BitWith Bite

AI & MACHINE LEARNING WORKSHEET

Time Series Basics

Chapter: AI & Machine Learning · Level ★★☆ · Time: 30 min

SCORE ___ / 20

Name _____ Class _____ Date _____

AFTER THIS WORKSHEET YOU CAN

✓ Trend, seasonality, noise ✓ Lags and rolling windows ✓ Proper time splits ✓ Simple forecasting

Section A · Concept Check • BEGINNER 4 × 1 = 4

1 Yearly repeating patterns are:

◯ A. seasonality ◯ B. trend ◯ C. noise ◯ D. drift only

2 Long-term direction is the:

◯ A. trend ◯ B. season ◯ C. residual ◯ D. lag

3 Time series must be split:

◯ A. chronologically ◯ B. randomly ◯ C. alphabetically ◯ D. by size

4 Yesterday's value used as a feature is a:

◯ A. lag feature ◯ B. leak always ◯ C. label ◯ D. window bug

Section B · Problem Solving • INTERMEDIATE 2 + 3×3 = 11

5 A rolling _____ smooths short-term noise.

6 Random shuffling causes _____ leakage in time data.

7 Decompose ice-cream sales into 3 components.

_____

8 Why can't you random-split time data?

_____

9 Two lag features for daily sales?

_____

Section C · Challenge • CHALLENGE 5

10 When does the naive forecast win?

_____

Reflection — the most useful thing I learned: _____

A ___/4 B ___/11 C ___/5 Total ___/20

Teacher's Signature _____ Parent's Signature _____

✂ ANSWER KEY — FOLD OR CUT BEFORE HANDING OUT

1-A 2-A 3-A 4-A | 5 mean/average/window 6 future/look-ahead 7 = Upward trend + summer seasonality + random noise 8 = Training would see the future of test points 9 = lag-1 (yesterday), lag-7 (same weekday last week) | 10 = Slow-moving series - it is a strong baseline