

## **## Summary**

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A part supplier has many of their parts on backorder. The company has an opportunity to expedite the shipping for 3 of the parts on back order. SQL & Python/Pandas was used to determine which parts should be expedited.

## **### Project Introduction**

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Taqwa Corp's mission is to ship each purchase within 24 hours. Taqwa Corp never wants any of the parts they sell to be out of stock. Taqwa Corp has experienced unprecedented growth and several parts are out of stock. Taqwa Corp has raised capital to expedite 3 supplier orders for out-of-stock parts. You have 24 hours to provide the General Manager with a list of the 3 parts to expedite and an explanation for each part.

## **##Process**

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1. A query was written using SQL to determine the number of parts that are out of stock.
2. A query was then written and run using SQL to determine which out of stock parts were already ordered from the suppliers.
3. The same query was run again, but sorted by fulfillment date rather than number of parts back ordered.
4. A query was then written and run using SQL to determine which the number of out-of-stock parts needed to be re-ordered.
5. A query was then written and run using SQL to show the out-of-stock parts needed to be re-ordered.
6. A query was then written and run using SQL to determine how many parts sold in the last 7 days and then compare with the 7 days prior, to determine if more or less parts sold.
7. A query was then written and run using SQL to list each part sold in the last 7 days, with the total number of parts sold, starting with the part that sold the most in the last week.
8. All of the queries were executed in a Jupyter notebook using Python / Pandas to provide a report with the queries and results.
9. Using Pandas, two dataframes were combined. The merged dataframe shows both the number of back orders and the number of parts sold in the last 7 days.
10. An index was created that combined the number of back orders and parts sold in the last 7 days.

## **[Jupyter Notebook with SQL and Pandas](#)**

## **## Key Information**

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**The data in the report shows not only which part has the most back orders but also which parts have sold the best in the last 7 days. Both pieces of data will be used to determine the expediated part orders.**

## **## Conclusion**

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One of the parts with the highest index was 372, but the shipment is expected tomorrow so that part was not recommended.

Part 335 was tied for first, according to the index so that part was recommended.

Parts 351 and 353 have identical information, so those parts were recommended for the 2<sup>nd</sup> and 3<sup>rd</sup> part.