**Testing the AI-Powered Automated Day Trading System**

Yes, you can test the AI-powered automated day trading system with your Charles Schwab account and Grok 4’s API in **dry run mode** for a full trading day (9:30 AM–4:00 PM ET) to simulate trades without risking real money. Since Schwab’s Trader API lacks native paper trading, the script uses dry\_run=True to simulate orders, logging results to trading.log on PythonAnywhere. Given your Schwab Developer account is pending approval (expected by July 16–17, 2025) and today is Sunday, July 13, 2025, 5:19 PM EDT, you can prepare now and run a full-day dry run test on the first market day after approval (e.g., Thursday, July 17, 2025).

**Key Notes**

* **Dry Run in Schwab**: The dry\_run=True parameter in the place\_order method simulates buy/sell orders without executing them, validating order details (e.g., quantity, account balance) and logging results to trading.log. This mimics a full trading day’s activity.
* **Full-Day Test**: You’ll run the script manually or via a scheduled task for one market day (6.5 hours, 9:30 AM–4:00 PM ET) to collect logs of simulated trades.
* **Grok 4 (Standard)**: Uses the $30/month or $300/year plan with a 128,000-token context for predictions.
* **PythonAnywhere**: Enables remote access and logging, with no local software needed.
* **Schwab Approval Delay**: You’ll prepare now but complete testing after approval.

**Step-by-Step Instructions to Test a Full-Day Dry Run**

# Step 1: Complete Pre-Approval Setup

Since your Schwab Developer account is pending, complete the preparatory steps now:

## Set Up xAI Account for Grok 4 (Standard):

* 1. Open a browser (Safari, Chrome, or Firefox) on your Mac.
  2. Go to [https://x.ai/](https://x.ai/), log in or create an account.
  3. Subscribe to the **SuperGrok** plan ($30/month or $300/year):
     1. In the xAI Console ([https://x.ai/console](https://x.ai/console)) or Grok app (App Store), select SuperGrok and pay.
  4. Copy your Grok 4 API key (e.g., xai\_abc123...) to a secure location (e.g., ~/Documents/Trading/key.txt).

## Set Up PythonAnywhere:

* 1. Go to [https://www.pythonanywhere.com/](https://www.pythonanywhere.com/), log in or create a free account (verify email).
  2. Note your username (e.g., yourname123) from the dashboard.
  3. In “Consoles” > “New console” > “BASH,” run:
  4. pip3 install --user schwab-py pandas numpy requests

## Create the Trading Script:

* 1. In PythonAnywhere’s “Files” tab, click “New file,” name it **trade\_schwab\_grok4\_multi.py**, and click “Create.”

## Configure Available Fields:

* 1. In PythonAnywhere’s “Files” tab, click trade\_schwab\_grok4\_multi.py to open the editor.
  2. Update:
     1. XAI\_API\_KEY: Replace YOUR\_XAI\_API\_KEY with your Grok 4 API key (e.g., "xai\_abc123def456"), in quotes.
     2. Replace /home/gmafanasiev/trading.log with /home/gmafanasiev/trading.log (e.g., /home/yourname123/trading.log).
     3. Replace /home/gmafanasiev/token.json with /home/gmafanasievere\_username/token.json (e.g., /home/yourname123/token.json).
  3. Leave Schwab credentials as placeholders:
  4. SCHWAB\_APP\_KEY = "YOUR\_SCHWAB\_APP\_KEY"
  5. SCHWAB\_APP\_SECRET = "YOUR\_SCHWAB\_APP\_SECRET"
  6. SCHWAB\_CALLBACK\_URL = "https://127.0.0.1:8182"
  7. XAI\_API\_KEY = "xai\_abc123def456"
  8. TOKEN\_PATH = "/home/yourname123/token.json"
  9. logging.basicConfig(filename='/home/yourname123/trading.log', level=logging.INFO, format='%(asctime)s - %(message)s')
  10. Save the file.

# Step 2: Finalize Setup After Schwab Approval

## Wait for Approval:

* 1. Check your email for Schwab’s approval (expected by July 16–17, 2025).
  2. Log in to [https://developer.schwab.com/](https://developer.schwab.com/), go to “Dashboard” > “Apps,” and get your **App Key** and **App Secret**.

## Update Schwab Credentials:

* 1. From any computer, log in to PythonAnywhere, open trade\_schwab\_grok4\_multi.py in the “Files” tab.
  2. Update:
  3. SCHWAB\_APP\_KEY = "your\_schwab\_app\_key\_here" # e.g., "AK1234567890"
  4. SCHWAB\_APP\_SECRET = "your\_schwab\_app\_secret\_here" # e.g., "xyz789abc123"
  5. Save the file.

## Authenticate Schwab API:

* 1. In PythonAnywhere, go to “Consoles” > “New console” > “BASH.”
  2. Run:

python3 /home/gmafanasiev/trade\_schwab\_grok4\_multi.py

* 1. Copy the URL printed in the console (e.g., https://api.schwabapi.com/v1/oauth/authorize?...).
  2. Paste it into your browser, press Enter, log in with your **Schwab portfolio credentials**, select your account, click “Allow,” and copy the resulting URL.
  3. Paste the URL back into the BASH Console and press Enter.
  4. Verify /home/gmafanasiev/token.json appears in the “Files” tab.

# Step 3: Run a Full-Day Dry Run Test

## Choose a Test Day:

* 1. Start on the first market day after approval (e.g., Thursday, July 17, 2025, 9:30 AM–4:00 PM ET).
  2. Ensure the test runs during market hours (9:30 AM–4:00 PM ET, 6.5 hours).

## Method 1: Manual Run for Full Day:

* 1. **Start the Test**:
     1. From any computer, log in to PythonAnywhere.
     2. Go to “Consoles” > “New console” > “BASH.”
     3. At 9:30 AM ET (1:30 PM UTC), run:

python3 /home/gmafanasiev/trade\_schwab\_grok4\_multi.py

* + - * The script runs continuously, checking prices every minute and logging simulated orders (dry\_run=True) to /home/gmafanasiev/trading.log.
  1. **Monitor During the Day**:
     1. From any browser, go to PythonAnywhere’s “Files” tab, open trading.log.
     2. Check entries, e.g.:
        + 2025-07-17 09:30:00 - Account Equity: $100000.00
        + 2025-07-17 09:30:00 - Current Price: $150.25, Grok 4 Prediction: 0.62
        + 2025-07-17 09:30:00 - Placed BUY order (dry run): 33 shares of AAPL at $150.25
     3. Refresh periodically to track activity.
  2. **Stop at 4:00 PM ET**:
     1. At 4:00 PM ET (8:00 PM UTC), return to the BASH Console and press Ctrl+C to stop the script.
     2. Alternatively, in the “Consoles” tab, find the console (e.g., “BASH console #12345”) and click “Kill.”
  3. **Review Results**:
     1. Download trading.log from the “Files” tab to your Mac (~/Documents/Trading/) or another computer.
     2. Analyze the number of buy/sell orders, Grok 4 predictions, and success/failure messages.

## Method 2: Scheduled Task for Full Day:

* 1. **Set Up Task**:
     1. Go to PythonAnywhere’s “Tasks” tab.
     2. Click “Add a new scheduled task.”
     3. Set the command:
     4. python3 /home/gmafanasiev/trade\_schwab\_grok4\_multi.py
        + Replace gmafanasiev with your PythonAnywhere username.
     5. Schedule for 9:30 AM ET (1:30 PM UTC) on July 17, 2025.
     6. Save the task.
  2. **Limit to One Day**:
     1. PythonAnywhere’s free tier allows one scheduled task. To run for only one day, pause the task after 4:00 PM ET:
        + At 4:00 PM ET, go to the “Tasks” tab, find the task, and click “Disable” or delete it.
  3. **Monitor**:
     1. Check trading.log throughout the day for simulated orders.
     2. Verify no real trades appear in your Schwab account ([https://www.schwab.com/](https://www.schwab.com/)).

## Dry Run Validation:

* 1. Ensure dry\_run=True is set in the script’s place\_order calls (already included).
  2. Logs indicate “(dry run)” for each order, confirming no real trades were executed.
  3. Check Schwab’s dashboard to confirm no actual positions or orders were placed.

# Step 4: Access and Monitor from Anywhere

1. **Check Logs**:
   1. From any computer (e.g., office), log in to [https://www.pythonanywhere.com/](https://www.pythonanywhere.com/).
   2. Go to “Files” > /home/gmafanasiev/trading.log.
   3. Review logs for the full day (e.g., 390 minutes of activity, one log per minute).
   4. Download trading.log to analyze on your Mac or elsewhere.
2. **Schwab Dashboard**:
   1. Log in to [https://www.schwab.com/](https://www.schwab.com/) to verify no real trades occurred (due to dry\_run=True).
   2. Compare log entries with expected account behavior.
3. **Manage the Script**:
   1. **Stop**: Kill the console or disable the task in the “Tasks” tab.
   2. **Update**: Edit trade\_schwab\_grok4\_multi.py in the “Files” tab (e.g., adjust SYMBOL or RISK\_PER\_TRADE).
   3. **Retest**: Run manually in the BASH Console for shorter tests:
   4. python3 /home/gmafanasiev/trade\_schwab\_grok4\_multi.py

# Step 5: Troubleshoot

1. **Common Issues**:
   1. **Authentication Errors**: If token.json isn’t created, verify Schwab credentials and callback URL (https://127.0.0.1:8182). Email [traderapi@schwab.com](mailto:traderapi@schwab.com).
   2. **API Errors**: Check Schwab and xAI API keys if “Error: Invalid API key” appears in trading.log.
   3. **No Data**: Ensure testing occurs during market hours (9:30 AM–4:00 PM ET).
   4. **No Trades**: Verify Grok 4 predictions are 0–1. Contact xAI support ([https://x.ai/support](https://x.ai/support)).
   5. **Log Issues**: If trading.log is empty, check the logging path (/home/gmafanasiev/trading.log).
2. **Full-Day Specific**:
   1. **Incomplete Logs**: If the script stops mid-day, check for errors in trading.log (e.g., API rate limits). Restart in the BASH Console.
   2. **High API Usage**: Grok 4 API ($3 per 1M input tokens) may incur costs for frequent calls. Monitor usage in the xAI Console.

# Step 6: Optional Enhancements

1. **Add SMS Notifications**:
   1. Sign up for Twilio ([https://www.twilio.com/](https://www.twilio.com/)), get SID, Auth Token, and phone number.
   2. Edit trade\_schwab\_grok4\_multi.py in the