Instructions for using the DeskBot Builder

DeskBot is an add-on for the TSLab trading terminal (tslab.pro) and a logical continuation of simplifying the creation of trading strategies.

The main function of the DeskBot Strategy Builder is to quickly test and select the best classic trading strategies. This is, first of all, a tool for the analysis and analytics of strategies.

You can test and optimize strategies on almost any quotes and with different timeframes.

Historical quotes for backtesting can be taken either online by directly connecting to a broker or to an exchange. Or you can download quotes on the Internet.

It is important to correctly specify the start and end dates. Do not forget that futures that have expired and are no longer traded should be looked for in the archive category, and current active quotes are not in the archive category. Otherwise, nothing will be found.

It is also important not to specify too large a time range for a small timeframe. Since there are limits on the server and just an empty file will be returned. If you need quotes for a long period of data, then either search the Internet for ready-made data merging, or download quarterly data yourself and save it to one local text file.

In the TSLab terminal, open the Data Providers tab and the Add option.
Next, select the desired local file with a quote and upload it to the system.
Obviously, there cannot and cannot be an online status here, and it is also impossible in the normal trading mode, since we already have all the data and they are not loaded online. After that, it will be possible to use these quotes when testing social networks.
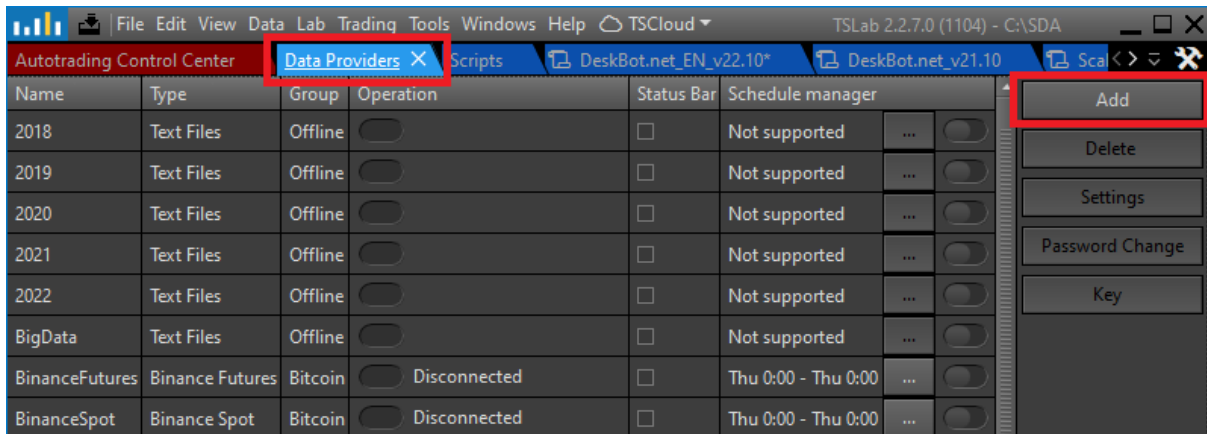
# Installing the DeskBot software in the TSLab terminal

After purchasing the robot, you should receive two files by mail: DeskBot.tscont and DeskBot.key

Save the files attached to the letter to your computer beforehand.

1. In the TSLab terminal, find the menu item Lab → Scripts
2. In the "Scripts" tab, click the Load Container button
3. Enter the text from the file with the .key extension into the window
4. Specify the path to the file with the extension .tscont
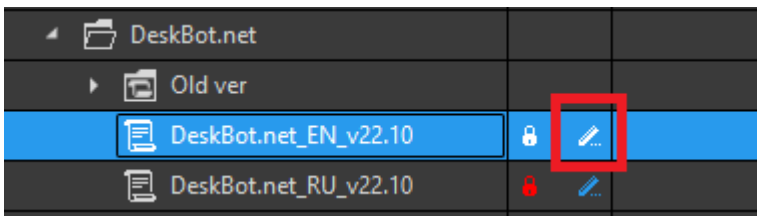5. Click Finish
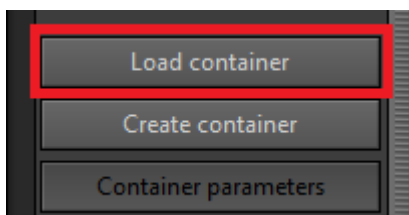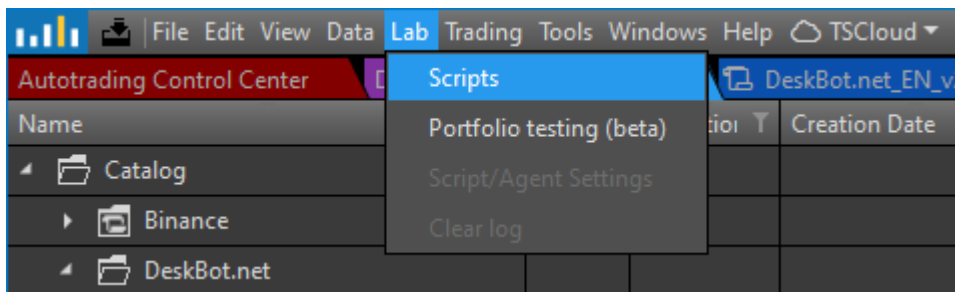
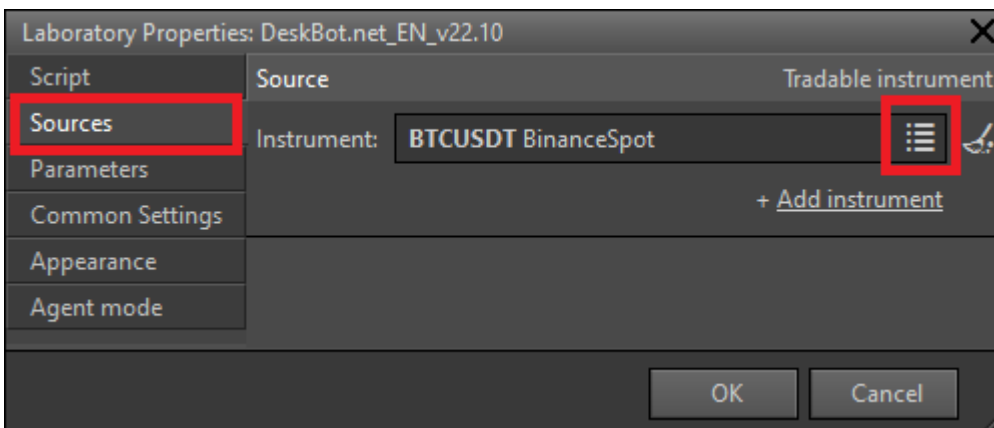A line with the name of the robot should appear in the directory.
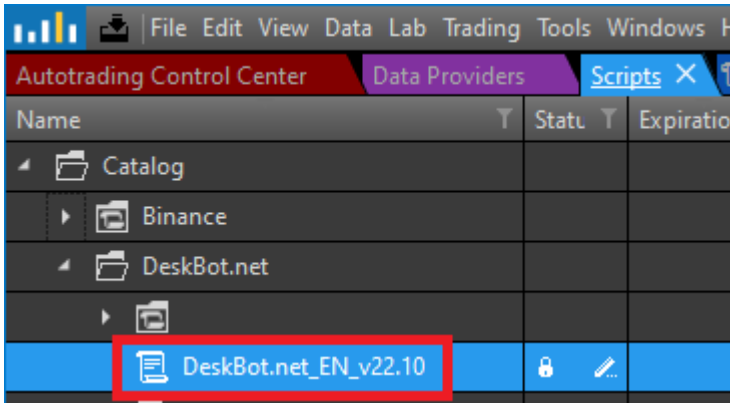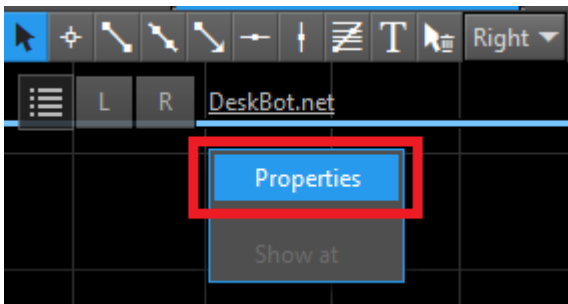
In the properties of the container, you need to select the financial instrument on which you will work.

Right-click to bring up the menu and click **Properties**.

Also, by right-clicking in the chart window, you can call the Container **Properties**.
Go to the **Sources** tab and click the "Select Tool" button.

Next, select the desired local file with quotes or online quotes.

If everything is done correctly, then candles/bars/quotes should appear on the chart.

Creating an Agent for the DeskBot container

An agent is needed for trading. This is the second copy of our object, which is intended for placing purchase and sale orders on the exchange.

You can test and optimize strategies without an **Agent**. But for the sake of completeness, let's dwell on this point.

Having selected the line with the name of our DeskBot container with the mouse, you need to click the **Add Agent button**. This button is at the bottom of the right menu.
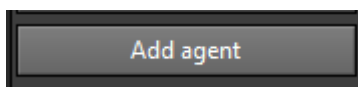
Here you need to select the financial instrument on which the trade will be conducted. These are not local quotes! Not a text file.
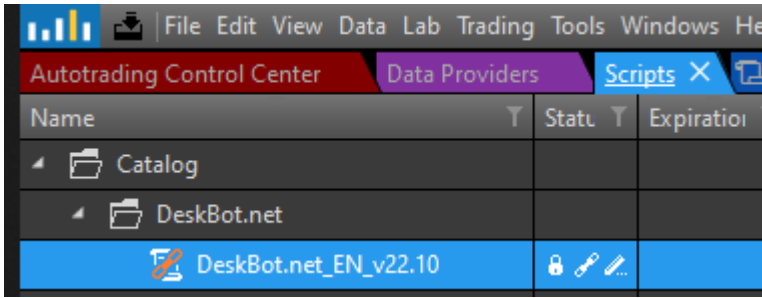
Let's choose, for example, BTC/USDT. To do this, you must already have a data provider for the Binance exchange connected.

How to connect a data provider to the TSLab terminal, see the instructions on the tslab.pro website
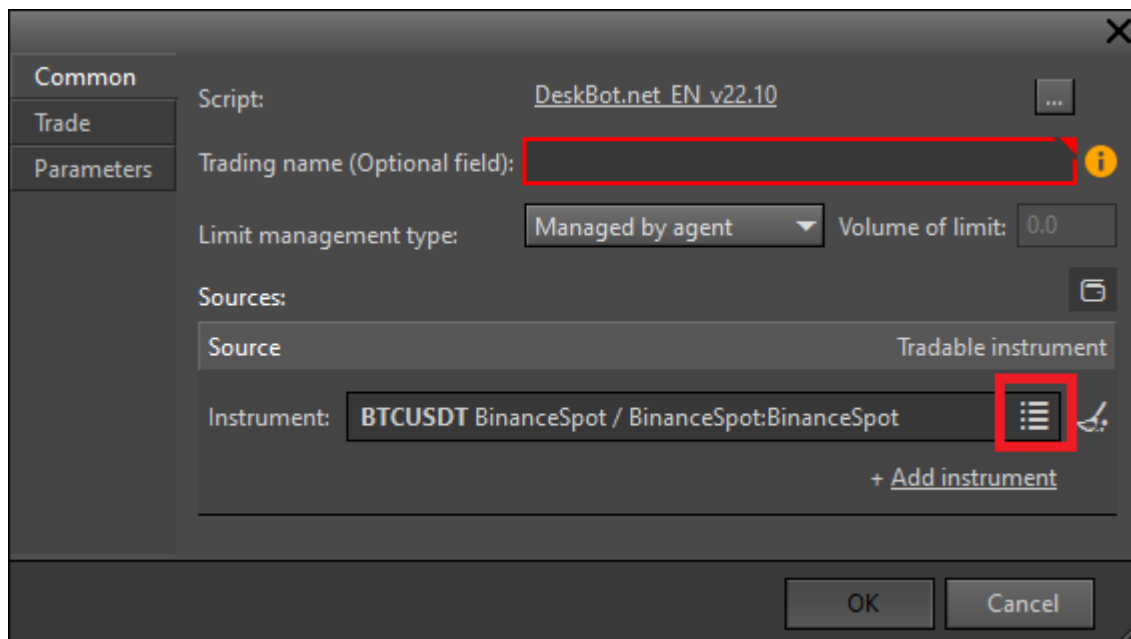
Press the OK button.

After that, a chain should appear on the icon. This means that an agent has been created for this script/container.

In the properties of the agent, you need to check the boxes Send **position entry and position exit immediately**. Otherwise, transactions will not be made.
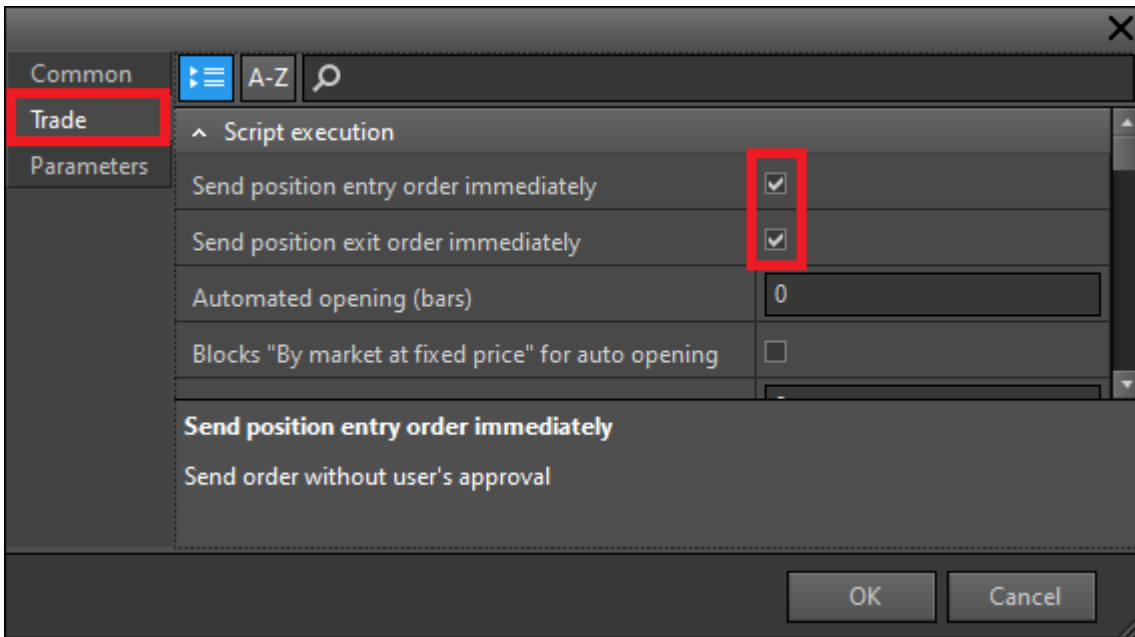
Or later in the properties of the **Agent mode**, you can also set these settings:
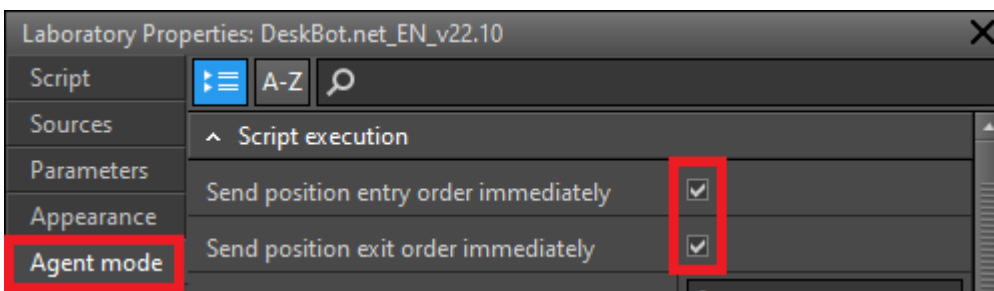
This is configured in the **Agents tab.**
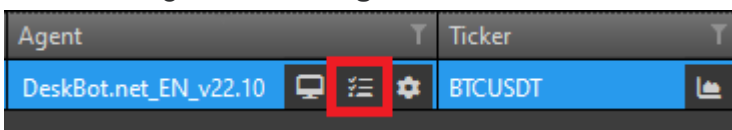
Additional information on agents (standard functionality of the terminal) can be found in the **TSLab beginner's guide https://doc.tslab.pro/tslab/v/eng/for-newbies/beginners-guide**.

Working with DeskBot Options

Date and time
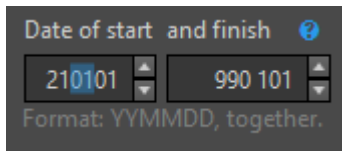
Here is the start date of trading from 2020, the month of January (highlighted in blue), the first day. And until the first of January 2099.

Quotes can be loaded earlier than the start date, but there will be no deals on them. This is a kind of filter within which transactions can be made.

Unfortunately, at the time of the development of this functionality, TSLab did not provide a more convenient mechanism for working with date and time, so we will set the date in digital format. When the calendar appears, we will update.

The start and end time of trading is configured in the same way.
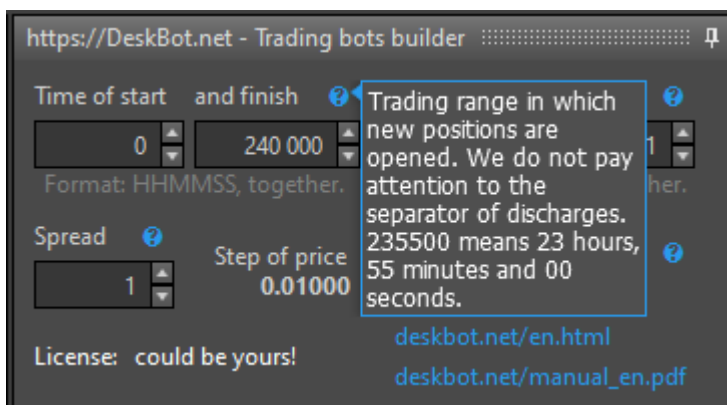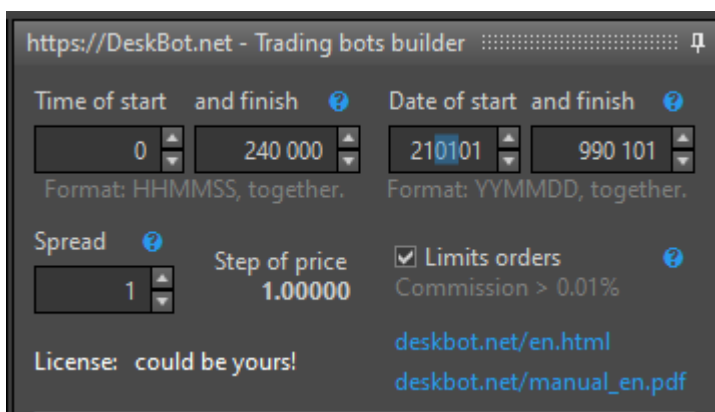
The price step is an information field to understand with what accuracy fixed take profit and stop losses can be set. **The minimum price** step is the smallest change in quotes

that can be available. On some instruments it is 10 points, on others 1 point, on others 0.001 points, or even 0.00001 points.

Spread - an offset from the current price for placing an order in the order book, but not immediately on a counter offer, not on the market. This parameter is relevant if the **Limit orders** option is enabled. Otherwise, orders will be placed on the market for instant execution. But here the trader loses on the spread and, possibly, on increased commissions for this type of orders. Check your tariff plan. Different brokers and different exchanges may have different conditions and it is impossible to take them all into account here. Moreover, they change over time.
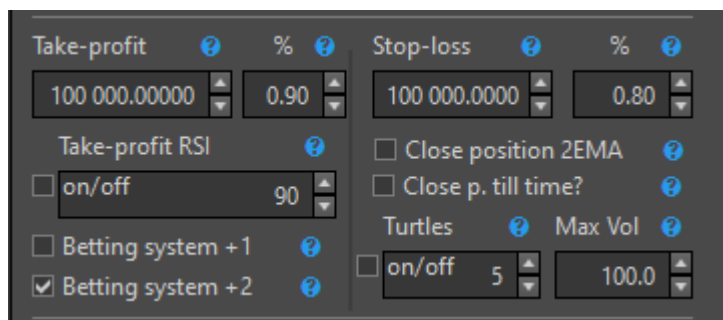
Take Profit and Stop Loss

Parameters are set in absolute values and in percent.
Take profit and **stop-loss** are measured in points (not in rubles, not in dollars, but in points). Each instrument has a value of one pip. Study the specification of a financial instrument and then you will know the amount of potential profit if the price passes X points.

Take profit in points — we take profit at a fixed value if the price has passed this path in points.
Take profit as a percentage, % — we take the profit at the specified value as a percentage. Percentage is calculated from the current price of the asset.
Stop-loss in points — we accept a loss at a fixed value if the price has passed this path in points.
Stop-loss as a percentage, % — accept the loss by the specified value as a percentage. Percentage is calculated from the current price of the asset.

You can set several conditions for opening a position and for closing at the same time. To which level the price reaches earlier, the condition will work first and only. It can be either a fixed take profit, or a take profit by interest, or a take profit by the RSI indicator, etc., on any signal that closes the position.

Take profit on the RSI indicator

Take profit on RSI. If set to 90, then when going long, the position will be closed as soon as the RSI reaches 90. When going short, the position will be closed when the RSI value is less than or equal to 10 (100-90). Any value greater than 100 disables this mode, since the RSI cannot be greater than 100.

Close 2EMA pose
Close the position at the reverse intersection of the EMA1 and EMA2 moving averages (Exponential Moving Average, Exponential Moving Averages).
This mode was added at the request of clients, but we recommend using it with extreme caution, since on a flat (in a sideways price movement) a position will be closed too often and sometimes at a loss.

Close pose for the night?
Close the position for the night at the finish time? Closing a position for no reason usually worsens the bottom line.
This setting is needed only if you leave the Constructor and want the position to be closed in the evening. As a one-time measure, this is quite acceptable. On a regular basis, probably not. At the very least, tests show a deterioration in profitability with this feature enabled.

Betting system +1
After a losing trade, we increase the position by 1. After a profitable trade, we start with the initial volume. 1, 2, 3, 4, 5, ...
This approach allows you to ultimately receive a profit on a larger volume than there were losses earlier on smaller volumes. Statistics show that with this approach, profitability increases.
The bottom line is that as the risk increases, so does the potential return. Everything is interconnected.

Betting system +2
We always trade from a volume of 1 lot. For example: 1, 2, 4, 6, 8, 10, 12, 14, ...
An even more risky system. Drawdowns will be deeper, but the potential profitability should be even greater.

Max. V
The maximum possible volume of a position being recruited. Risk limitation. In the case of a small deposit or to distribute the deposit among different instruments (it is not forbidden to use constructor clones and we do not set a limit on the number of copies in the license).
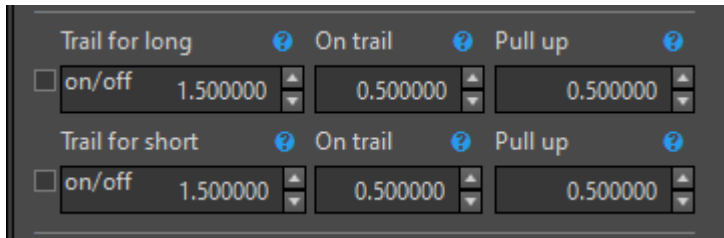
Turtle Strategy
DeskBot adds the classic Turtle strategy by the famous Richard Dennis.

The bottom line is that we trade on the breakdown of the price channel and close the position when the price returns to the price channel by the specified percentage. For example, the number 50 means the middle of the channel.

More detailed instructions for setting up this strategy are delivered to the buyer in a separate letter.

Follow-up take profit (trail)

You can enable **trail**:

Stop loss for **a trail for long**. Works only for limit orders. Default: 1.5%

Activation of the long trail when the specified value is reached. Default: 0.5%

Pull up stop for long by the specified value. Default: 0.5%

It is recommended to use the trail on trending instruments and in trend-following strategies. On a data flat, the approach will not be able to perform well.

Advice! If suddenly it is not clear how this or that parameter works, then you activate it and see how the system trades on the backtest. Then change the value of the parameter and again see how the transactions have changed. In practice, everything becomes much clearer and clearer. Last resort, there is technical support!

Direction of trade

Everything is quite simple here. The first checkbox **(long trading)** allows you to make purchases. The second **(short trading)** is sales. Of course, this is for opening a position. If a position is open, then, of course, a reverse transaction will be required to close it, and it will be completed regardless of whether the opposite checkbox is set or not. This functionality allows you to quickly evaluate how the strategy works only from long, only from short and together. Sometimes this is useful.

HIGH — HIGH
UPPER SHADOW / WICK
CLOSE → ← OPEN
REAL BODY
OPEN → LOWER SHADOW / WICK ← CLOSE
LOW — LOW

BULL MARKET — BEAR MARKET
STOCKS TRENDING UP — STOCKS TRENDING DOWN

Trading Strategies (Trend following):

-------------------- Trading Strategies ------------------------
Trend following
☐ 2EMA ❓   ☐ v2 ❓
☐ Bollinger ❓
☐ Parabolic ❓
☐ Breakdown ❓
☑ Rebound+filter ❓
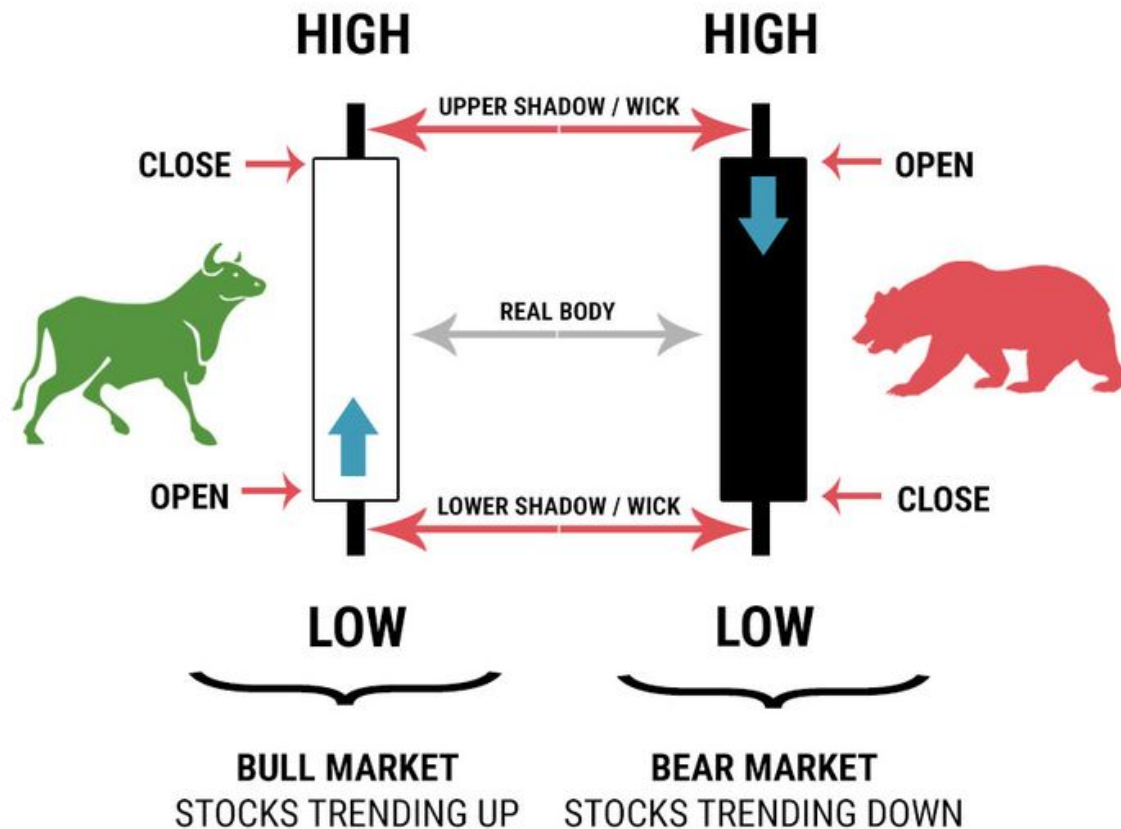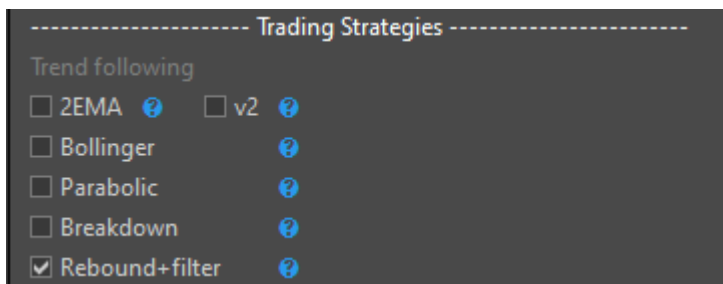
2EMA — The strategy is based on the intersection of two moving averages. If EMA1 crosses EMA2 from bottom to top, then open a long position. If the intersection is in the opposite direction, then close the position and open shorts.

v2 — The strategy is based on the intersection of two moving averages, WITHOUT a signal to close the position. If EMA1 crosses EMA2 from bottom to top, then open a long position. If the intersection is in the opposite direction, then we open short, provided that the position is zero.

Bollinger — Open long if the close of the candle (price) is greater than the upper Bollinger band. Short if the close is below the lower band. Revolutionary strategy.

Parabolic — Open long if the closing of the candle (price) is greater than the Parabolic. Short if the close is below the lower parabolic. Revolutionary strategy.

Breakdown — Open a long position if the candle closes above the Maximum indicator in X candles. Short if the close is less than the X Candles Low indicator.

Rebound+filfer — Trading strategy from the borders of the price channel. Trades are made only in the direction of the trend, according to the filter of two moving averages: EMA1 and EMA2.

Advice! In this case, you can also connect additional signals for opening and closing positions.
In this case, unique multi-channel strategies are obtained!
It is important not to combine trend-following and inverse-trend strategies. Otherwise, they will conflict over the direction of the position. Looking at the graph of a steadily declining yield curve, you will immediately understand everything.

Inverse trend:
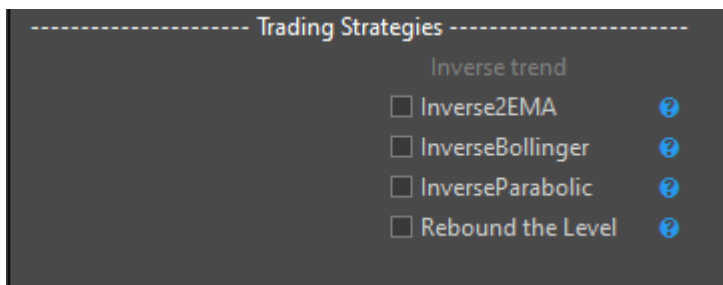
Inverse2EMA - The strategy is the opposite of the 2EMA trend strategy. We trade moving average crossovers against the trend.
Inverse Bollinger is the opposite of Bollinger. That is, long signals become short signals.
InverseParabolic - Reverse Parabolic Strategy
Rebound the level - Long if the candle closed below the Minimum indicator for X candles. Short if the close is higher than Max in X candles.
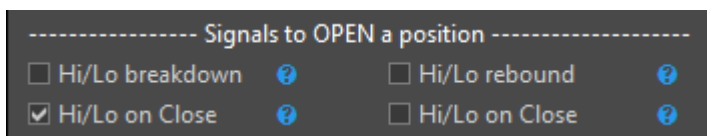
High/Low breakdown – Long: price closes higher Maximum for X candles on high (the maximum value of the price of the candle).

Short: close price below Low for X candles on low. The HighLow(X) parameter sets the number of candles.

High/Low on Close — Long: closing the price above Maximum for X candles . Short: closing the price below the Minimum for X candles on Close. The MinMaxClose(X) parameter sets the number of candles.

 High/Low rebound – Long: price closes below the Minimum for X candles on low. Short: closing price higher High in X candles on high. The HighLow(X) parameter sets the number of candles.

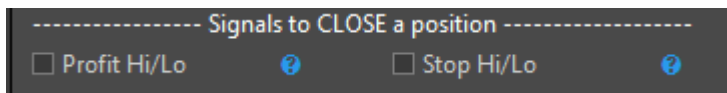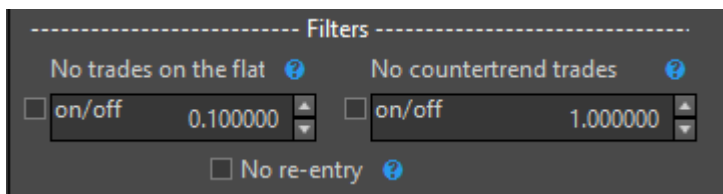**High/Low on Close** — Long: closing price below the Minimum for X candles on Close. Short: closing the price higher High for X candles on Close. The MinMaxClose(X) parameter sets the number of candles.

---------------- Signals to CLOSE a position ------------------
☐ Profit Hi/Lo   ❷   ☐ Stop Hi/Lo   ❷

Profit High/Low — Long is closed when the high is updated for X. Short is closed when the low is updated for X.

Stop High/Low — Long is closed when the Minimum level is broken for X. Short is closed above the Maximum level for X.

------------------------ Filters ----------------------------
No trades on the flat ❷   No countertrend trades   ❷
☐ on/off   0.100000 ▲▼   ☐ on/off   1.000000 ▲▼
          ☐ No re-entry ❷

From trades on the flat — Filter from trades on the flat. If the difference between EMA1 and EMA2 in absolute value (Delta) is less than the specified value, then the position is not opened. The filter applies to all strategies. Zero disables the filter.

From trades against the trend - We trade long only if EMA1 is greater than EMA2 by the specified value. We trade short only if EMA1 is less than EMA2 by the specified value. Zero disables the filter.

From re-entry — After a stop from a long, a ban on long. We are waiting for a short signal. After the stop from the short, only long is allowed.
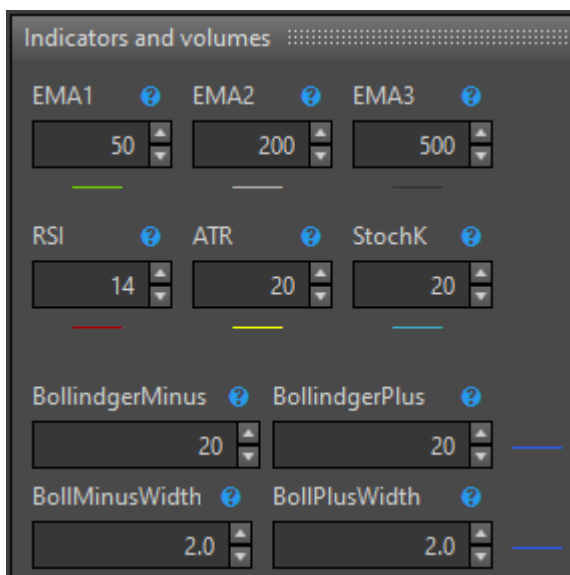
Indicators

Indicators allow you to interpret price action. With the help of them, it is much easier to "explain" to the computer what exactly is happening in the market: whether there is a trend or not, whether the market is growing or not. Indicators do not predict the future, but help predict it.

If you are into trading, you are most likely already familiar with the most popular classic indicators.

Here we set their parameters. Namely, we set the value of the periods (how many candles/bars to take into account) of the indicators.

If you set too large values, then the indicators will be late in issuing signals to open and close positions, since they will be greatly influenced by outdated information. And if you set too small values of the periods of indicators, then nothing good will come of it either. Signals will be premature. There will be many. And most of them will be false. Everything needs a golden mean!

EMA - Exponential Moving Averages - are indicators by which the system determines the direction of the trend.

The values 50, 200 and 250 are indicator periods (moving averages), that is, the first smoothed curve is based on the average of the last 50 candles/bars, the second one is based on the last 200 candles/bars, and the third one is based on 250 candles/bars.

If the fast EMA(50) is above the slow EMA(200), then we believe that the trend is growing, since the current price is above its average previous values. And the priority will be trade from the long, from purchases. For the short, the situation is the opposite, one might say, a mirror image.

RSI - Relative Market Strength Index. It is based on the ratio of the average price increase for the period to the average price decrease for the period. If the indicator is

above 50, then the price has increased on average and vice versa. The range of possible values is from 0 to 100.

ATR — Average true range. It shows volatility and can tell you about the current state of the trend and activity in the market. ATR is at low values when the market is calm and a flat is forming. After a long sideways trend, a powerful trend (downward or upward) can be expected. Then the indicator begins to rise, indicating an increase in volatility.

Stochastic — Stochastic Oscillator is a popular technical indicator not only for professional traders, but also for beginners. Stochastic is able to clearly determine the moment of a trend reversal and earn even on short-term corrections against the trend in the market. The indicator displays the percentage ratio of the closing price and the maximum extremes for a certain period of time. Stochastic allows you to determine when a trend reversal will begin and tell you exactly at what moment you should open a deal. The essence of the indicator:
Overbought - from 80 to 100;
Oversold - from 0 to 20.

Bollinger Bands — Bands or Bollinger Bands. Shows on the chart the direction and range of price fluctuations. Based on the current price corridor, it is possible to predict the further movement of quotations.

Parabolic Sar — it is a trend indicator. It is designed to tell the trader where to exit the position. Sar is an abbreviation for "Stop and revers", and literally translates as "Stop and reverse". And what the indicator draws on the chart resembles a parabola. Hence its English abbreviation "Parabolic".
Parabolic Sar, shows the trader which trend prevails in the market.

MACD — Divergence and convergence of moving averages. This is an oscillator type indicator that is widely used by traders for technical analysis. MACD is a trend-following tool that uses moving averages to determine the momentum of a financial instrument (stock, cryptocurrency, or other tradable asset).
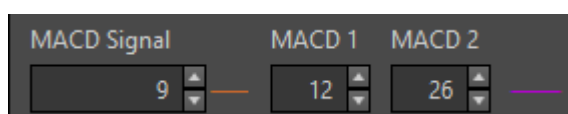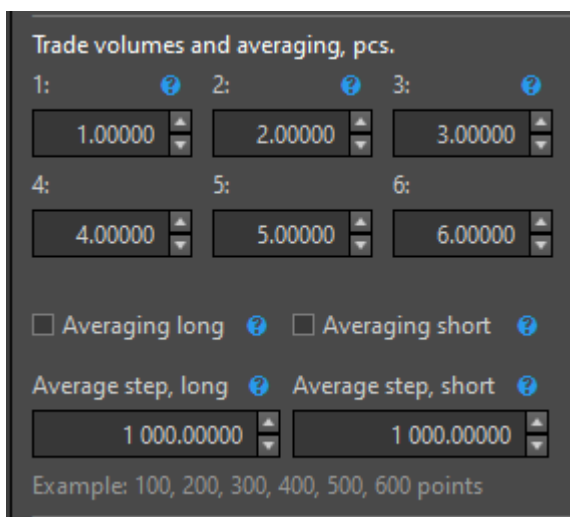

HighLow(X) — Shows the high and low for X last candles. So to speak, it draws a price corridor at extreme points of price movement.
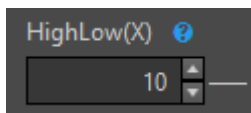
MinMaxClose(X) — Shows the high and low for the last X candles, evaluating only the closing values of the candles, the tails/shadows of the candles are not taken into account.
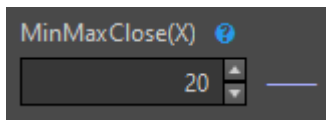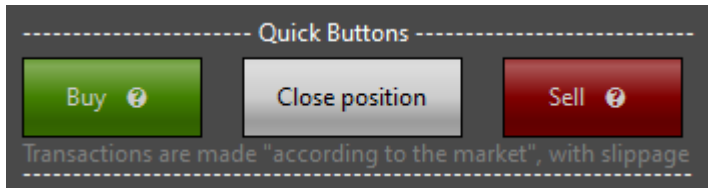

Volumes

It is possible to trade with position averaging. You can set up 6 levels for position averaging. At each level, we indicate exactly what size / volume the position should be. By specifying the values 1-2-3-4-5-6, we will get an average of 1 lot at each level and, as a result, the total position equals 6. It is important that the values of the specified volumes are not summed, and the position changes to the level of the specified value.

If only the first parameter is set, and the other five parameters are equal to zero, and no betting systems are enabled, then trading will take place in a single volume.
In order to enable the averaging mode for purchases or sales, you need to activate the corresponding checkbox (check the box).

The averaging step shows how many points a new order will be placed to increase the current position.

Quick buttons

Auxiliary mechanism for manual purchase and sale operations. Buying or selling occurs "at the market" for the volume specified in the first parameter of the volume settings block. The entire position is closed. The volume for the order is taken similar to the current position.

Patterns

—Candle formations (a set of candles/bars of a certain geometric nature)
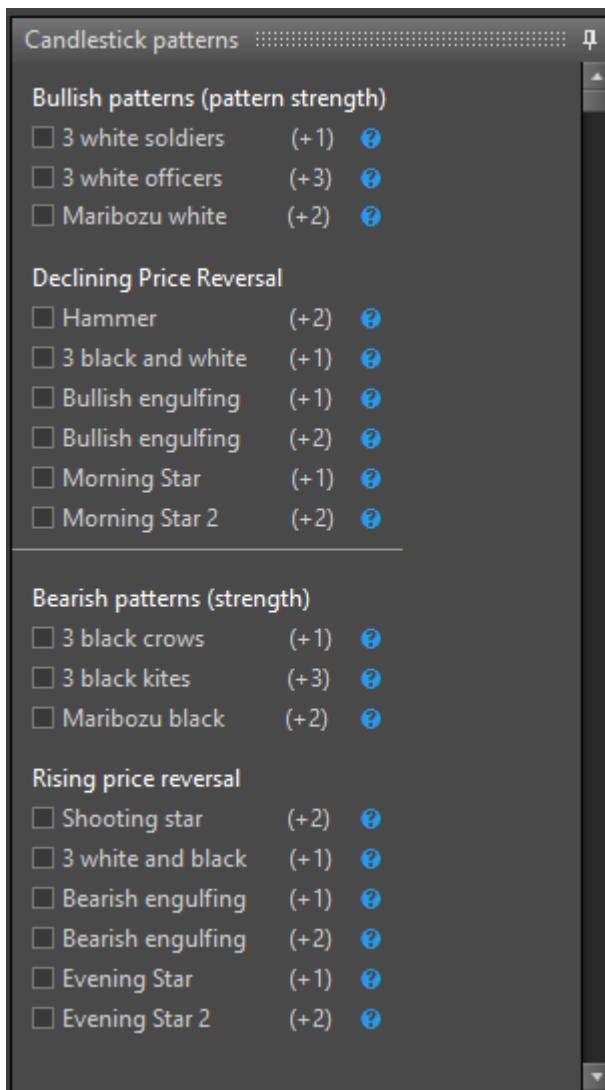
Bullish patterns (pattern strength)
3 white soldiers - 3 rising candles in a row and each close is higher than the previous one
3 white officers - Exhibitor. 3 growing candles in a row and the body of each next candle is larger than the previous one.
White Maribozu - The Maribozu Candle has no shadows at all. This is a strong continuation pattern. The bulls are in complete control of the market.

Downward reversal
Hammer - Candle with a long lower wick after two falling candles and the wick at the bottom must be at least 2 times the body of the candle.
3 black and white - A series of black candles is replaced by white. Bulls are gaining strength.
Bullish Engulfing – After a small black candlestick, a large white candlestick follows.
Bullish engulfing (+2) - After a small black candle, there is at least 2 times more white. Compare the body of the candles.
Morning Star - After the black candle, there is a candle with a short body and a long tail at the bottom. The bulls are buying back the asset.
Morning Star 2 - With confirmation of the formation. After the black candle there is a candle with a short body and a long tail below, and after it comes a white candle. Bulls are gaining strength.

Bearish patterns (strength)
3 black crows - 3 falling candles in a row and each close is lower than the previous one
3 black kites - Exhibitor. 3 falling candles in a row and the body of each next one is larger than the previous one
Black Maribozu - The Maribozu Candle has no shadows at all. This is a strong continuation pattern. The bears are in complete control of the market.

Upward reversal
Shooting Star - A formation similar to an inverted hammer, but it forms at the end of an uptrend. Two rising candles followed by a falling candle with a long shadow on top.
3 white and black - A series of white candles is replaced by black. The bears are getting stronger.
Bearish Engulfing - After the small white candlestick comes the big black one.
Bearish absorption (+2) - After a small white candlestick, there is at least 2 times more black one. Compare the body of the candles.

Evening Star - After the white candlestick comes a candlestick with a short body and a long shadow on top. The bears are actively selling the asset.
Evening star 2 - With confirmation. After the white candlestick, there is a candlestick with a short body and a long shadow on top, followed by a black candlestick. Bears are actively selling.

General considerations for working with DeskBot

Tool selection. First of all, you need to start from the characteristics of the tool. It is important that it be as liquid as possible. So that at any time you can close the position with minimal losses on the spread. On any other exchanges, you can always see the trading volumes of assets and sort them from largest to smallest, so it is easy to find the most liquid instruments.
Another choice of tool depends on the strategy. If the strategy is trend-following, then the instrument must be trendy. Otherwise, on a flat, such a strategy will not bring profit.

Optimization of parameters on the example of the Sigma robot

Not all parameters need optimization. Let's look at some of the important ones.
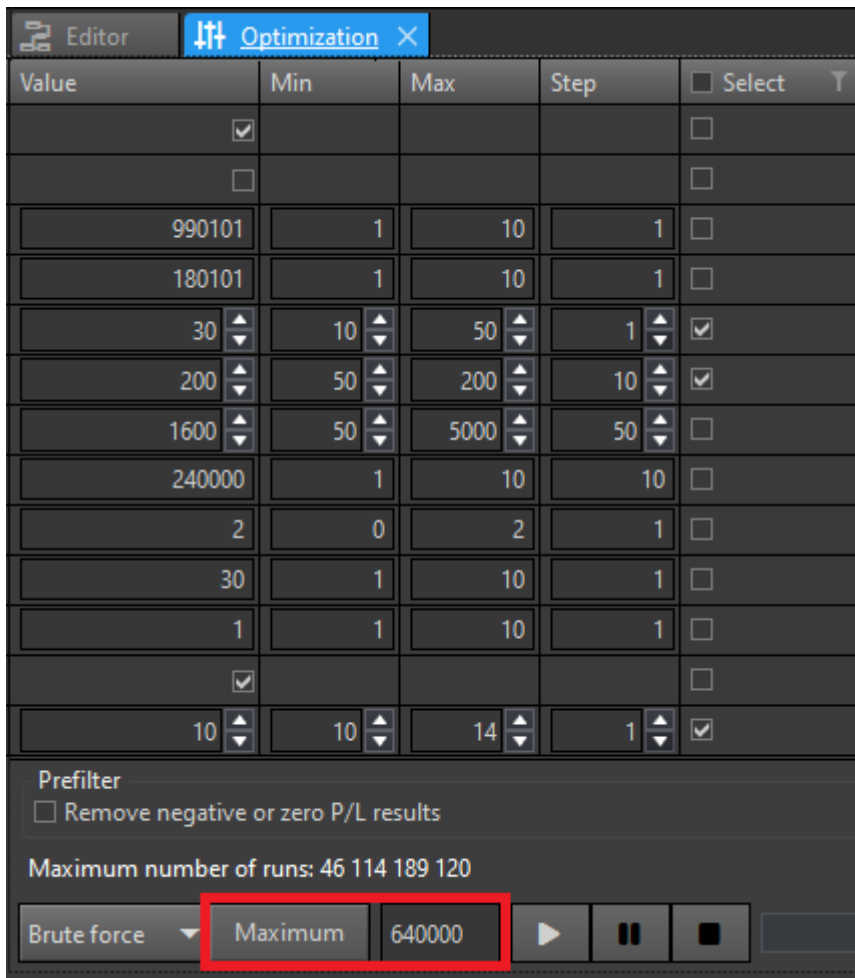
The checkboxes select those parameters that will be involved in the optimization.
The more parameters we select with checkboxes in the column called Select, the more tuples for verification will be created.
And, the smaller **the step** of changing the parameter values we specify, the larger the sample will also be. This will lead to long and large calculations. It is not necessary to do so.
Therefore, it is desirable to choose really important parameters for optimization and not to reduce them step by step.

After selecting and configuring the optimization parameters, click the **Maximum** button. A value will appear in the right field, this is the number of tests, the number of passes / calculations. Make sure it's not too big. Otherwise, the optimization process can drag on for weeks and months.

It is not recommended to change the "Search" method to another one. And also saving the results in Excel is also not the best solution. All this significantly slows down the calculation process.

At any time you can stop the optimization process, adjust the settings if you forgot/missed something and start again.

In the table of finished optimization results, you can sort by the P / L (profit / loss) parameter to find the configuration with the maximum profitability. You can also pay attention to the Maximum drawdown field. The minimum value in this field will show the configuration with the least risk for this strategy for the current financial instrument.

Next, you yourself will need to decide what is more important, high profitability or minimal risk. Or some balance of average risk-return values.

Don't be afraid to experiment! Try, search, study, analyze and with experience, just by looking at the description of a new strategy, you will immediately know its strengths and weaknesses, as well as approximately what profitability this strategy is capable of. But that's with experience. And now it's an exciting journey of creating, testing and learning many new unique strategies!

If you have any questions, please contact us via chat or email. Let's help and advise!

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Sincerely,
DeskBot team

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