A NEW HINT TO TRANSPORTATION - ANALYSIS OF THE NYC BIKE SHARE SYSTEM

Assignment Date	5th October 2022
Student Name	Mr. Kishore M
Student Roll Number	717819F127

TASK:

Upload the dataset to Cognos Analytics, Explore and Visualize the 50-startups dataset.

DATASET USED:

This particular dataset holds data from 50 startups in New York, California, and Florida. The
features in this dataset are **R&D spending**, **Administration Spending**, **Marketing Spending**, and **Location features**, while the target variable is: **Profit**.

1. **R&D spending**: The amount which startups are spending on Research and development.
2. **Administration spending**: The amount which startups are spending on the Admin panel.
3. **Marketing spending**: The amount which startups are spending on marketing strategies.
4. **State**: To which state that particular startup belongs.
5. **Profit**: How much profit that particular startup is making.

SOLUTION:

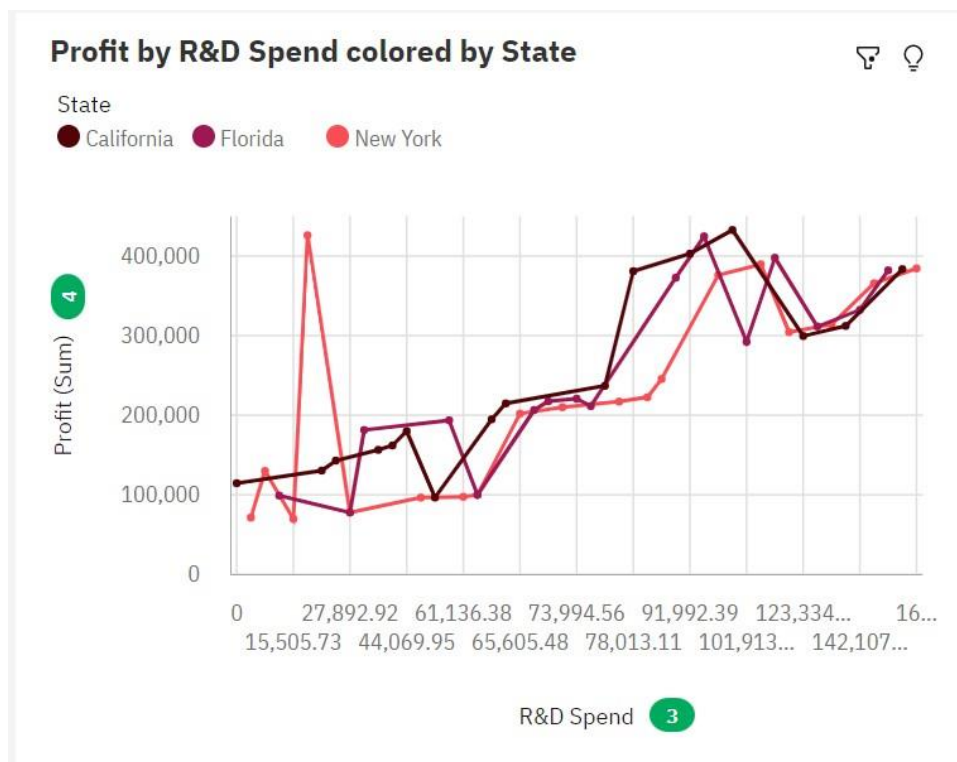# Content

50_Startups.csv

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CSV

As highlighted by the red box, the dataset *50_Startups.csv* was successfully **uploaded** onto the IBM Cognos platform.

EXPLORATION AND VISUALIZATION OF THE DATASET:

Visualization #1:

Profit by R&D Spend colored by State

State
- California ● Florida ● New York

Profit (Sum)

400,000

4

300,000

200,000

100,000

0

| 0 | 27,892.92 | 61,136.38 | 73,994.56 | 91,992.39 | 123,334... | 16... |
| | 15,505.73 | 44,069.95 | 65,605.48 | 78,013.11 | 101,913... | 142,107... |

R&D Spend 3

This chart plots the correlation between R&D expenditure and Profit in each state. It is observed that in general the profit increases with increase in R&D expenditure

Fields

⌐→ **x-axis***   Required field

⠿   R&D Spend   ⋮

> Click or drag data here

🎨 Color

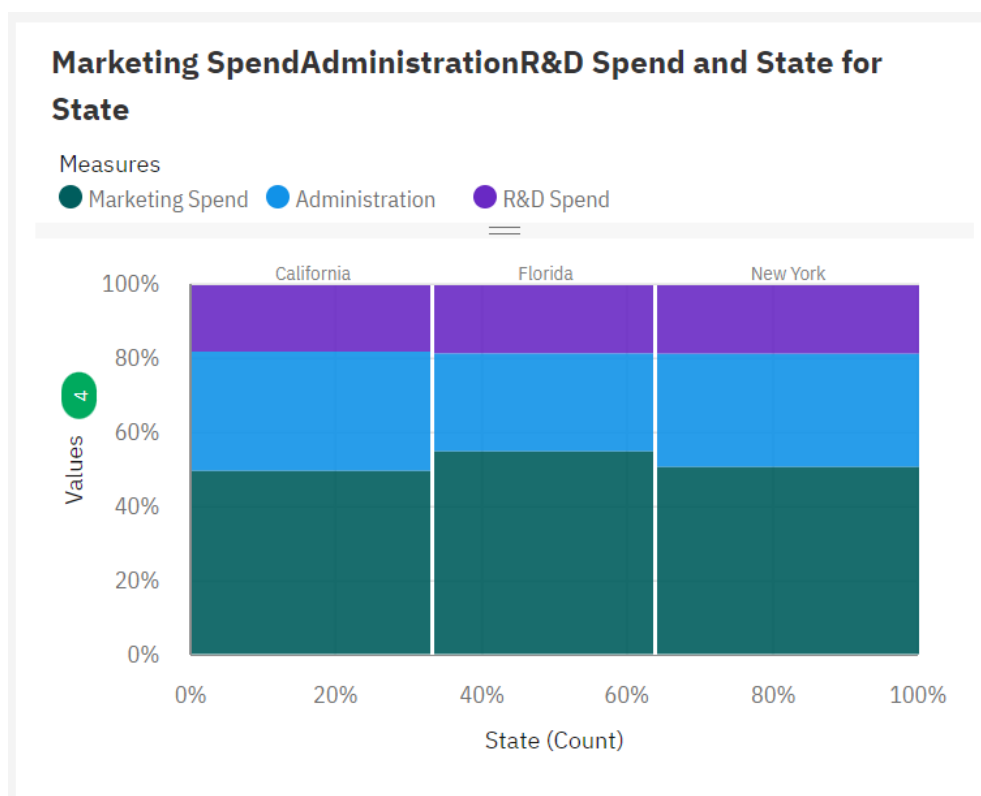⠿   **State**   ⋮
    Includes: Florida, ...w York, California   ③

> Click or drag data here

\#   **y-axis***   Required field

⠿   Profit   ⋮

Visualization #2:

This Marimekko shows the percentage of money that was spent in Marketing, R&D and Administration in each state. The width of each bar is decided by the number of startups in each state

Fields

⊪ Bars*   Required field

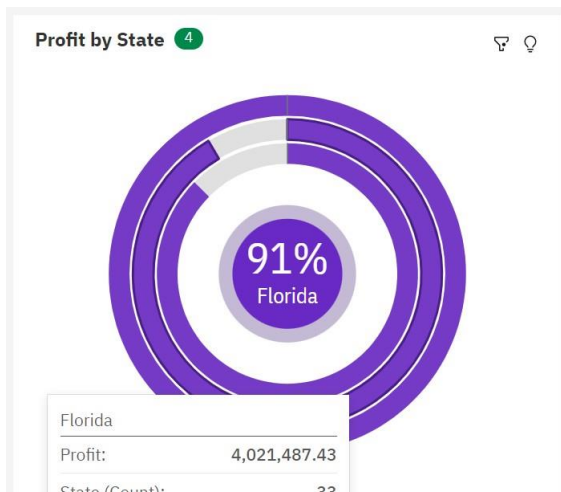⠿   State   ⋮

Click or drag data here

↳ Length*   Required field

⠿   Marketing Spend   ⋮

⠿   Administration   ⋮

⠿   R&D Spend   ⋮

Visualization #3:

Profit by State 4

91%
Florida

Florida
Profit: 4,021,487.43
State (Count):   33

Profit by State 4

New York
Profit: 4,397,455.81
State (Count):   39

100%
New York

Profit by State 4

87%
California

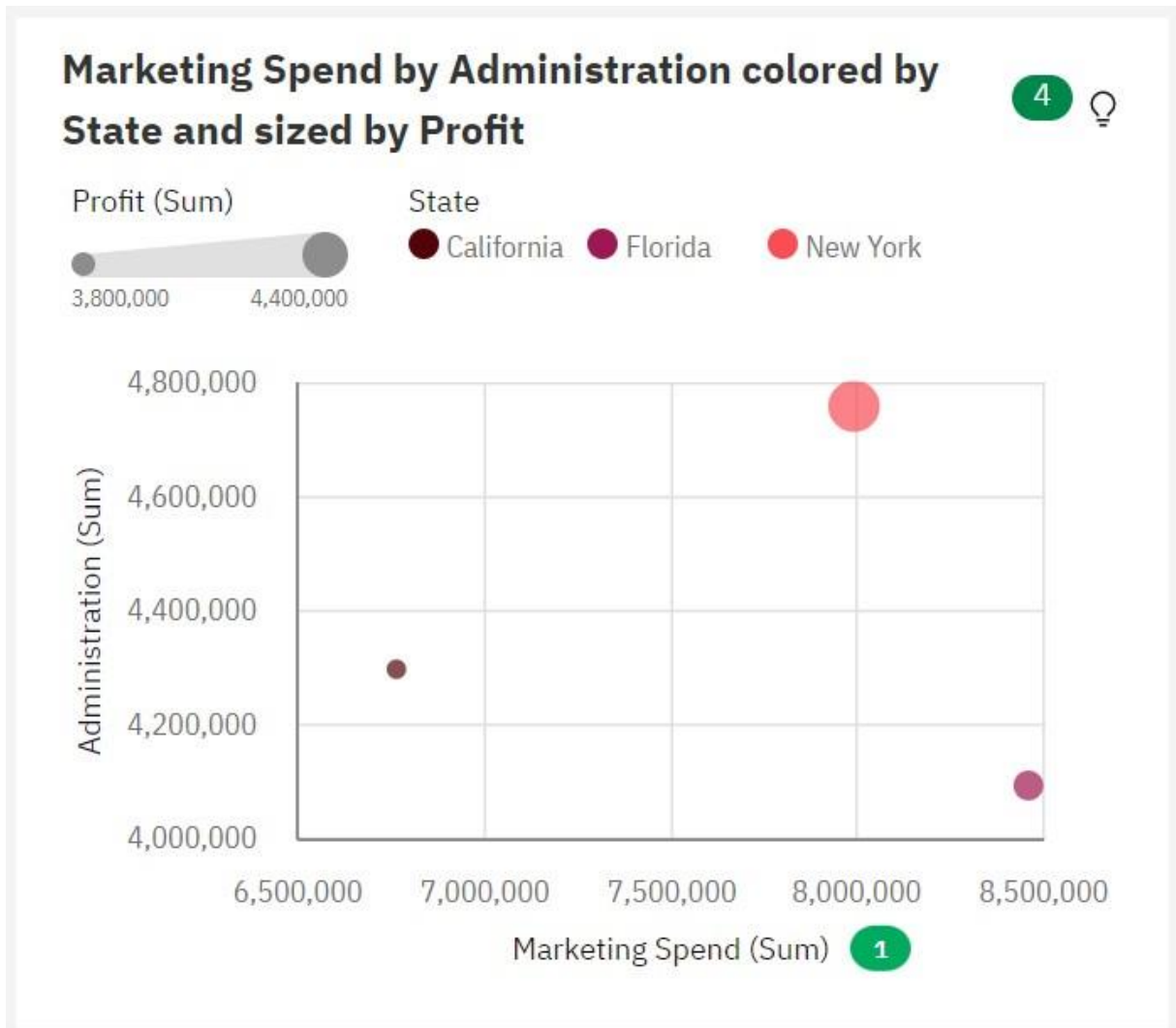| California	
Profit:	3,841,622.84
State (Count):	36

This Radial graph compares the net profit amount generated in each state. Since New York generated the highest profit, comparisons are done keeping New York as a base. California and Florida generated 91% and 87% of the profit that New York Generated.

Visualization #4:

Marketing Spend by Administration colored by State and sized by Profit

This bubble plot gives us the combination of Marketing Spend and Administration Spend and the profit for each combination. The size of the bubbles indicate the amount of profit. Bigger sphere - bigger profit.

Fields
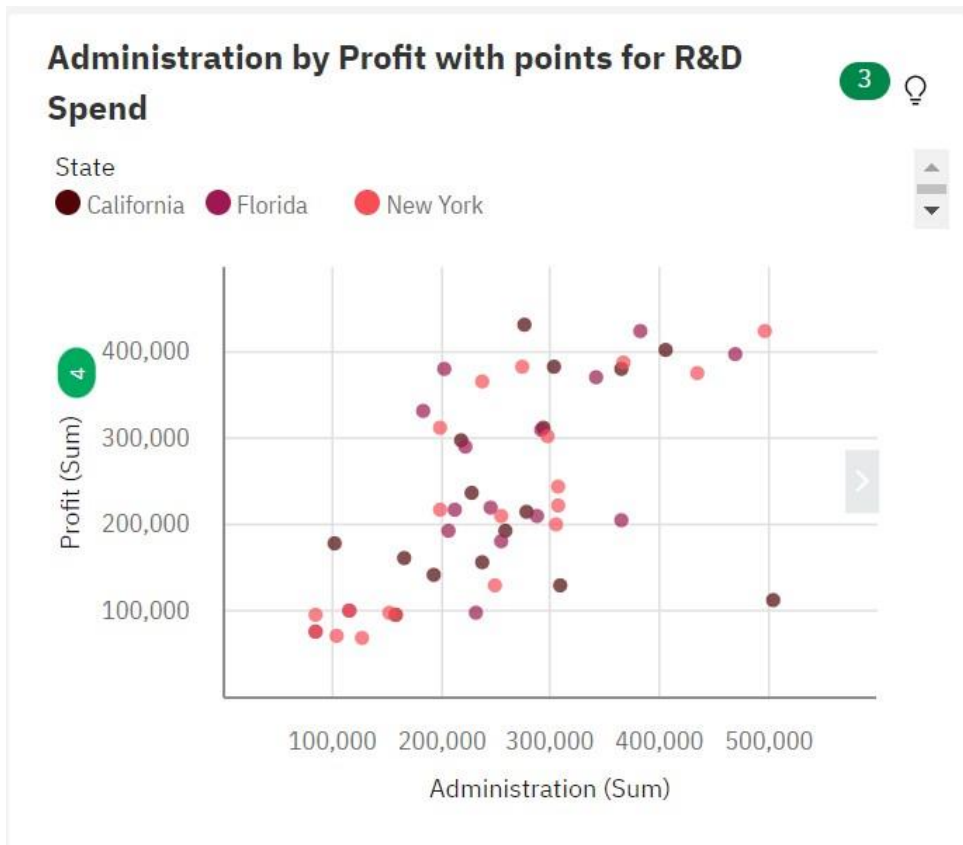
Points

State
Includes: Californ... Florida, New York   3

Click or drag data here

x-axis*   Required field

Marketing Spend

Click or drag data here

Visualization #5:

Administration by Profit with points for R&D Spend

State
● California ● Florida ● New York

This scatter plot shows the relation between Administration spend and profit and the startups of the different states are differentiated by colour.

Fields

∴ Points

⠿ Administration ⋮

Click or drag data here

↳ x-axis*   Required field

⠿ Administration ⋮

Click or drag data here

↳ y-axis*   Required field

⠿ Profit ⋮

Visualization #6:

State, Marketing Spend, Profit, R&D Spend and Administration

State	R&D Spend	Administration	Marketing Sp...
California	2,422,612.31	4,296,570.55	6,762,349.47
Florida	2,798,837.27	4,094,296.26	8,460,023.62
New York	2,874,159	4,758,218.39	7,992,514.7
Summary	8,095,608.58	13,149,085.2	23,214,887.79

The above table aggregates data from all rows and gets the count of net spend for each column for each state and generates a total summary

Fields

Columns*   Required field

⠿ State   ⋮

⠿ R&D Spend   ⋮

⠿ Administration   ⋮

⠿ Marketing Spend   ⋮

⠿ Profit   ⋮