

BINANCE FUTURES TRADING BOT - PROJECT REPORT

PROJECT DESCRIPTION

Python-based trading bot for Binance USDT-M Futures Testnet supporting market orders, limit orders, and TWAP execution strategies.

SCREENSHOTS

Market Order CLI Execution

```
PS C:\Users\Sanjay\OneDrive\Desktop\trading_bot\trading_bot> python src/market_orders.py BTCUSDT BUY 0.01
Order ID: 12022637551
Status: NEW
Executed Qty: 0.000
Avg Price: 0.00
PS C:\Users\Sanjay\OneDrive\Desktop\trading_bot\trading_bot>
```

Terminal showing market order command execution with order ID, status, and executed quantity output

Limit Order CLI Execution

```
PS C:\Users\Sanjay\OneDrive\Desktop\trading_bot\trading_bot> python src/limit_orders.py BTCUSDT SELL 0.01 85000
Order ID: 12022641902
Status: NEW
Executed Qty: 0.000
Avg Price: 0.00
PS C:\Users\Sanjay\OneDrive\Desktop\trading_bot\trading_bot> python src/limit_orders.py BTCUSDT SELL 0.01 30000
Error: Limit order failed: APIError(code=-4024): Limit price can't be lower than 83552.44.
```

Terminal showing limit order command with price parameter and order confirmation details

TWAP Execution

```
PS C:\Users\Sanjay\OneDrive\Desktop\trading_bot\trading_bot> python src/advanced/twap.py BTCUSDT BUY 0.03 3 2
Chunk 1: Order 12022644608 executed 0.0
Chunk 2: Order 12022645241 executed 0.0
Chunk 3: Order 12022645882 executed 0.0
TWAP completed: 3 orders, 0.0 total executed
PS C:\Users\Sanjay\OneDrive\Desktop\trading_bot\trading_bot> cat bot.log
```

Terminal showing TWAP strategy executing multiple chunks over time with individual order confirmations

bot.log File

```
PS C:\Users\Sanjay\OneDrive\Desktop\trading_bot\trading_bot> cat bot.log
2026-01-29 18:02:08,087 | INFO | __main__ | Market order request: BTCUSDT BUY 0.01
2026-01-29 18:02:08,087 | ERROR | __main__ | Validation failed: Missing API credentials
2026-01-29 18:02:32,041 | INFO | __main__ | Market order request: BTCUSDT BUY 0.01
2026-01-29 18:02:32,623 | INFO | advanced | Binance client initialized
2026-01-29 18:02:33,656 | INFO | __main__ | Market order response: orderId=12022637551, status=NEW, executedQty=0.000
2026-01-29 18:02:59,534 | INFO | __main__ | Limit order request: BTCUSDT SELL 0.01 @ 85000.0
2026-01-29 18:03:00,208 | INFO | advanced | Binance client initialized
2026-01-29 18:03:00,694 | INFO | __main__ | Limit order response: orderId=12022641902, status=NEW, executedQty=0.000
2026-01-29 18:03:09,168 | INFO | __main__ | Limit order request: BTCUSDT SELL 0.01 @ 30000.0
2026-01-29 18:03:09,479 | INFO | advanced | Binance client initialized
```

Log file showing timestamped entries for order requests, responses, and execution details with proper formatting

ORDER TYPES

Market Order

Executes immediately at current market price. Provides instant execution but price not guaranteed.

Limit Order

Executes only at specified price or better. Provides price control but execution not guaranteed.

TWAP (Time-Weighted Average Price)

Splits large orders into smaller chunks executed at regular intervals.

Reduces market impact and provides average execution price over time.

TECHNICAL IMPLEMENTATION

- CLI-based execution with argument parsing
- Input validation and error handling
- Structured logging to single bot.log file
- Binance Futures API integration
- Testnet environment for safe testing

USAGE EXAMPLES

Market: `python src/market_orders.py BTCUSDT BUY 0.01`

Limit: `python src/limit_orders.py BTCUSDT SELL 0.01 30000`

TWAP: `python src/advanced/twap.py BTCUSDT BUY 0.1 5 10`