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IBKR First Candle Market Scanner

A real-time stock scanner for Interactive Brokers (IBKR) that detects bullish **Heikin Ashi** and **Normal** candles at market open (9:30 AM EST) on NASDAQ and NYSE exchanges.



Features

Core Scanning Capabilities

- **Real-time First Candle Detection** - Scans for bullish patterns at market open
- **Heikin Ashi Candle Analysis** - TradingView-matching HA calculation
- **Normal Candle Detection** - Standard bullish candlestick detection
- **Multi-Exchange Support** - NASDAQ, NYSE, or both exchanges
- **Configurable Timeframes** - 1, 2, 3, 5, 10, 15 minute candles

Filters

- **Price Filter** - Set minimum and maximum stock price
- **Market Cap Filter** - Filter by market capitalization (in billions)
- **Volume Filter** - Minimum volume requirement on first candle
- **Exchange Filter** - Scan NASDAQ, NYSE, or both

Display Columns

Column	Description
Ticker	Stock symbol
Last Price	Current trading price
Change %	Percentage change from previous close
Bid	Current bid price
Ask	Current ask price
Market Cap (B)	Market capitalization in billions

Column	Description
Volume	Trading volume
HA Bullish	🟢 if HA candle is bullish, 🟥 if not
Normal Bullish	🟢 if normal candle is bullish, 🟥 if not
Scan Time	Time of the scan

Additional Features

- 📋 **Scan History** - Previous runs are saved with parameters used
- ⚡ **Real-time Updates** - Live data streaming with minimal delay
- 🎨 **Modern Dark Theme** - Professional CustomTkinter interface
- 📝 **Logging** - All activities logged to `scanner.log`

Prerequisites

1. Interactive Brokers Account

- Active IBKR account (Paper or Live)
- Market data subscription for NASDAQ/NYSE

2. IBKR Trader Workstation (TWS) or IB Gateway

- Download from: [IBKR TWS Download](#)
- Version 1023 or higher recommended

3. TWS API Configuration

Enable API connections in TWS:

1. Open TWS → **File** → **Global Configuration**
2. Navigate to **API** → **Settings**
3. **Enable ActiveX and Socket Clients**

4. **Enable Allow connections from localhost only**
5. Note the **Socket Port** (default: 7497 for Paper, 7496 for Live)
6. Click **Apply** and **OK**

4. Python 3.9+

- Python 3.9 or higher required
- Download from: [Python Downloads](#)

Installation

Clone or Download

```
git clone https://github.com/jahanzaib-codes/ibkr-first-candle-scanner.git  
cd ibkr-first-candle-scanner
```

Install Dependencies

```
pip install -r requirements.txt
```

Or install individually:

```
pip install ib_insync customtkinter pandas numpy pytz
```

Usage

1. Start IBKR TWS

- Launch Trader Workstation
- Login to your account (Paper or Live)

- Ensure API is enabled (see Prerequisites)

2. Run the Scanner

```
# Navigate to project folder  
cd dreynald  
  
# Run the scanner  
python main.py
```

3. Connect to TWS

1. Click **Connect to TWS** button
2. Enter connection details:
 - **Host:** **127.0.0.1** (default)
 - **Port:** **7497** (Paper) or **7496** (Live)
 - **Client ID:** **1** (or any unique number)
3. Click **Connect**

4. Configure Scanner Settings

Click **Configure Settings** to set:

- **Exchange:** NASDAQ, NYSE, or Both
- **Timeframe:** 1, 2, 3, 5, 10, or 15 minutes
- **Price Range:** Min and Max price
- **Market Cap Range:** Min and Max in billions
- **Minimum Volume:** First candle volume threshold
- **Detection Options:** HA candle, Normal candle, or both

 **Save & Apply** - Saves settings to file (persists after restart) **Apply** - Applies settings for current session only

5. Start Scanning

- **Start Scan:** Begins continuous monitoring (every 30 seconds)

- **Run Single Scan:** Performs one scan immediately
- **Stop Scan:** Stops continuous monitoring



Heikin Ashi Calculation

The scanner uses TradingView-matching Heikin Ashi formulas:

```
HA_Close = (Open + High + Low + Close) / 4
HA_Open  = (Previous_HA_Open + Previous_HA_Close) / 2
HA_High  = max(High, HA_Open, HA_Close)
HA_Low   = min(Low, HA_Open, HA_Close)

Bullish Condition: HA_Close > HA_Open
```

This ensures the signals match what you see in TradingView charts.

Project Structure

```
dreynald/
├── main.py                  # 🚀 Application entry point (RUN FROM HERE)
├── requirements.txt          # Python dependencies
├── README.md                # This documentation
├── scanner_settings.json    # Saved settings (auto-generated)
├── scanner.log              # Runtime logs (auto-generated)
└── src/
    ├── scanner.py            # IBKR scanner logic & HA calculations
    ├── gui.py                # CustomTkinter GUI
    ├── config.py              # Configuration constants
    ├── utils.py               # Helper functions
    └── __init__.py            # Package init
docs/
└── .gitkeep                 # Placeholder for screenshots
```

Configuration

Default Settings

Setting	Default Value
Exchange	BOTH (NASDAQ + NYSE)
Timeframe	2 minutes
Min Price	\$0
Max Price	\$100
Min Market Cap	\$0B
Max Market Cap	\$100B
Min Volume	100,000
HA Detection	Enabled
Normal Detection	Enabled

Connection Ports

Trading Mode	Port
Paper Trading	7497
Live Trading	7496

Troubleshooting

Connection Issues

Error: "Could not connect to IBKR TWS"

- Ensure TWS is running and logged in
- Check if API is enabled in TWS settings
- Verify the port number (7497 for Paper, 7496 for Live)
- Check if another application is using the same Client ID

Error: "Market data subscription required"

- Ensure you have active market data for NASDAQ/NYSE
- Check your IBKR subscription settings

Scan Issues

No results returned

- Check if market is open (9:30 AM - 4:00 PM EST)
- Verify filter settings are not too restrictive
- Ensure TWS has loaded market data

Delayed data

- Real-time data requires proper subscriptions
- Some data may be delayed by 15 minutes without subscription



How It Works

1. **Stock Universe Fetch:** Uses IBKR's built-in scanner to get stocks matching filters
2. **Historical Data Request:** Fetches intraday bars for each stock
3. **Candle Analysis:** Calculates HA values and checks bullish conditions
4. **Volume Verification:** Confirms first candle meets volume threshold
5. **Market Data:** Fetches real-time bid/ask, last price, volume
6. **Display Results:** Shows all matching stocks in the table



Support

For issues or questions:

- Open an issue on GitHub
- Contact via Fiverr



License

This project is licensed under the MIT License.



Disclaimer

This software is for educational and informational purposes only. It is NOT financial advice. Trading stocks involves risk of loss. Always do your own research before making trading decisions. The developers are not responsible for any financial losses incurred from using this software.

Developed with ❤️ for IBKR traders