Binance Futures Trading Bot

Junior Python Developer – Crypto Trading Bot

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1. Introduction

The Binance Futures Trading Bot is a CLI-based automation tool for Binance USDT-M Futures.

It enables traders to place Market, Limit, and TWAP orders with optional advanced orders like OCO.

The bot emphasizes:

- Validation of user inputs (symbols, sides, prices, quantities).
- Logging of all trades and errors.
- Reusability with modular Python code.

2. Project Structure

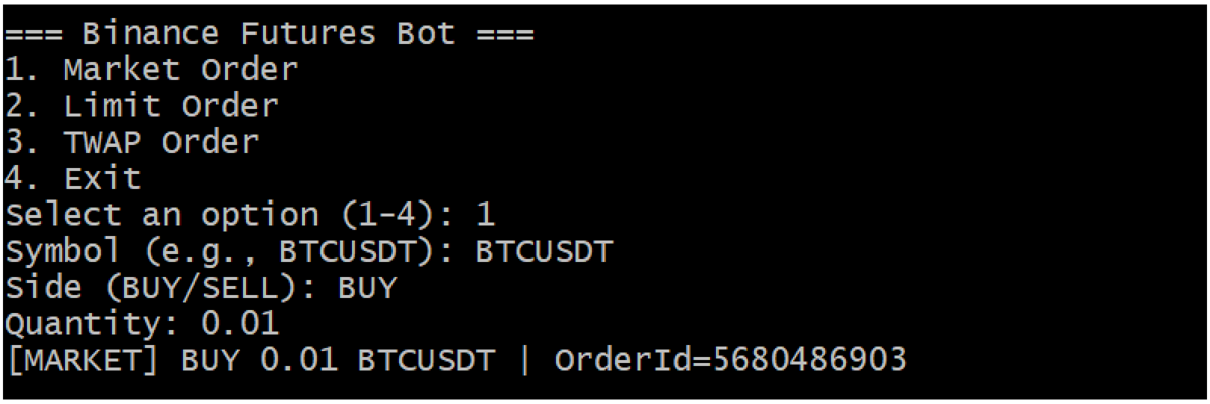
```
Trading-bot
│
 ├── src/
│   ├── client.py
│   ├── logger.py
│   ├── market_orders.py
│   ├── limit_orders.py
│   ├── cli.py
│   ├── menu_cli.py
│   └── advanced/
│       ├── oco.py
│       └── twap.py
│
 ├── bot.log
 ├── report.pdf
└── README.md
```

3. Execution Screenshots

3.1 Market Order

Command:

python src/cli.py MARKET BTCUSDT BUY 0.01

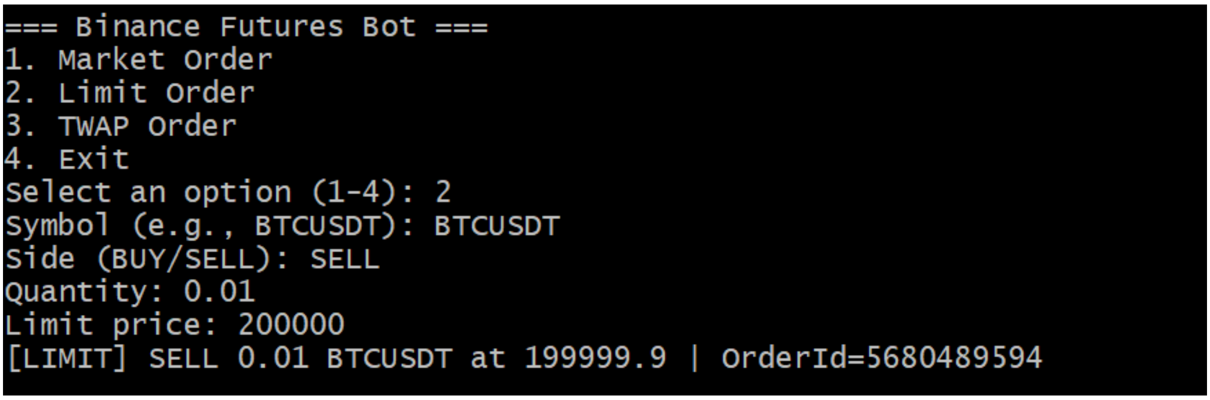


```
=== Binance Futures Bot ===
1. Market Order
2. Limit Order
3. TWAP Order
4. Exit
Select an option (1-4): 1
Symbol (e.g., BTCUSDT): BTCUSDT
Side (BUY/SELL): BUY
Quantity: 0.01
[MARKET] BUY 0.01 BTCUSDT | OrderId=5680486903
```

3.2 Limit Order

Command:

Python src/cli.py LIMIT BTCUSDT SELL 0.01 --price 200000

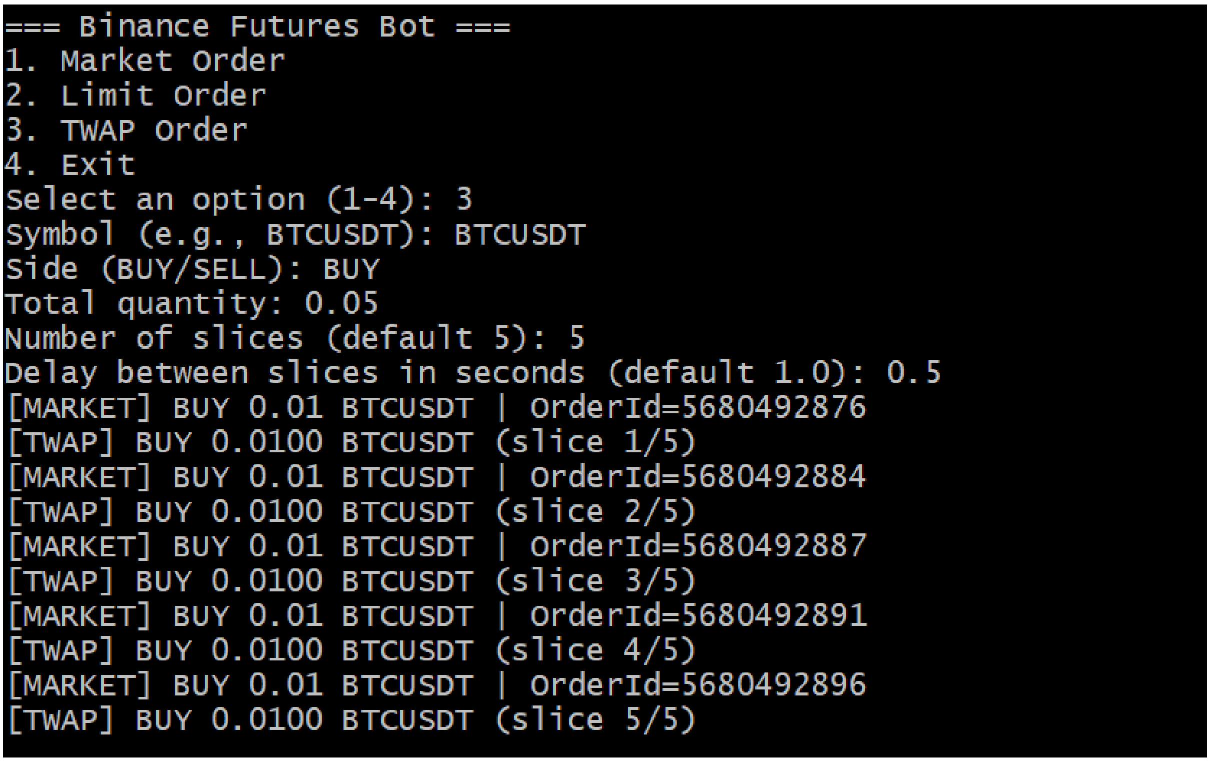


```
=== Binance Futures Bot ===
1. Market Order
2. Limit Order
3. TWAP Order
4. Exit
Select an option (1-4): 2
Symbol (e.g., BTCUSDT): BTCUSDT
Side (BUY/SELL): SELL
Quantity: 0.01
Limit price: 200000
[LIMIT] SELL 0.01 BTCUSDT at 199999.9 | OrderId=5680489594
```

3.3 TWAP Order

Command:

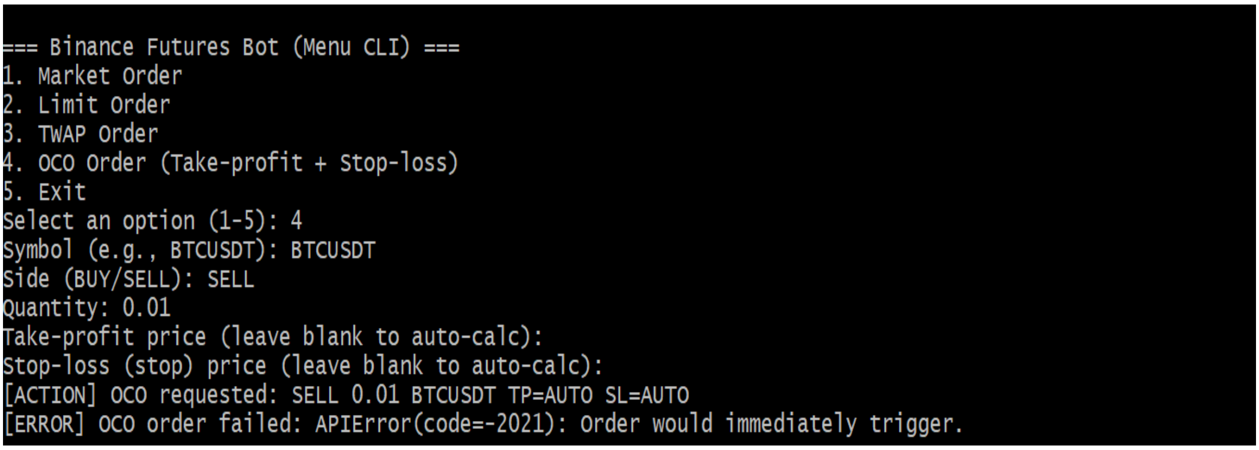
python src/cli.py TWAP BTCUSDT BUY 0.05 --slices 5 --delay 0.5



```
=== Binance Futures Bot ===
1. Market Order
2. Limit Order
3. TWAP Order
4. Exit
Select an option (1-4): 3
Symbol (e.g., BTCUSDT): BTCUSDT
Side (BUY/SELL): BUY
Total quantity: 0.05
Number of slices (default 5): 5
Delay between slices in seconds (default 1.0): 0.5
[MARKET] BUY 0.01 BTCUSDT | OrderId=5680492876
[TWAP] BUY 0.0100 BTCUSDT (slice 1/5)
[MARKET] BUY 0.01 BTCUSDT | OrderId=5680492884
[TWAP] BUY 0.0100 BTCUSDT (slice 2/5)
[MARKET] BUY 0.01 BTCUSDT | OrderId=5680492887
[TWAP] BUY 0.0100 BTCUSDT (slice 3/5)
[MARKET] BUY 0.01 BTCUSDT | OrderId=5680492891
[TWAP] BUY 0.0100 BTCUSDT (slice 4/5)
[MARKET] BUY 0.01 BTCUSDT | OrderId=5680492896
[TWAP] BUY 0.0100 BTCUSDT (slice 5/5)
```

3.4 OCO Order (Optional)

Command: python src/cli.py OCO BTCUSDT SELL 0.01 --price 28000 --stop 26000



```
=== Binance Futures Bot (Menu CLI) ===
1. Market Order
2. Limit Order
3. TWAP Order
4. OCO Order (Take-profit + Stop-loss)
5. Exit
Select an option (1-5): 4
Symbol (e.g., BTCUSDT): BTCUSDT
Side (BUY/SELL): SELL
Quantity: 0.01
Take-profit price (leave blank to auto-calc):
Stop-loss (stop) price (leave blank to auto-calc):
[ACTION] OCO requested: SELL 0.01 BTCUSDT TP=AUTO SL=AUTO
[ERROR] OCO order failed: APIError(code=-2021): Order would immediately trigger.
```

4. Validation & Error Handling

- **Symbol Validation:** Checks if the trading symbol exists on Binance Futures.
- **Side Validation:** Must be BUY or SELL.
- **Quantity Validation:** Must be > 0 and within exchange limits.
- **Price Validation:** Ensures Limit and OCO prices respect tick size.
- **Logging:** All actions, successful orders, and errors are logged in bot.log.

5. Optional / Bonus Features

- **TWAP slicing:** Splits large orders into smaller chunks automatically.
- **Menu-driven CLI:** Interactive prompts for users who prefer not to type full commands.
- **OCO orders:** Implemented for take-profit + stop-loss strategy.

6. Conclusion

The Binance Futures Trading Bot automates USDT-M Futures trading efficiently with:

- Core Market and Limit orders
- Advanced TWAP and optional OCO orders
- Robust input validation and structured logging

This project demonstrates the ability to build **reusable, modular trading scripts** with Python and Binance API.