Prediction Grocery Customer Behaviors and Market Basket Analysis

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Agenda

1. Objective
2. Results
3. Analysis and Methodology
4. Modeling
5. Recommendations
6. Future Considerations

Objective

- Stakeholder: GroceriesToGo, a grocery store with online services
- Business Problem: Predicting whether a customer will reorder a product
- This allows the firm to make business informed decisions and develop data-driven strategies

BLUF

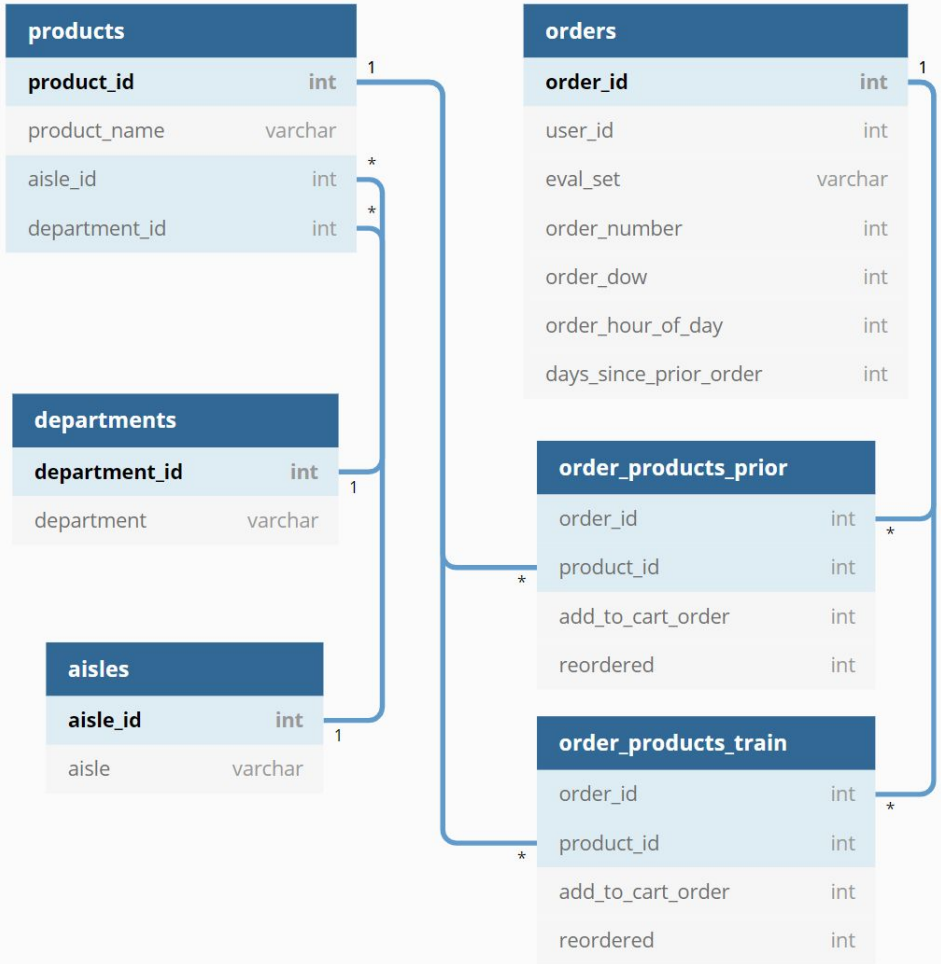
- Our best model predicted 9 out of 10 reordering customers accurately

Data Utilized

- 2017 Instacart Open Sourced
- 206,209 Customers
- 3,421,083 Unique Orders
- 33,819,106 Total Products Ordered

Limitations

- User Data is anonymized
  - No demographic Data (gender, age, income)
  - Products does not include the Brand Names



Exploratory Data Analysis

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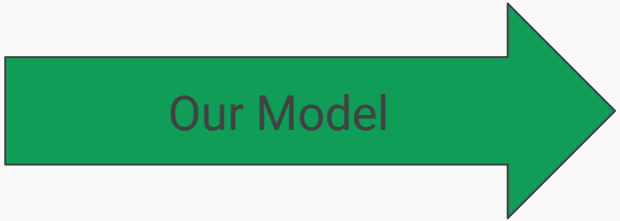
Insert EDA Visuals

Insert EDA Visuals

Modeling Process

Most Important Features

- Customer Total Orders
- Product Total Orders
- Customer Cart Size



- Customer Reorders Product
- Customer DOES NOT Reorder Product

Our Best Model

- Model identified 9 out of 10 reordering customers accurately

Classifier	Accuracy
Random Forest	90.24%
KNeighbors	88.67%
Decision Tree	84.62%

Recommendations

- Target the reordering customers with coupons and ads
- Create a loyalty or points program to retain customers
- Use the models to know which products are most often purchased to keep supply stocked

Future Insights

- Utilizing more advanced Market Basket Analysis to give insights which products are often bought together
  - Coupons and Specials to more incentivize buying items together
- Clustering techniques to group customers on their buying preferences
- Creating a Recommendation App to suggest to customer what others have bought to a specific product or similar shopping order

Thanks!
Questions?

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