**StockBot progress mapping**

import pickle

import matplotlib.pyplot as plt

import numpy as np

# Reload the Q-table after kernel reset

file\_path = "/mnt/data/q\_table.pkl"

with open(file\_path, "rb") as f:

q\_table = pickle.load(f)

# Analyze the Q-values

q\_values = list(q\_table.values())

# Distribution analysis

q\_array = np.array(q\_values)

min\_q = np.min(q\_array)

max\_q = np.max(q\_array)

mean\_q = np.mean(q\_array)

std\_q = np.std(q\_array)

# Count near-zero Q-values and high values

near\_zero\_count = np.sum(np.isclose(q\_array, 0, atol=1e-4))

high\_value\_count = np.sum(q\_array > 1.0)

# Plot histogram of Q-values

plt.figure(figsize=(10, 5))

plt.hist(q\_array, bins=50, color='skyblue', edgecolor='black')

plt.title("Distribution of Q-values")

plt.xlabel("Q-value")

plt.ylabel("Frequency")

plt.grid(True)

plt.tight\_layout()

plt.show()

(min\_q, max\_q, mean\_q, std\_q, near\_zero\_count, high\_value\_count, len(q\_array))