CALIFORNIA STATE UNIVERSITY
FULLERTON

Mihaylo College of Business and Economics
Department of Information Systems & Decision Sciences

PROJECT #1
ISDS 526: Forecasting for Analytical Decision Making

In this project, the goal is to prepare a professional report based on analysis of the time series **"Quarterly mobile-home shipments in the United States for the period 1988Q1 through 2004Q4".** These are new mobile-homes shipped by manufacturers to dealers. *For those of not familiar with manufactured homes, please google about it.*

You will accomplish two major tasks and details are provided below. You should organize **your final report** using the following **table of contents**:

1. Executive Summary
2. Professional Use of Forecast Pro
3. Exploring Data
4. Conclusion

- Your report must have page numbers.
- Your report should also have a title page that includes the title of the project, project #, years and semester information, course name and ID, group members.
- All tables and figures must be properly labeled and numbered.
- Do not begin a section with a graph or a table.
- Avoid blank spaces within a report.
- Your report must look professional.

More Details about the two tasks

Task 1: Professional use of Forecast pro XE

This task will help you learn the basics of forecasting using the functionalities of forecast pro. As the course progresses, you will learn how to select your own forecasting method rather than the one forecast pro recommends.

After **withholding 2 years of data**, use Forecast Pro's **Expert Selection Method** to produce forecasts. In a table form, provide fit measures of MAPE and RMSE. Also provide accuracy measures of RMSE (remember that Forecast Pro will not give RMSE), MAPE and GMRAE. **In this project, use only the <u>out-of-sample static evaluation</u>.** For the holdout analysis period, also provide a graph showing both the forecasts and true values. For better visualization, you may use EXCEL. Were the forecasts accurate? Provided comment and interpretations of all of your results.

Task 2: Exploring the data

  While exploring the time series, please make sure that your report addresses the following   aspects. **<u>Please do not organize your report</u>** as (A), (B), etc. I only itemize them to emphasize the importance of these issues.

- A) Use crude visualization aids of Forecast Pro to summarize the major features or patterns of the time series.

- B) Use the **ACF plot** to summarize the major features of the time series. Your interpretations have to be very clear and should reflect your mastery of the concept of ACF. Simply stating there is trend or there is seasonality will not be accepted.

C) Is the time series stationary? If not, what prescription should be applied to make it stationary? Motivate your decisions and implement them on the time series. Also show the graphs of all your ACF curves and discuss how they differ from each other.

D) Based on your exploration of the time series, what suggestion will you give as to the types of models need to be used in forecasting? **<u>You do not need to be explicit on which method</u>**, but you can give general suggestions. Read my lecture note on CHAPTER 3; a PDF document.

How do I assess your report?

There are no page limits. Only one report is submitted by a group and everyone in the group will be assigned the same grade unless **the peer evaluation** warrants downward adjustment. The due date for submitting the report will be communicated on Titanium. **Only hard copies are accepted**.

IMPORTANT

Submitted reports could be *excellent, very good, good or poor*. <u>Good </u>report does not mean <u>an average</u> report. There is no such thing as average report. <u>I assign a D for poor report.</u> See the rubric on how grades are assigned.

Poor reports are characterized by one or more of the following features. (See the project rubric how grade weights are assigned)

1) The report is done in rush and hence is inconsistent. It also has several errors – grammatical, typo, etc.
2) The report shows **very weak mastery of the concepts**. In this case, it will contain lots of vague statements and generalizations with no support.

3) The report is not well organized and does not reflect seriousness.

4) Different parts of the project are done by different project members **without proper communication of findings.** As a result, the report lacks a smooth flow.

PLAGIARISM

- An automatic **F grade** for the course is assigned for any evidence of plagiarism. **Detect academic dishonesty is not difficult.**

- When I suspect academic dishonesty, I will individually interview group members where members are expected to give clear answers. This will be done during office hours for the course.