

Released 2021-Apr-08

TractorTEK is a regional reseller of agricultural equipment based on the US West Coast. Their utility division unfortunately had their Sales Tracking System crash, leaving them with only back-up data. The system had a Web UI that was used for entry of weekly sales data by the sales teams, and a database for storing that data. It came with some Excel Dashboards for the sales manager to track sales performance and enhance decision making. You're responsible for restoring the TractorTEK Sales Team by implementing a Store Sales Decision Support System.

The margins for sale of equipment are slim, so the main *profit-maker* is in the sale of Extended Service Plans (ESPs). There are 8 products sold by 5 sales teams (identified by their Team Lead) across 2 regions. Weekly data for 2 years is available in Excel format, with the bulk of it denormalized.

Core Functionality

This is a summary of the core functionality – for greater detail, check the Capstone Rubric spreadsheet. When in doubt, ask.

- Create a simple UI screen to capture “real-time” sales order data entries
- Create a database to capture and store all sales data (historical & real-time)
- Batch load to database using a relevant Python library
- Although only 1 database is required, demonstrate OLTP & OLAP concepts via:
 - o Facts
 - o Dimensions
 - o Denormalization for reporting
 - o Aggregations for reporting
- Provide a Jupyter Notebook that returns a range of figures about the database tables that the team can run to confirm the database is as it should be
- Create an Excel dashboard for the Sales manager that helps them to reach some insights. Examples of some reports could be as follows:
 - o Sales Data by Region
 - o Sales Data by Salesperson
 - o Top Ranking Salesperson by period
 - o Sales by Category
- Share some basic insights from your own analysis of the data reached using Excel

Stretch Functionality

If time permits, you may wish to incorporate one or more features, whether that be a favorite topic from class, a Udemy lecture or elsewhere. For example, more advanced analysis using Pandas, additional web app functionality, etc. There is no extra credit, so don't do this at the expense of other sections.

Presentation Formats

Students will be required to submit their PowerPoint slides **no later than 8:30am CT** on the morning of Capstone Presentations (scheduled for Wednesday, April 14). All presentations will be downloaded by bootcamp staff and no other changes will be accepted. Each student presentation will last for a total of 15 mins with 7 minutes of presentation time and 8 minutes of questions from bootcamp staff.

The following order is suggested student presentations:

- Web App UI – Data Entry Functionality
- Sales Dashboard, and Analysis Findings
- Back end – Database Design

The focal points for presentations should be:

- Design choices and justifications
- Value to the customer