UNIVERSITY of WASHINGTON | TACOMA
CENTER FOR BUSINESS ANALYTICS

TCS WORLD TRAVEL

TCS World Travel
Customer Segmentation Project
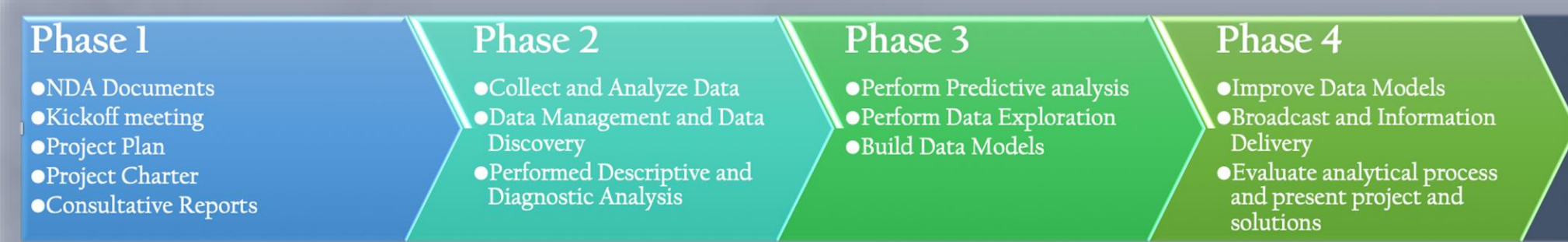
Project Background

- TCS World Travel is a premium luxury travel company
- TCS wants to shift business strategies to better serve their customers by harnessing the power of machine learning
- Consulting team completed in-depth industrial and marketing analysis in Q1 2019, followed by descriptive and predictive analysis in Q2 and Q3, respectively
- Team constructed an automatic bot to identify trending destinations in Q4 2020
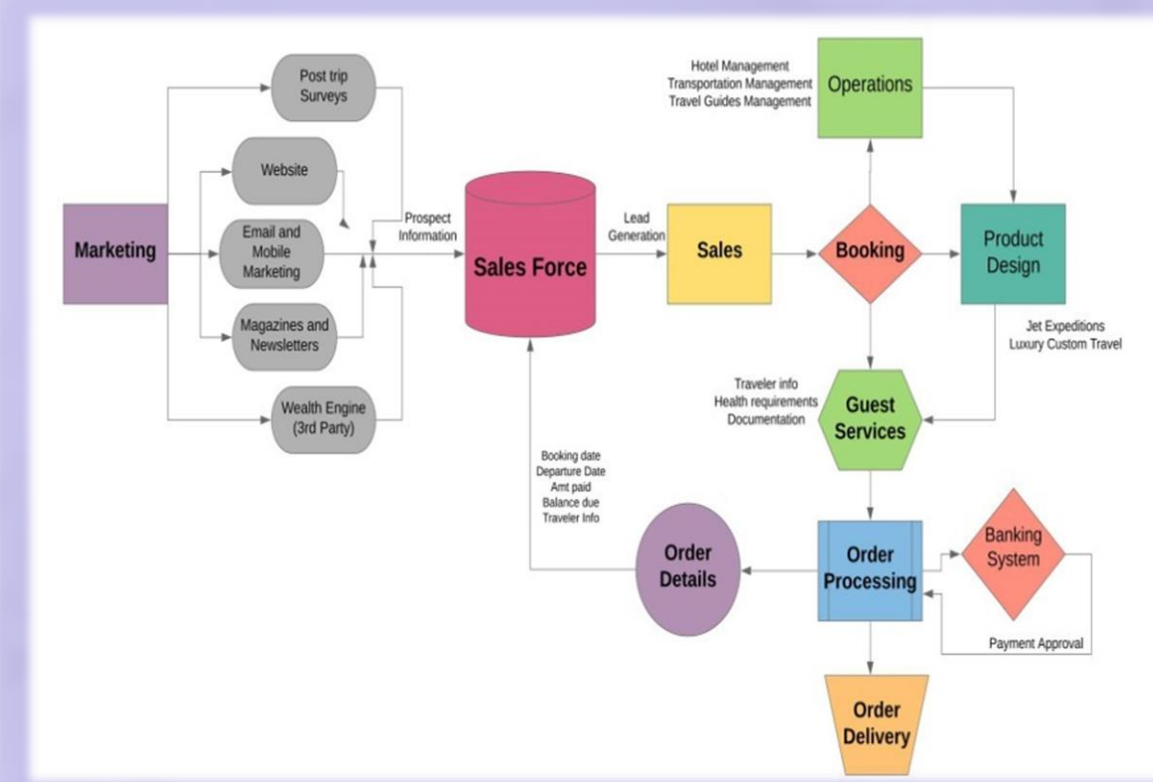
Project Scope

Customer Segmentation based on interest data

Propensity model to measure NBA (Next Best Action) based on customer data

Built word cloud to identify top travel destinations using cognitive services

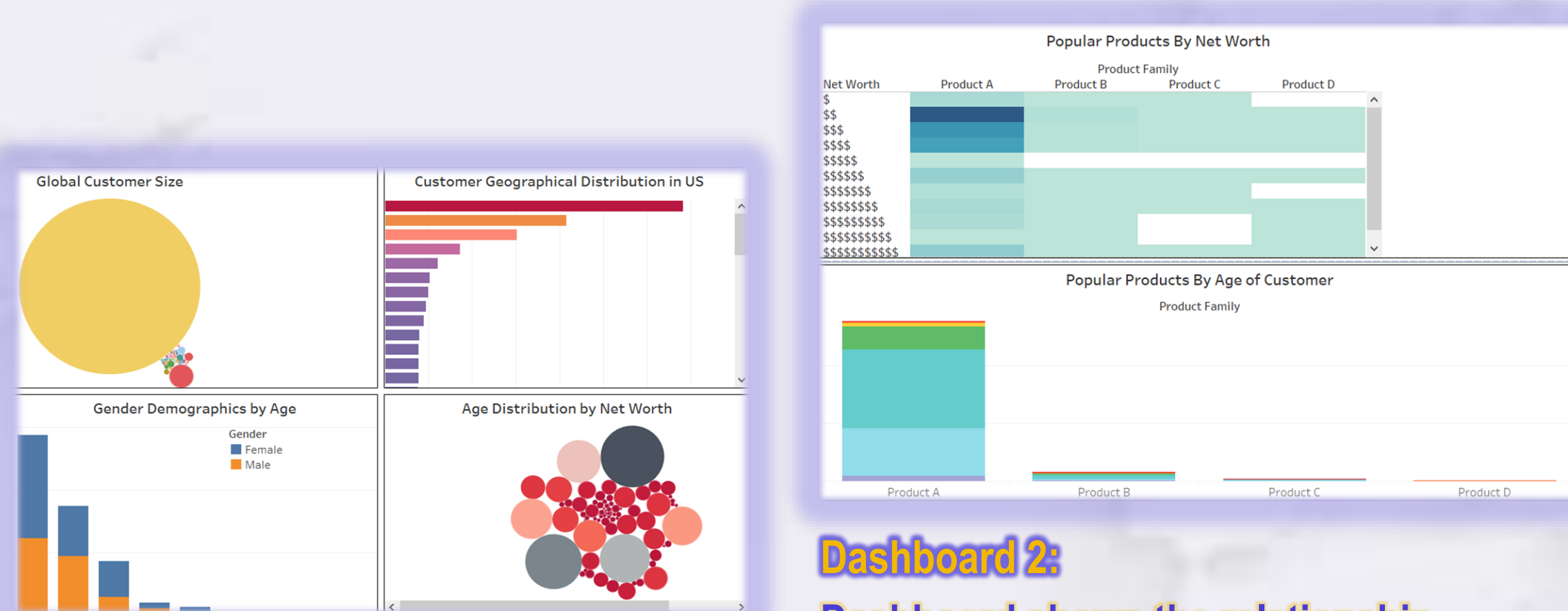| Phase 1	Phase 2	Phase 3	Phase 4
●NDA Documents ●Kickoff meeting ●Project Plan ●Project Charter ●Consultative Reports	●Collect and Analyze Data ●Data Management and Data Discovery ●Performed Descriptive and Diagnostic Analysis	●Perform Predictive analysis ●Perform Data Exploration ●Build Data Models	●Improve Data Models ●Broadcast and Information Delivery ●Evaluate analytical process and present project and solutions

Data Discovery & Analysis

The diagram shows key variables that were used to perform the analysis. The data sources include elements from sales, customer profiles, and product records.

The team performed descriptive and diagnostic analytics using Tableau and Power BI; predictive analytics using Azure ML studio and Python

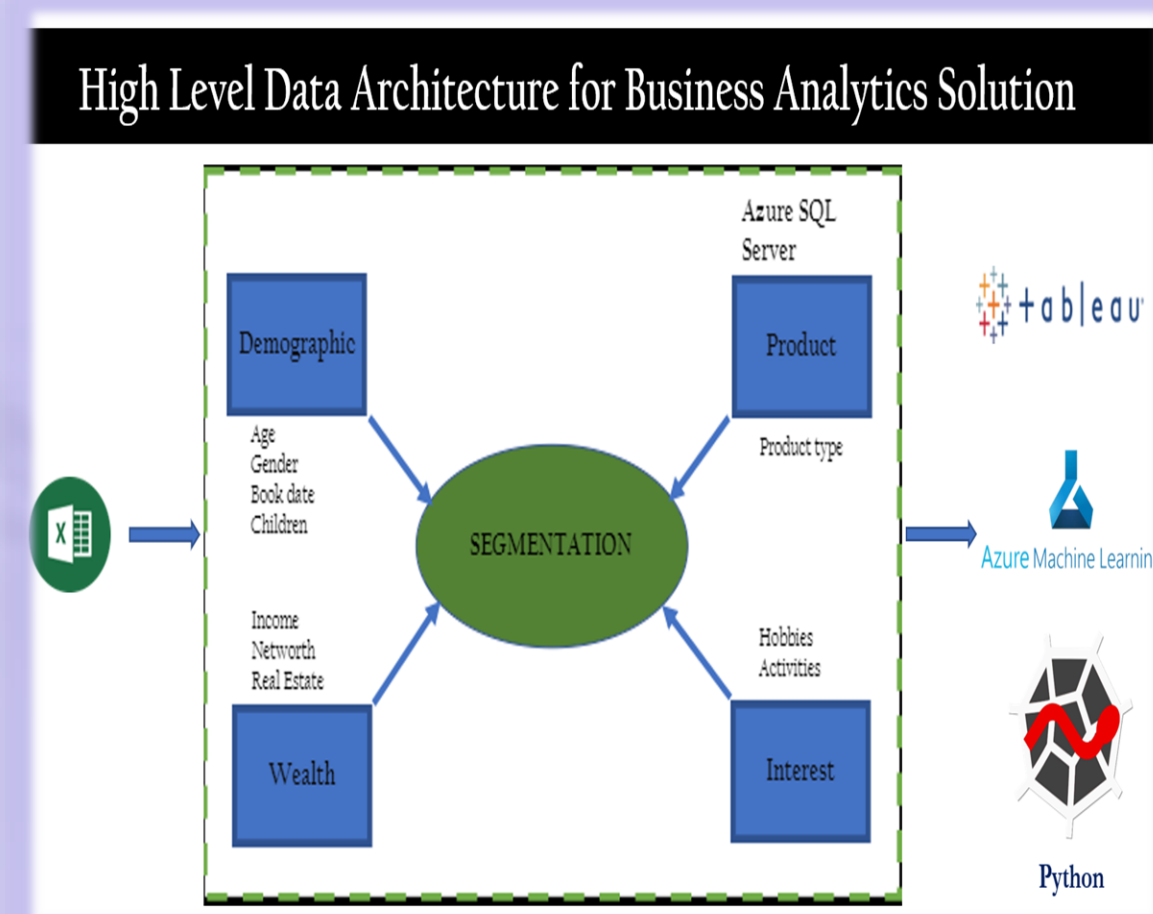## Descriptive and Diagnostic Analytics

Dashboard 1:
Team analyzed relationship between customer base(hometown), age, gender total customer count, and net worth.
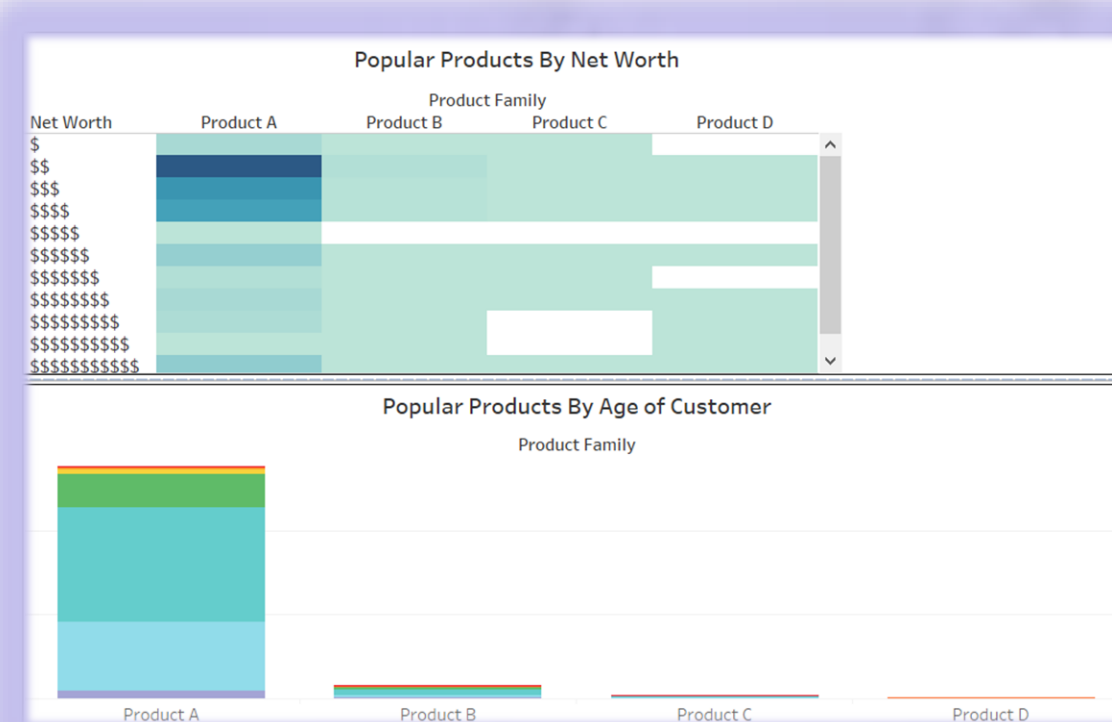

Dashboard 2:
Dashboard shows the relationship between product type and net worth/age.

The data from the SQL server was used to build a live Tableau dashboards for TCS World Travel. The geographical and demographical analyses were performed in Tableau to determine customer base and wealth distribution. (Data from Tableau dashboards have been modified to ensure client confidentiality.)
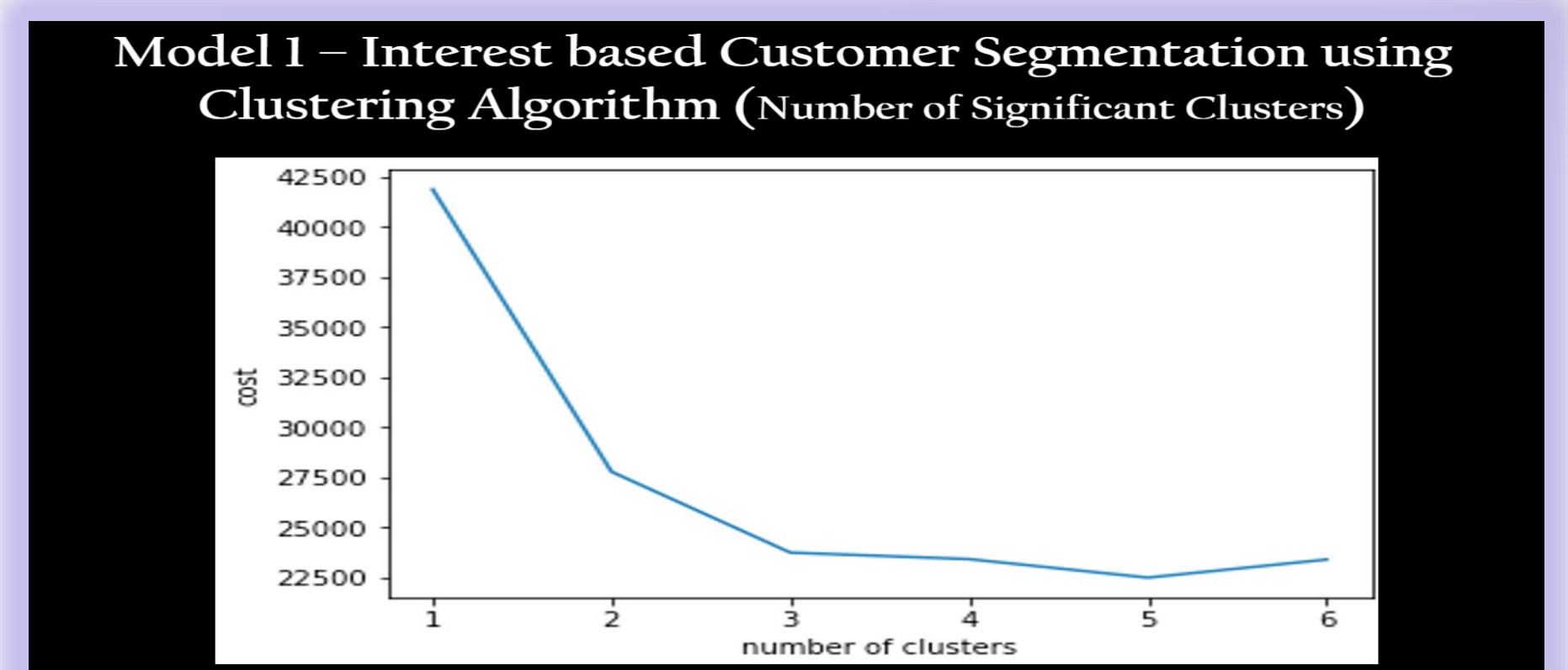
Predictive Analytics
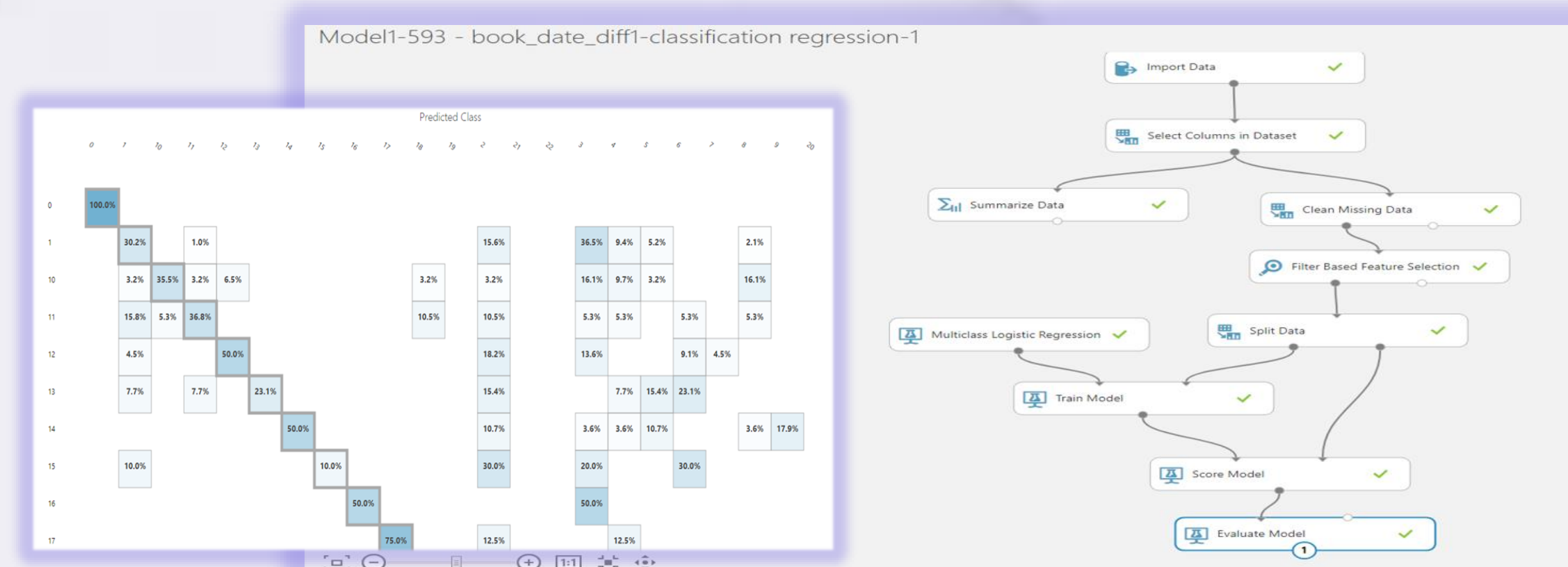
Predictive model was created in Azure Machine Learning Studio to find attributes that indicate the likelihood a customer would respond to their next offer.

**Overall Accuracy of the model was 64.35%**
Average Accuracy was 96.9%
Precision and Recall were 64.35%

Model 1 – Interest based Customer Segmentation using Clustering Algorithm (Number of Significant Clusters)

Elbow graph to identify number of clusters with similar customer interests that can be created within the dataset.

Cognitive Analytics

Top global vacation destinations on Google Searches - 2019
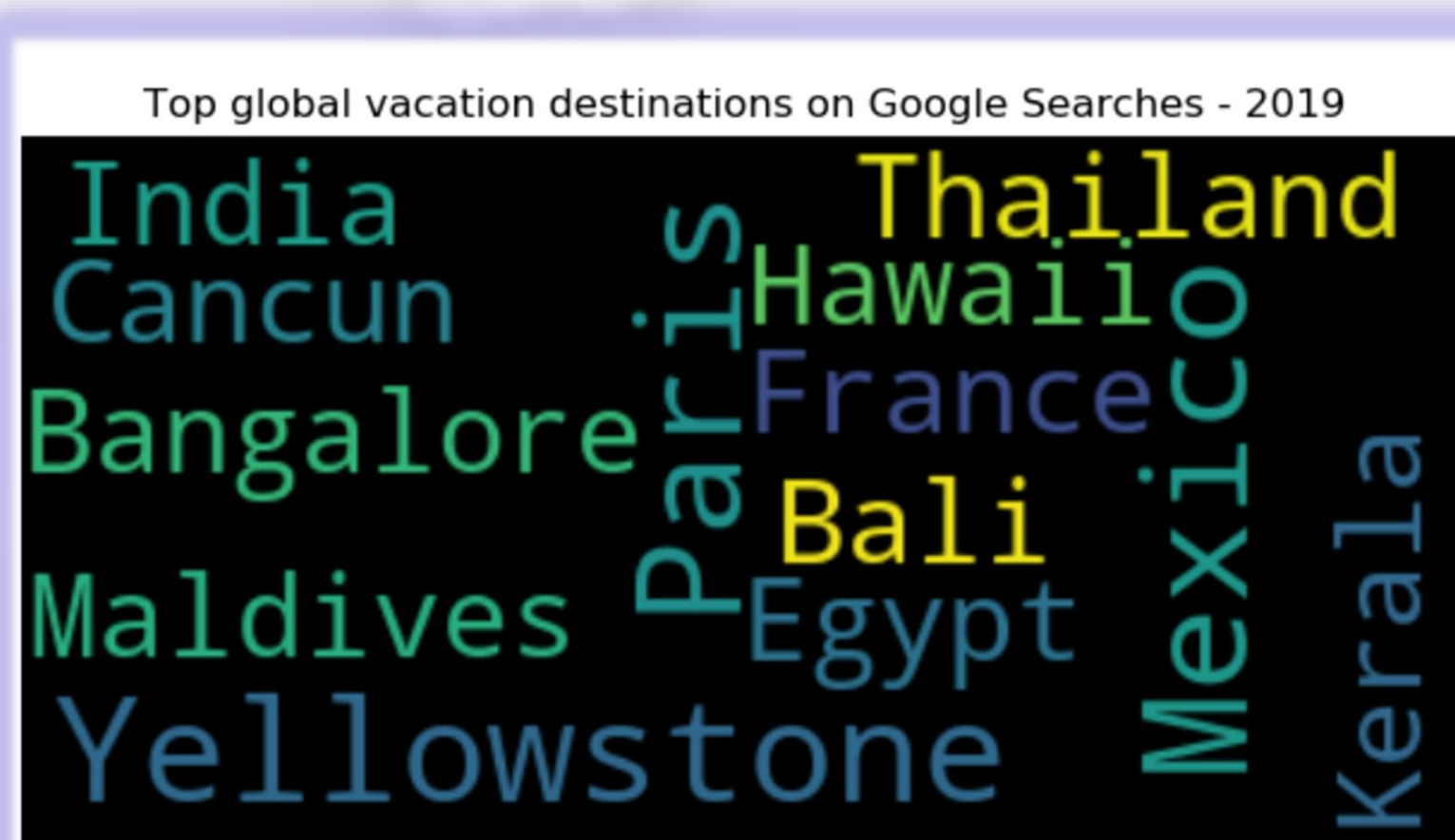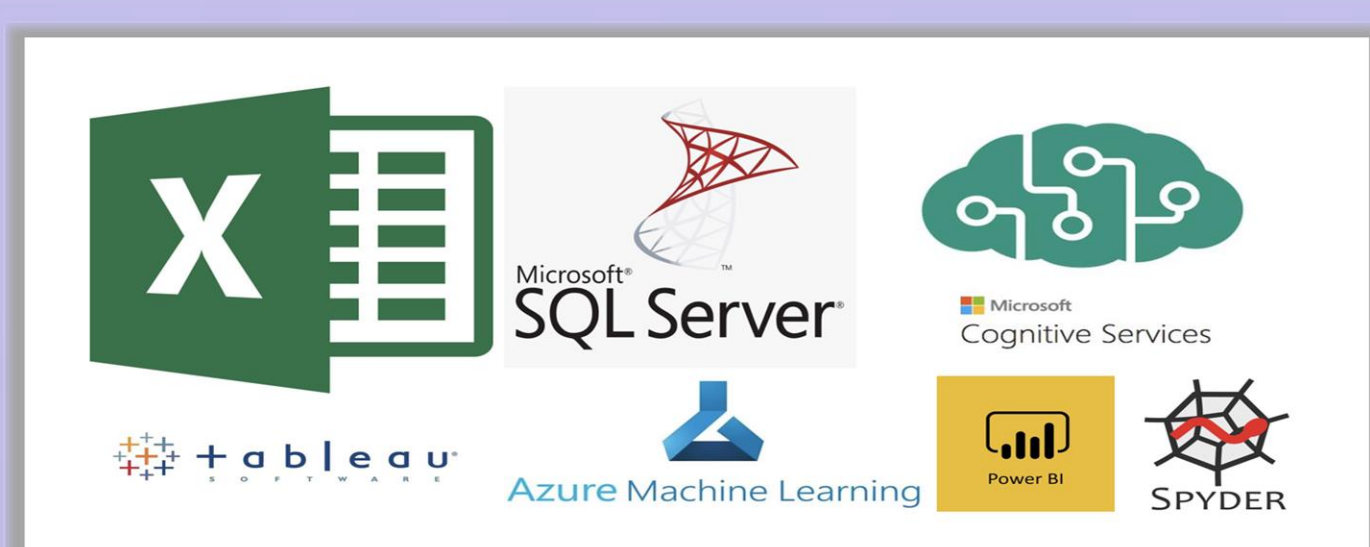
The word cloud for top destinations in the US/India was created using Google trends.

Destinations can be used to build content strategy and new product offerings.

Technology Solutions

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