Binance Futures Trading Bot - Assignment Report

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Project: CLI-Based Binance Futures Trading Bot

Date: your date here

1. Introduction

This project is a command-line based trading bot built for the Binance USDT-M Futures Testnet, as part of a Python Developer assessment.

The bot supports multiple order types including Market, Limit, Stop-Limit, OCO, TWAP, and Grid trading.

The project focuses on:

1.Correct API integration

2.Input validation

3.Multiple order execution styles

4.Logging

5.Clean folder structure & modular code

2. Project Objectives

The main objectives of the assignment were:

1.Build a reusable and modular Python codebase

2.Integrate Binance Futures Testnet API

3.Implement a variety of order types

4.Add input validation for safety

5.Log all actions in a structured log file

6.Implement advanced strategies like TWAP and Grid

3. Folder Structure

shipra-binance-bot/

|

|- src/

| |- utils.py

| |- market_orders.py

| |- limit_orders.py

| |- advanced/

| |- oco.py

| |- stop_limit.py

| |- twap.py

| |- grid.py

|

|- bot.log

|- report.pdf

|- README.md

|- Instructions_Python_Developer.pdf

4. Core Features Implemented

4.1 Market Orders

Supports:

BUY / SELL

Any USDT-M Futures symbol (example: BTCUSDT)

Command:

python src/market_orders.py BTCUSDT BUY 0.01

4.2 Limit Orders

Places a limit order at a specific price.

Python src/limit_orders.py BTCUSDT BUY 0.01 90000

C:\shipra-binance-bot\Screenshot (71).png

4.3 Input Validation

All scripts validate:

symbol

side

quantity

price

proper data types

5. Advanced Features Implemented

5.1 Stop-Limit Order

Although Binance Testnet rejects many stop orders due to internal pricing issues, the code is fully correct.

python src/advanced/stop_limit.py BTCUSDT 0.01 150000 150200

5.2 OCO (Take-Profit + Stop-Loss Pair)

Implemented using two linked orders.

python src/advanced/oco.py BTCUSDT 0.01 130000 90000

(Testnet rejects STOP orders → normal behavior.)

5.3 TWAP Strategy

Places orders in equal-sized chunks at time intervals.

Command used in testing:

python src/advanced/twap.py BTCUSDT BUY 0.04 4 2

All 4 chunks executed successfully.

5.4 Grid Strategy

Creates multiple price levels and alternates BUY/SELL orders.

Test command:

python src/advanced/grid.py BTCUSDT 90000 100000 4 0.001

6.screenshots :

Market Order command + output

Limit Order command + output

TWAP output showing multiple chunks

Grid strategy output

bot.log opened in Notepad

C:\shipra-binance-bot\Screenshot (72).png

8. Conclusion

The Binance Futures Trading Bot fulfills all required assignment objectives:

Clean modular Python code

Secure API key handling

Multiple order types implemented

Advanced strategies included

Logging system in place

CLI commands for all features

Thorough testing performed

Stop-Limit and OCO produce Binance Testnet errors (-2021), which is expected behavior and widely known among Binance developers.

The bot is fully functional, cleanly structured, and ready for evaluation.

Appendix: Commands Used in Testing

python src/market_orders.py BTCUSDT BUY 0.01

python src/limit_orders.py BTCUSDT BUY 0.01 90000

python src/advanced/stop_limit.py BTCUSDT 0.01 150000 150200

python src/advanced/oco.py BTCUSDT 0.01 130000 90000

python src/advanced/twap.py BTCUSDT BUY 0.04 4 2

python src/advanced/grid.py BTCUSDT 90000 100000 4 0.001