# Contents

- Executive Summary

- Introduction

- Methodology

- Results

- Conclusion

- Appendix

# Executive Summary

- Summary of methodologies

-

The dataset used in this project consists of 99 samples with various features. Data preprocessing steps like cleaning, normalization, and feature engineering were performed to prepare

# Introduction

- Project background and context

·

This project focuses on developing predictive models to predict and visualize different data points, aiming to improve decision-making in Space X rocket launches.

·

- Problems you want to find answers

·

In the field of machine learning and

Section 1

# Methodology

Section 1

# Methodology

Executive Summary

- Data collection

# Data Collection

- Describe how data sets were collected.

- You need to present your data collection process use key phrases and flowcharts

# Data Collection – SpaceX API

- Present your data collection with SpaceX REST calls using key phrases and flowcharts

- Add the GitHub URL of the completed SpaceX API calls notebook (must include completed code cell and outcome cell), as an external reference and peer-review purpose

Place your flowchart of SpaceX API calls here

# Data Collection - Scraping

- Present your web scraping process using key phrases and flowcharts

- Add the GitHub URL of the completed web scraping notebook, as an external reference and peer-review purpose

Place your flowchart of web scraping here

# Data Wrangling

- Describe how data were processed

- You need to present your data wrangling process using key phrases and flowcharts

- Add the GitHub URL of your completed data wrangling related notebooks, as an external reference and peer-review purpose

# EDA with Data Visualization

- Summarize what charts were plotted and why you used those charts

- Add the GitHub URL of your completed EDA with data visualization notebook, as an external reference and peer-review purpose

# EDA with SQL

- Using bullet point format, summarize the SQL queries you performed

- Add the GitHub URL of your completed EDA with SQL notebook, as an external reference and peer-review purpose

# Build an Interactive Map with Folium

- Summarize what map objects such as markers, circles, lines, etc. you created and added to a folium map

- Explain why you added those objects

- Add the GitHub URL of your completed interactive map with Folium map, as an external reference and peer-review purpose
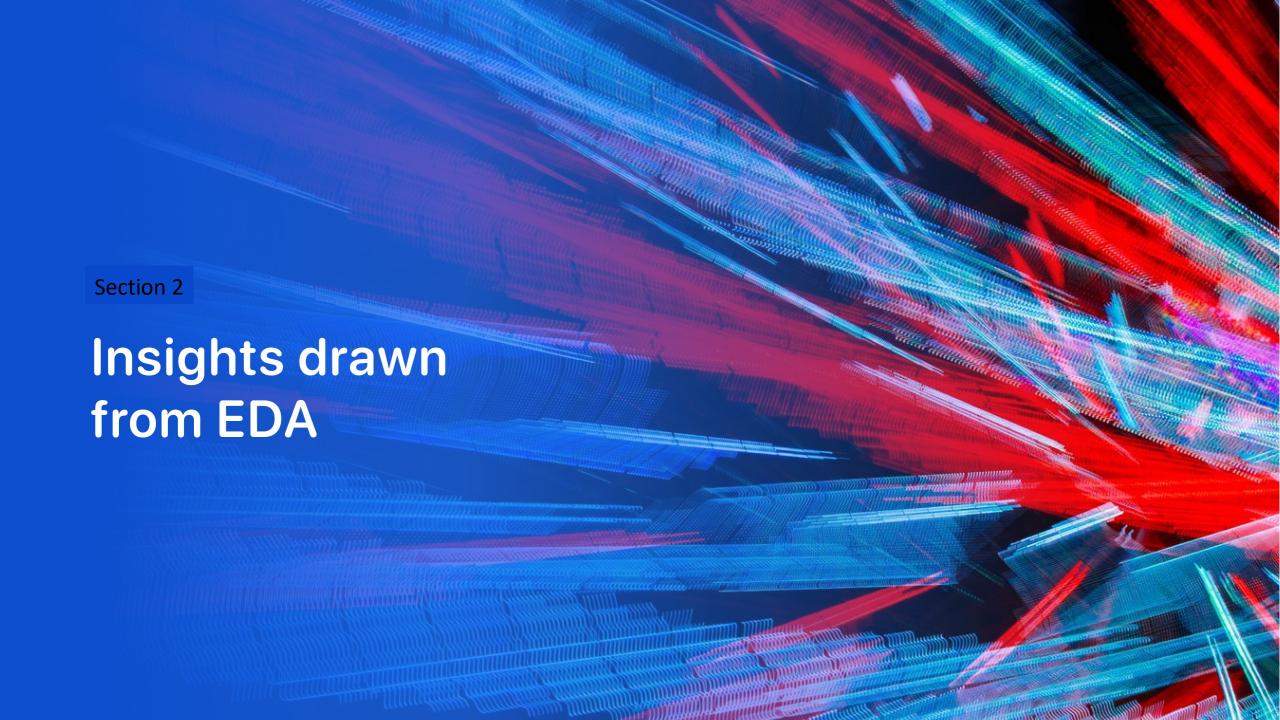
# Build a Dashboard with Plotly Dash

- Summarize what plots/graphs and interactions you have added to a dashboard

- Explain why you added those plots and interactions

- Add the GitHub URL of your completed Plotly Dash lab, as an external reference and peer-review purpose

15

# Predictive Analysis (Classification)

- Summarize how you built, evaluated, improved, and found the best performing classification model

- You need present your model development process using key phrases and flowchart

- Add the GitHub URL of your completed predictive analysis lab, as an external reference and peer-review purpose

# Results

- Exploratory data analysis results

- Interactive analytics demo in screenshots

- Predictive analysis results

# Insights drawn from EDA

# Flight Number vs. Launch Site

- Show a scatter plot
of Flight Number vs.
Launch Site

- Show the screenshot of
the scatter plot with
explanations

# Payload vs. Launch Site

- Show a scatter plot of Payload vs. Launch Site

- Show the screenshot of the scatter plot with explanations

# Success Rate vs. Orbit Type

- Show a bar chart for the success rate of each orbit type

- Show the screenshot of the scatter plot with explanations

# Flight Number vs. Orbit Type

- Show a scatter point of Flight number vs. Orbit type

- Show the screenshot of the scatter plot with explanations

# Payload vs. Orbit Type

- Show a scatter point of payload vs. orbit type

- Show the screenshot of the scatter plot with explanations

# Launch Success Yearly Trend

- Show a line chart of yearly average success rate

- Show the screenshot of the scatter plot with explanations

# All Launch Site Names

- Find the names of the unique launch sites

- Present your query result with a short explanation here

# Launch Site Names Begin with 'CCA'

- Find 5 records where launch sites begin with `CCA`

- Present your query result with a short explanation here

# Total Payload Mass

- Calculate the total payload carried by boosters from NASA
- Present your query result with a short explanation here

# Average Payload Mass by F9 v1.1

- Calculate the average payload mass carried by booster version F9 v1.1

- Present your query result with a short explanation here

# First Successful Ground Landing Date

- Find the dates of the first successful landing outcome on ground pad
- Present your query result with a short explanation here

# Successful Drone Ship Landing with Payload between 4000 and 6000

- List the names of boosters which have successfully landed on drone ship and had payload mass greater than 4000 but less than 6000

- Present your query result with a short explanation here

# Total Number of Successful and Failure Mission Outcomes

- Calculate the total number of successful and failure mission outcomes

- Present your query result with a short explanation here

# Boosters Carried Maximum Payload

- List the names of the booster which have carried the maximum payload mass

- Present your query result with a short explanation here

# 2015 Launch Records

- List the failed landing_outcomes in drone ship, their booster versions, and launch site names for in year 2015

- Present your query result with a short explanation here

# Rank Landing Outcomes Between 2010-06-04 and 2017-03-20

- Rank the count of landing outcomes (such as Failure (drone ship) or Success (ground pad)) between the date 2010-06-04 and 2017-03-20, in descending order


- Present your query result with a short explanation here

Section 3

# Launch Sites
# Proximities Analysis

# <Folium Map Screenshot 1>

- Replace <Folium map screenshot 1> title with an appropriate title

- Explore the generated folium map and make a proper screenshot to include all launch sites' location markers on a global map

- Explain the important elements and findings on the screenshot

# <Folium Map Screenshot 2>

- Replace <Folium map screenshot 2> title with an appropriate title

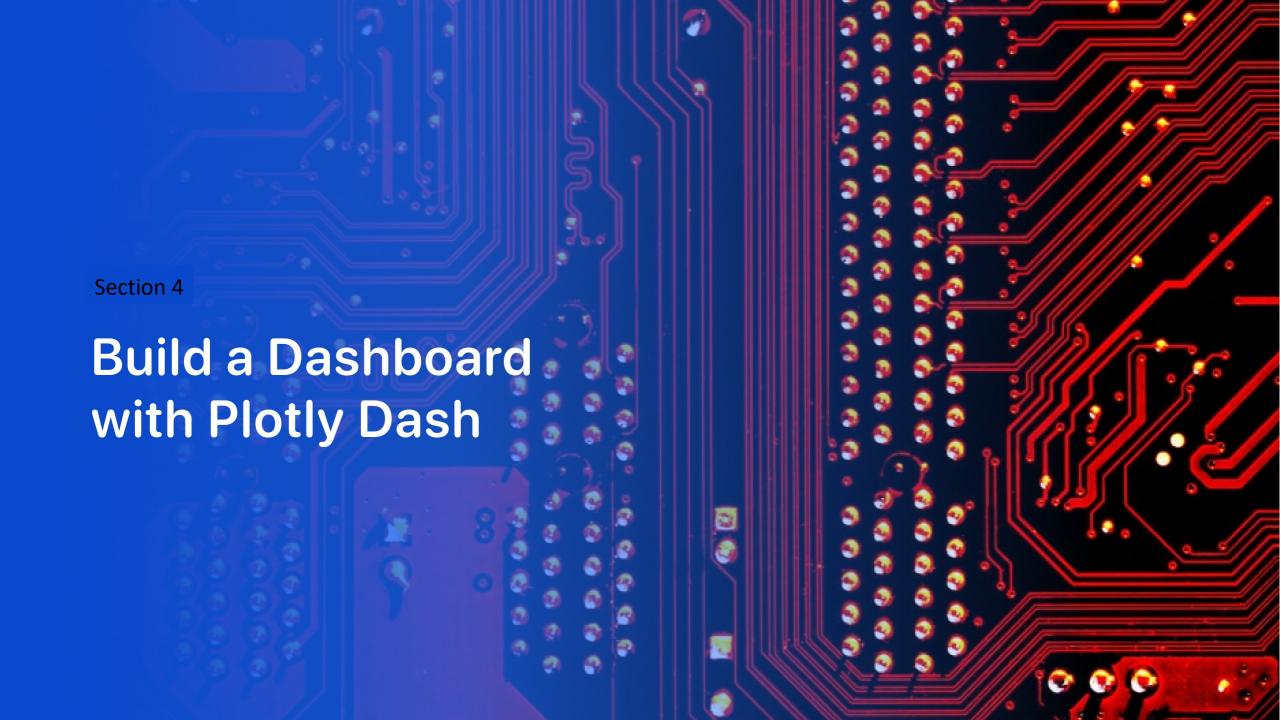- Explore the folium map and make a proper screenshot to show the color-labeled launch outcomes on the map

- Explain the important elements and findings on the screenshot

# <Folium Map Screenshot 3>

- Replace <Folium map screenshot 3> title with an appropriate title

- Explore the generated folium map and show the screenshot of a selected launch site to its proximities such as railway, highway, coastline, with distance calculated and displayed

- Explain the important elements and findings on the screenshot

38

Section 4

# Build a Dashboard
# with Plotly Dash

# &lt;Dashboard Screenshot 1&gt;

- Replace &lt;Dashboard screenshot 1&gt; title with an appropriate title

- Show the screenshot of launch success count for all sites, in a piechart

- Explain the important elements and findings on the screenshot

# &lt;Dashboard Screenshot 2&gt;

- Replace &lt;Dashboard screenshot 2&gt; title with an appropriate title

- Show the screenshot of the piechart for the launch site with highest launch success ratio

- Explain the important elements and findings on the screenshot

# &lt;Dashboard Screenshot 3&gt;

- Replace &lt;Dashboard screenshot 3&gt; title with an appropriate title

- Show screenshots of Payload vs. Launch Outcome scatter plot for all sites, with different payload selected in the range slider

- Explain the important elements and findings on the screenshot, such as which payload range or booster version have the largest success rate, etc.

Section 5

# Predictive Analysis (Classification)

# Classification Accuracy

- Visualize the built model accuracy
  for all built classification models,
  in a bar chart

- Find which model has the highest
  classification accuracy

# Confusion Matrix

- Show the confusion matrix of the best performing model with an explanation

# Conclusions

- Point 1

- Point 2

- Point 3

- Point 4

- …

# Appendix

- Include any relevant assets like Python code snippets, SQL queries, charts, Notebook outputs, or data sets that you may have created during this project

# Thank you!