 bullDivHidden = fractalBot and low[2] > lowPrice and src[2] < lowPrev

 [fractalTop, fractalBot, lowPrev, bearSignal, bullSignal, bearDivHidden, bullDivHidden]

// RSI+MFI

f\_rsimfi(\_period, \_multiplier, \_tf) => security(syminfo.tickerid, \_tf, sma(((close - open) / (high - low)) \* \_multiplier, \_period) - rsiMFIPosY)

// WaveTrend

f\_wavetrend(src, chlen, avg, malen, tf) =>

 tfsrc = security(syminfo.tickerid, tf, src)

 esa = ema(tfsrc, chlen)

 de = ema(abs(tfsrc - esa), chlen)

 ci = (tfsrc - esa) / (0.015 \* de)

 wt1 = security(syminfo.tickerid, tf, ema(ci, avg))

 wt2 = security(syminfo.tickerid, tf, sma(wt1, malen))

 wtVwap = wt1 - wt2

 wtOversold = wt2 <= osLevel

 wtOverbought = wt2 >= obLevel

 wtCross = cross(wt1, wt2)

 wtCrossUp = wt2 - wt1 <= 0

 wtCrossDown = wt2 - wt1 >= 0

 wtCrosslast = cross(wt1[2], wt2[2])

 wtCrossUplast = wt2[2] - wt1[2] <= 0

 wtCrossDownlast = wt2[2] - wt1[2] >= 0

 [wt1, wt2, wtOversold, wtOverbought, wtCross, wtCrossUp, wtCrossDown, wtCrosslast, wtCrossUplast, wtCrossDownlast, wtVwap]

// Schaff Trend Cycle

f\_tc(src, length, fastLength, slowLength) =>

 ema1 = ema(src, fastLength)

 ema2 = ema(src, slowLength)

 macdVal = ema1 - ema2

 alpha = lowest(macdVal, length)

 beta = highest(macdVal, length) - alpha

 gamma = (macdVal - alpha) / beta \* 100

 gamma := beta > 0 ? gamma : nz(gamma[1])

 delta = gamma

 delta := na(delta[1]) ? delta : delta[1] + tcfactor \* (gamma - delta[1])

 epsilon = lowest(delta, length)

 zeta = highest(delta, length) - epsilon

 eta = (delta - epsilon) / zeta \* 100

 eta := zeta > 0 ? eta : nz(eta[1])

 stcReturn = eta

 stcReturn := na(stcReturn[1]) ? stcReturn : stcReturn[1] + tcfactor \* (eta - stcReturn[1])

 stcReturn

// Stochastic RSI

f\_stochrsi(\_src, \_stochlen, \_rsilen, \_smoothk, \_smoothd, \_log, \_avg) =>

 src = \_log ? log(\_src) : \_src

 rsi = rsi(src, \_rsilen)

 kk = sma(stoch(rsi, rsi, rsi, \_stochlen), \_smoothk)

 d1 = sma(kk, \_smoothd)

 avg\_1 = avg(kk, d1)

 k = \_avg ? avg\_1 : kk

 [k, d1]

// MACD

f\_macd(src, fastlen, slowlen, sigsmooth, tf) =>

 fast\_ma = security(syminfo.tickerid, tf, ema(src, fastlen))

 slow\_ma = security(syminfo.tickerid, tf, ema(src, slowlen))

 macd = fast\_ma - slow\_ma,

 signal = security(syminfo.tickerid, tf, sma(macd, sigsmooth))

 hist = macd - signal

 [macd, signal, hist]

// MACD Colors on WT

f\_macdWTColors(tf) =>

 hrsimfi = f\_rsimfi(rsiMFIperiod, rsiMFIMultiplier, tf)

 [macd, signal, hist] = f\_macd(close, 28, 42, 9, macdWTColorsTF)

 macdup = macd >= signal

 macddown = macd <= signal

 macdWT1Color = macdup ? hrsimfi > 0 ? colormacdWT1c : colormacdWT1a : macddown ? hrsimfi < 0 ? colormacdWT1d : colormacdWT1b : na

 macdWT2Color = macdup ? hrsimfi < 0 ? colormacdWT2c : colormacdWT2a : macddown ? hrsimfi < 0 ? colormacdWT2d : colormacdWT2b : na

 [macdWT1Color, macdWT2Color]

// Get higher timeframe candle

f\_getTFCandle(\_tf) =>

 \_open = security(heikinashi(syminfo.tickerid), \_tf, open, barmerge.gaps\_off, barmerge.lookahead\_on)

 \_close = security(heikinashi(syminfo.tickerid), \_tf, close, barmerge.gaps\_off, barmerge.lookahead\_on)

 \_high = security(heikinashi(syminfo.tickerid), \_tf, high, barmerge.gaps\_off, barmerge.lookahead\_on)

 \_low = security(heikinashi(syminfo.tickerid), \_tf, low, barmerge.gaps\_off, barmerge.lookahead\_on)

 hl2 = (\_high + \_low) / 2.0

 newBar = change(\_open)

 candleBodyDir = \_close > \_open

 [candleBodyDir, newBar]

// Sommi flag

f\_findSommiFlag(tf, wt1, wt2, rsimfi, wtCross, wtCrossUp, wtCrossDown) =>

 [hwt1, hwt2, hwtOversold, hwtOverbought, hwtCross, hwtCrossUp, hwtCrossDown, hwtCrosslast, hwtCrossUplast, hwtCrossDownlast, hwtVwap] = f\_wavetrend(wtMASource, wtChannelLen, wtAverageLen, wtMALen, tf)

 bearPattern = rsimfi < soomiRSIMFIBearLevel and

 wt2 > soomiFlagWTBearLevel and

 wtCross and

 wtCrossDown and

 hwtVwap < sommiVwapBearLevel

 bullPattern = rsimfi > soomiRSIMFIBullLevel and

 wt2 < soomiFlagWTBullLevel and

 wtCross and

 wtCrossUp and

 hwtVwap > sommiVwapBullLevel

 [bearPattern, bullPattern, hwtVwap]

f\_findSommiDiamond(tf, tf2, wt1, wt2, wtCross, wtCrossUp, wtCrossDown) =>

 [candleBodyDir, newBar] = f\_getTFCandle(tf)

 [candleBodyDir2, newBar2] = f\_getTFCandle(tf2)

 bearPattern = wt2 >= soomiDiamondWTBearLevel and

 wtCross and

 wtCrossDown and

 not candleBodyDir and

 not candleBodyDir2

 bullPattern = wt2 <= soomiDiamondWTBullLevel and

 wtCross and

 wtCrossUp and

 candleBodyDir and

 candleBodyDir2

 [bearPattern, bullPattern]

// } FUNCTIONS

// CALCULATE INDICATORS {

// RSI

rsi = rsi(rsiSRC, rsiLen)

rsiColor = rsi <= rsiOversold ? colorGreen : rsi >= rsiOverbought ? colorRed : colorPurple

// RSI + MFI Area

rsiMFI = f\_rsimfi(rsiMFIperiod, rsiMFIMultiplier, timeframe.period)

rsiMFIColor = rsiMFI > 0 ? #3ee145 : #ff3d2e

// Calculates WaveTrend

[wt1, wt2, wtOversold, wtOverbought, wtCross, wtCrossUp, wtCrossDown, wtCross\_last, wtCrossUp\_last, wtCrossDown\_last, wtVwap] = f\_wavetrend(wtMASource, wtChannelLen, wtAverageLen, wtMALen, timeframe.period)

// Stochastic RSI

[stochK, stochD] = f\_stochrsi(stochSRC, stochLen, stochRsiLen, stochKSmooth, stochDSmooth, stochUseLog, stochAvg)

// Schaff Trend Cycle

tcVal = f\_tc(tcSRC, tclength, tcfastLength, tcslowLength)

// Sommi flag

[sommiBearish, sommiBullish, hvwap] = f\_findSommiFlag(sommiVwapTF, wt1, wt2, rsiMFI, wtCross, wtCrossUp, wtCrossDown)

//Sommi diamond

[sommiBearishDiamond, sommiBullishDiamond] = f\_findSommiDiamond(sommiHTCRes, sommiHTCRes2, wt1, wt2, wtCross, wtCrossUp, wtCrossDown)

// macd colors

[macdWT1Color, macdWT2Color] = f\_macdWTColors(macdWTColorsTF)

// WT Divergences

[wtFractalTop, wtFractalBot, wtLow\_prev, wtBearDiv, wtBullDiv, wtBearDivHidden, wtBullDivHidden] = f\_findDivs(wt2, wtDivOBLevel, wtDivOSLevel, true)

[wtFractalTop\_add, wtFractalBot\_add, wtLow\_prev\_add, wtBearDiv\_add, wtBullDiv\_add, wtBearDivHidden\_add, wtBullDivHidden\_add] = f\_findDivs(wt2, wtDivOBLevel\_add, wtDivOSLevel\_add, true)

[wtFractalTop\_nl, wtFractalBot\_nl, wtLow\_prev\_nl, wtBearDiv\_nl, wtBullDiv\_nl, wtBearDivHidden\_nl, wtBullDivHidden\_nl] = f\_findDivs(wt2, 0, 0, false)

wtBearDivHidden\_ = showHiddenDiv\_nl ? wtBearDivHidden\_nl : wtBearDivHidden

wtBullDivHidden\_ = showHiddenDiv\_nl ? wtBullDivHidden\_nl : wtBullDivHidden

wtBearDivColor = (wtShowDiv and wtBearDiv) or (wtShowHiddenDiv and wtBearDivHidden\_) ? colorRed : na

wtBullDivColor = (wtShowDiv and wtBullDiv) or (wtShowHiddenDiv and wtBullDivHidden\_) ? colorGreen : na

wtBearDivColor\_add = (wtShowDiv and (wtDivOBLevel\_addshow and wtBearDiv\_add)) or (wtShowHiddenDiv and (wtDivOBLevel\_addshow and wtBearDivHidden\_add)) ? #9a0202 : na

wtBullDivColor\_add = (wtShowDiv and (wtDivOBLevel\_addshow and wtBullDiv\_add)) or (wtShowHiddenDiv and (wtDivOBLevel\_addshow and wtBullDivHidden\_add)) ? #1b5e20 : na

// RSI Divergences

[rsiFractalTop, rsiFractalBot, rsiLow\_prev, rsiBearDiv, rsiBullDiv, rsiBearDivHidden, rsiBullDivHidden] = f\_findDivs(rsi, rsiDivOBLevel, rsiDivOSLevel, true)

[rsiFractalTop\_nl, rsiFractalBot\_nl, rsiLow\_prev\_nl, rsiBearDiv\_nl, rsiBullDiv\_nl, rsiBearDivHidden\_nl, rsiBullDivHidden\_nl] = f\_findDivs(rsi, 0, 0, false)

rsiBearDivHidden\_ = showHiddenDiv\_nl ? rsiBearDivHidden\_nl : rsiBearDivHidden

rsiBullDivHidden\_ = showHiddenDiv\_nl ? rsiBullDivHidden\_nl : rsiBullDivHidden

rsiBearDivColor = (rsiShowDiv and rsiBearDiv) or (rsiShowHiddenDiv and rsiBearDivHidden\_) ? colorRed : na

rsiBullDivColor = (rsiShowDiv and rsiBullDiv) or (rsiShowHiddenDiv and rsiBullDivHidden\_) ? colorGreen : na

// Stoch Divergences

[stochFractalTop, stochFractalBot, stochLow\_prev, stochBearDiv, stochBullDiv, stochBearDivHidden, stochBullDivHidden] = f\_findDivs(stochK, 0, 0, false)

stochBearDivColor = (stochShowDiv and stochBearDiv) or (stochShowHiddenDiv and stochBearDivHidden) ? colorRed : na

stochBullDivColor = (stochShowDiv and stochBullDiv) or (stochShowHiddenDiv and stochBullDivHidden) ? colorGreen : na

// Small Circles WT Cross

signalColor = wt2 - wt1 > 0 ? color.red : color.lime

// Buy signal.

buySignal = wtCross and wtCrossUp and wtOversold

buySignalDiv = (wtShowDiv and wtBullDiv) or

 (wtShowDiv and wtBullDiv\_add) or

 (stochShowDiv and stochBullDiv) or

 (rsiShowDiv and rsiBullDiv)

buySignalDiv\_color = wtBullDiv ? colorGreen :

 wtBullDiv\_add ? color.new(colorGreen, 60) :

 rsiShowDiv ? colorGreen : na

// Sell signal

sellSignal = wtCross and wtCrossDown and wtOverbought

sellSignalDiv = (wtShowDiv and wtBearDiv) or

 (wtShowDiv and wtBearDiv\_add) or

 (stochShowDiv and stochBearDiv) or

 (rsiShowDiv and rsiBearDiv)

sellSignalDiv\_color = wtBearDiv ? colorRed :

 wtBearDiv\_add ? color.new(colorRed, 60) :

 rsiBearDiv ? colorRed : na

// Gold Buy

lastRsi = valuewhen(wtFractalBot, rsi[2], 0)[2]

wtGoldBuy = ((wtShowDiv and wtBullDiv) or (rsiShowDiv and rsiBullDiv)) and

 wtLow\_prev <= osLevel3 and

 wt2 > osLevel3 and

 wtLow\_prev - wt2 <= -5 and

 lastRsi < 30

// } CALCULATE INDICATORS

// DRAW {

bgcolor(darkMode ? color.new(#000000, 80) : na)

zLine = plot(0, color = color.new(colorWhite, 50))

// MFI BAR

rsiMfiBarTopLine = plot(rsiMFIShow ? -95 : na, title = 'MFI Bar TOP Line', transp = 100)

rsiMfiBarBottomLine = plot(rsiMFIShow ? -99 : na, title = 'MFI Bar BOTTOM Line', transp = 100)

fill(rsiMfiBarTopLine, rsiMfiBarBottomLine, title = 'MFI Bar Colors', color = rsiMFIColor, transp = 75)

// WT Areas

plot(wtShow ? wt1 : na, style = plot.style\_area, title = 'WT Wave 1', color = macdWTColorsShow ? macdWT1Color : colorWT1, transp = 0)

plot(wtShow ? wt2 : na, style = plot.style\_area, title = 'WT Wave 2', color = macdWTColorsShow ? macdWT2Color : darkMode ? colorWT2\_ : colorWT2 , transp = 20)

// VWAP

plot(vwapShow ? wtVwap : na, title = 'VWAP', color = colorYellow, style = plot.style\_area, linewidth = 2, transp = 45)

// MFI AREA

rsiMFIplot = plot(rsiMFIShow ? rsiMFI: na, title = 'RSI+MFI Area', color = rsiMFIColor, transp = 20)

fill(rsiMFIplot, zLine, rsiMFIColor, transp = 40)

// WT Div

plot(series = wtFractalTop ? wt2[2] : na, title = 'WT Bearish Divergence', color = wtBearDivColor, linewidth = 2, offset = -2)

plot(series = wtFractalBot ? wt2[2] : na, title = 'WT Bullish Divergence', color = wtBullDivColor, linewidth = 2, offset = -2)

// WT 2nd Div

plot(series = wtFractalTop\_add ? wt2[2] : na, title = 'WT 2nd Bearish Divergence', color = wtBearDivColor\_add, linewidth = 2, offset = -2)

plot(series = wtFractalBot\_add ? wt2[2] : na, title = 'WT 2nd Bullish Divergence', color = wtBullDivColor\_add, linewidth = 2, offset = -2)

// RSI

plot(rsiShow ? rsi : na, title = 'RSI', color = rsiColor, linewidth = 2, transp = 25)

// RSI Div

plot(series = rsiFractalTop ? rsi[2] : na, title='RSI Bearish Divergence', color = rsiBearDivColor, linewidth = 1, offset = -2)

plot(series = rsiFractalBot ? rsi[2] : na, title='RSI Bullish Divergence', color = rsiBullDivColor, linewidth = 1, offset = -2)

// Stochastic RSI

stochKplot = plot(stochShow ? stochK : na, title = 'Stoch K', color = color.new(#21baf3, 0), linewidth = 2)

stochDplot = plot(stochShow ? stochD : na, title = 'Stoch D', color = color.new(#673ab7, 60), linewidth = 1)

stochFillColor = stochK >= stochD ? color.new(#21baf3, 75) : color.new(#673ab7, 60)

fill(stochKplot, stochDplot, title='KD Fill', color=stochFillColor)

// Stoch Div

plot(series = stochFractalTop ? stochK[2] : na, title='Stoch Bearish Divergence', color = stochBearDivColor, linewidth = 1, offset = -2)

plot(series = stochFractalBot ? stochK[2] : na, title='Stoch Bullish Divergence', color = stochBullDivColor, linewidth = 1, offset = -2)

// Schaff Trend Cycle

plot(tcLine ? tcVal : na, color = color.new(#673ab7, 25), linewidth = 2, title = "Schaff Trend Cycle 1")

plot(tcLine ? tcVal : na, color = color.new(colorWhite, 50), linewidth = 1, title = "Schaff Trend Cycle 2")

// Draw Overbought & Oversold lines

//plot(obLevel, title = 'Over Bought Level 1', color = colorWhite, linewidth = 1, style = plot.style\_circles, transp = 85)

plot(obLevel2, title = 'Over Bought Level 2', color = colorWhite, linewidth = 1, style = plot.style\_stepline, transp = 85)

plot(obLevel3, title = 'Over Bought Level 3', color = colorWhite, linewidth = 1, style = plot.style\_circles, transp = 95)

//plot(osLevel, title = 'Over Sold Level 1', color = colorWhite, linewidth = 1, style = plot.style\_circles, transp = 85)

plot(osLevel2, title = 'Over Sold Level 2', color = colorWhite, linewidth = 1, style = plot.style\_stepline, transp = 85)

// Sommi flag

plotchar(sommiFlagShow and sommiBearish ? 108 : na, title = 'Sommi bearish flag', char='⚑', color = colorPink, location = location.absolute, size = size.tiny, transp = 0)

plotchar(sommiFlagShow and sommiBullish ? -108 : na, title = 'Sommi bullish flag', char='⚑', color = colorBluelight, location = location.absolute, size = size.tiny, transp = 0)

plot(sommiShowVwap ? ema(hvwap, 3) : na, title = 'Sommi higher VWAP', color = colorYellow, linewidth = 2, style = plot.style\_line, transp = 15)

// Sommi diamond

plotchar(sommiDiamondShow and sommiBearishDiamond ? 108 : na, title = 'Sommi bearish diamond', char='◆', color = colorPink, location = location.absolute, size = size.tiny, transp = 0)

plotchar(sommiDiamondShow and sommiBullishDiamond ? -108 : na, title = 'Sommi bullish diamond', char='◆', color = colorBluelight, location = location.absolute, size = size.tiny, transp = 0)

// Circles

plot(wtCross ? wt2 : na, title = 'Buy and sell circle', color = signalColor, style = plot.style\_circles, linewidth = 3, transp = 15)

plotchar(wtBuyShow and buySignal ? -107 : na, title = 'Buy circle', char='·', color = colorGreen, location = location.absolute, size = size.small, transp = 50)

plotchar(wtSellShow and sellSignal ? 105 : na , title = 'Sell circle', char='·', color = colorRed, location = location.absolute, size = size.small, transp = 50)

plotchar(wtDivShow and buySignalDiv ? -106 : na, title = 'Divergence buy circle', char='•', color = buySignalDiv\_color, location = location.absolute, size = size.small, offset = -2, transp = 15)

plotchar(wtDivShow and sellSignalDiv ? 106 : na, title = 'Divergence sell circle', char='•', color = sellSignalDiv\_color, location = location.absolute, size = size.small, offset = -2, transp = 15)

plotchar(wtGoldBuy and wtGoldShow ? -106 : na, title = 'Gold buy gold circle', char='•', color = colorOrange, location = location.absolute, size = size.small, offset = -2, transp = 15)

// } DRAW

// ALERTS {

// BUY

alertcondition(buySignal, 'Buy (Big green circle)', 'Green circle WaveTrend Oversold')

alertcondition(buySignalDiv, 'Buy (Big green circle + Div)', 'Buy & WT Bullish Divergence & WT Overbought')

alertcondition(wtGoldBuy, 'GOLD Buy (Big GOLDEN circle)', 'Green & GOLD circle WaveTrend Overbought')

alertcondition(sommiBullish or sommiBullishDiamond, 'Sommi bullish flag/diamond', 'Blue flag/diamond')

alertcondition(wtCross and wtCrossUp, 'Buy (Small green dot)', 'Buy small circle')

// SELL

alertcondition(sommiBearish or sommiBearishDiamond, 'Sommi bearish flag/diamond', 'Purple flag/diamond')

alertcondition(sellSignal, 'Sell (Big red circle)', 'Red Circle WaveTrend Overbought')

alertcondition(sellSignalDiv, 'Sell (Big red circle + Div)', 'Buy & WT Bearish Divergence & WT Overbought')

alertcondition(wtCross and wtCrossDown, 'Sell (Small red dot)', 'Sell small circle')

// } ALERTS