Assignment 02

Environment Proof, Basic Analysis & Plot

Connor Coulter

## Overview

This document confirms environment details and runs a tiny analysis with a reproducible plot.

### System & Python Environment

import platform, sys, os, subprocess print(“OS:”, platform.system(), platform.release()) print(“Machine:”, platform.machine()) print(“Processor:”, platform.processor()) print(“Python:”, sys.version.split()[0]) print(“Working Dir:”, os.getcwd())

try: out = subprocess.check\_output([sys.executable, “-m”, “pip”, “list”], text=True) print(“packages (first 15):”) print(“”.join(out.splitlines()[:17])) except Exception as e: print(“pip list unavailable:”, e) try: import psutil vm = psutil.virtual\_memory() print(“Total RAM (GB):”, round(vm.total/1024**3, 2)) print(“Available RAM (GB):”, round(vm.available/1024**3, 2)) print(“CPU Count (logical):”, psutil.cpu\_count(logical=True)) except ImportError: print(“psutil not installed; skipping.”) import pandas as pd import numpy as np rng = pd.date\_range(“2025-01-01”, periods=30, freq=“D”) df = pd.DataFrame({ “date”: rng, “value”: np.linspace(10, 25, 30) + np.random.default\_rng(42).normal(0, 1.2, 30) }) df.head(10) df.describe(numeric\_only=True) import matplotlib.pyplot as plt

plt.figure() plt.plot(df[“date”], df[“value”]) plt.title(“Assignment 02 — Example Time Series”) plt.xlabel(“Date”) plt.ylabel(“Value”) plt.xticks(rotation=45) plt.tight\_layout() plt.show()