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Case 3 Air Arkansas

Air Arkansas (AA), a major carrier based in Little Rock, operates more than 400 aircraft serving 1,300 cities worldwide. During the off-season, Geoff Blum works as the AA Director of Revenue Analysis. Geoff retains you to develop a forecasting system for yields, defined as cents per revenue passenger mile.

Geoff maintains separate aggregate yield histories for AA's three major accounting entities, Domestic, Europe, and Pacific. Within these aggregate histories, Geoff also maintains yield histories for different categories of tickets, such as first class, 7-day advance purchase, etc. Monthly yield reports are distributed throughout the airline to assist in route planning, scheduling, sales and marketing, and many other functions.

AA's accounting system is complex and Geoff needs a way to evaluate interim yield information collected during the month before the final monthly numbers are compiled. On occasion, errors are made in processing tickets, and interim yields are distorted. Another likely problem is that travel agents may be selling tickets at prices not authorized by fare restrictions. Geoff believes that a forecasting system would give him an objective benchmark for evaluating interim yields and detecting errors. Interim yields are run weekly during the month, so Geoff usually has some lead-time to correct problems before the final monthly yields are due.

Geoff provides four years of monthly yield history for the domestic accounting entity (see Case3.XLS). He asks you to do simulated forecasting for the last year of the data so that he can review your performance.

The September, 2001, yield is clearly distorted. Replace this yield with a more representative value before analyzing the data. Next, test the data for seasonality. If seasonal, choose the type of seasonality and perform seasonal adjustment. Determine whether trend smoothing or simple exponential smoothing is the best forecasting model. Finally, simulate forecasting for the last year of data.

Write a report that justifies your choice of forecasting model and explains the simulated forecasting results. You should also explain how you adjusted the data for September, 2001.