



3803ICT
Big Data Analysis

Lab 05 – Predictive Data Analysis

Trimester 1 - 2019

Table of Contents

Forecasting.....	3
1. Visualize and interpret the pattern of this time-series	3
2. Predict future demand in month 13,14,15,16 without seasonality	3
3. Predict future demand in month 13,14,15,16 with seasonality	3
4. Evaluation: compare the above implemented methods	3

Forecasting

Given the following historical data of exact sales numbers:

Month	Sales
1	5384
2	8081
3	10282
4	9156
5	6118
6	9139
7	12460
8	10717
9	7825
10	9693
11	15177
12	10990

- 1. Visualize and interpret the pattern of this time-series**
- 2. Predict future demand in month 13,14,15,16 without seasonality**

- ❖ Using moving average, exponential smoothing and linear regression

- 3. Predict future demand in month 13,14,15,16 with seasonality**

Divide the time-series into 3 cycles (Month 1-4, 5-8, 9-12), then

- ❖ Compute the average sales for each cycle
- ❖ Compute the seasonal indices for each month of each cycle
- ❖ Compute the seasonal indices for next cycle
- ❖ Use linear regression on the average sales of cycles to predict the average sale for next cycle
- ❖ Compute the seasonalize forecasts

- 4. Evaluation: compare the above implemented methods**

- ❖ Compute forecast errors
- ❖ Make conclusions