

## EXECUTIVE SUMMARY

### Business Questions

- Help PUMA predict future sales
- How inventory management in advance to avoid both inventory storage and overstocking

### Methods Used

- **For Data Cleaning:** Firstly, merged “Activity” and “Product”. Secondly, removed some useless columns, replaced missing values with ‘unknown’ in Main Color Group, and dropped some rows where Reporting Business Unit is missing. Next, converted the time variables (Year and Week) into the standard datetime variable. Finally, converted the missing values to 0 in all variables involving order quantity and order value.
- **For the EDA:** Analysis of the cleaned dataset: Descriptive analysis, Product Division, Reporting Business Unit for each Gender Group, Cancel Rate, Top 10 Style Families in Time Series of Total Qty, Top 10 Products of Tazon and Top 10 Products of ST Runner.
- **Modeling:** ARIMA and LSTM.

### Conclusion and Recommendations

There is no evidence that sales were driven by a few popular products or new products. Also, co-branding, some large promotions and social media influencer will cause different peaks.