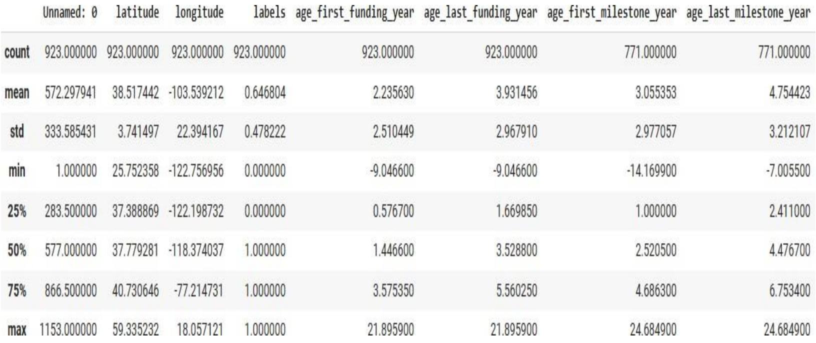
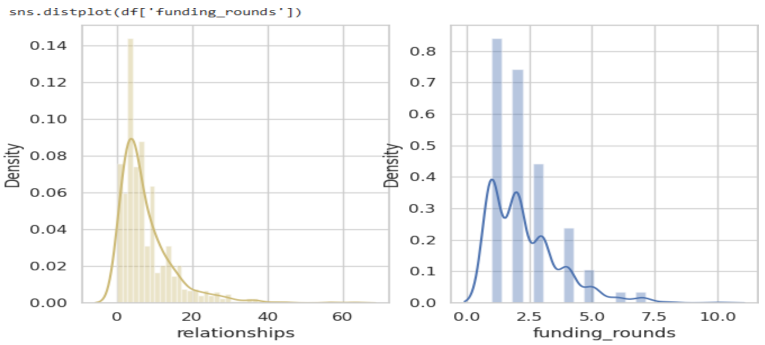
Data Collection and Preprocessing Phase

Date	21 June 2024
Team ID	TMID739832
Project Title	Startup Prophet
Maximum Marks	6 Marks

Data Exploration and Preprocessing Report

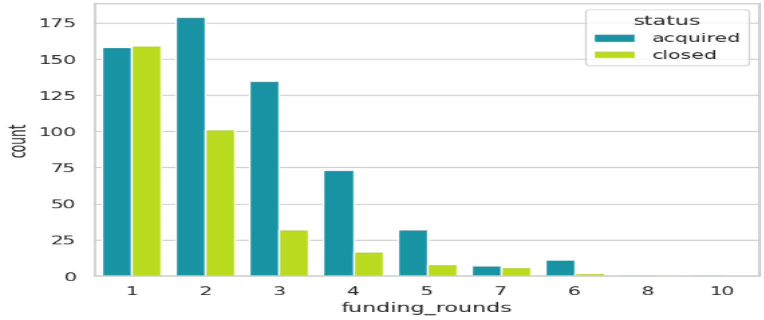
Dataset variables will be statistically analyzed to identify patterns and outliers, with Python employed for preprocessing tasks like normalization and feature engineering. Data cleaning will address missing values and outliers, ensuring quality for subsequent analysis and modeling, and forming a strong foundation for insights and predictions.

<table>
<tr><th>Section</th><th>Description</th></tr>
<tr><td>Data Overview</td><td>
<u>Dimension:</u>
923 rows × 13 columns
<u>Descriptive statistics:</u>

<table>
<tr><th></th><th>Unnamed: 0</th><th>latitude</th><th>longitude</th><th>labels</th><th>age_first_funding_year</th><th>age_last_funding_year</th><th>age_first_milestone_year</th><th>age_last_milestone_year</th></tr>
<tr><td>count</td><td>923.000000</td><td>923.000000</td><td>923.000000</td><td>923.000000</td><td>923.000000</td><td>923.000000</td><td>771.000000</td><td>771.000000</td></tr>
<tr><td>mean</td><td>572.297941</td><td>38.517442</td><td>-103.539212</td><td>0.646804</td><td>2.235630</td><td>3.931456</td><td>3.055353</td><td>4.754423</td></tr>
<tr><td>std</td><td>333.585431</td><td>3.741497</td><td>22.394167</td><td>0.478222</td><td>2.510449</td><td>2.967910</td><td>2.977057</td><td>3.212107</td></tr>
<tr><td>min</td><td>1.000000</td><td>25.752358</td><td>-122.756956</td><td>0.000000</td><td>-9.046600</td><td>-9.046600</td><td>-14.169900</td><td>-7.005500</td></tr>
<tr><td>25%</td><td>283.500000</td><td>37.388869</td><td>-122.198732</td><td>0.000000</td><td>0.576700</td><td>1.669850</td><td>1.000000</td><td>2.411000</td></tr>
<tr><td>50%</td><td>577.000000</td><td>37.779281</td><td>-118.374037</td><td>1.000000</td><td>1.446600</td><td>3.528800</td><td>2.520500</td><td>4.476700</td></tr>
<tr><td>75%</td><td>866.500000</td><td>40.730646</td><td>-77.214731</td><td>1.000000</td><td>3.575350</td><td>5.560250</td><td>4.686300</td><td>6.753400</td></tr>
<tr><td>max</td><td>1153.000000</td><td>59.335232</td><td>18.057121</td><td>1.000000</td><td>21.895900</td><td>21.895900</td><td>24.684900</td><td>24.684900</td></tr>
</table>
</td></tr>
<tr><td>Univariate Analysis</td><td></td></tr>
</table>

<table>
<tr>
<td></td>
<td>


sns.distplot(df['funding_rounds'])

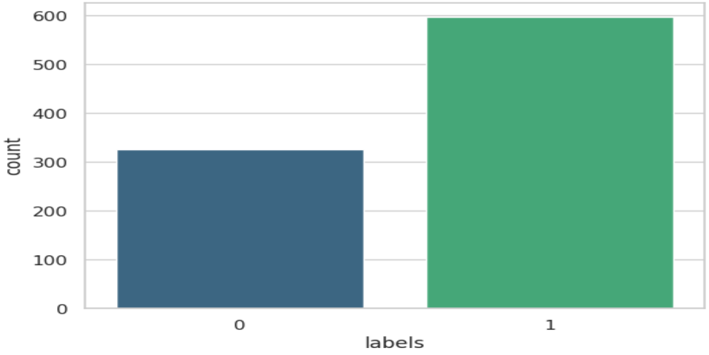
</td>
</tr>
<tr>
<td>Bivariate Analysis</td>
<td>
<Axes: xlabel='funding_rounds', ylabel='count'>



<ipython-input-16-8d78e83965e3>:2: FutureWarning:

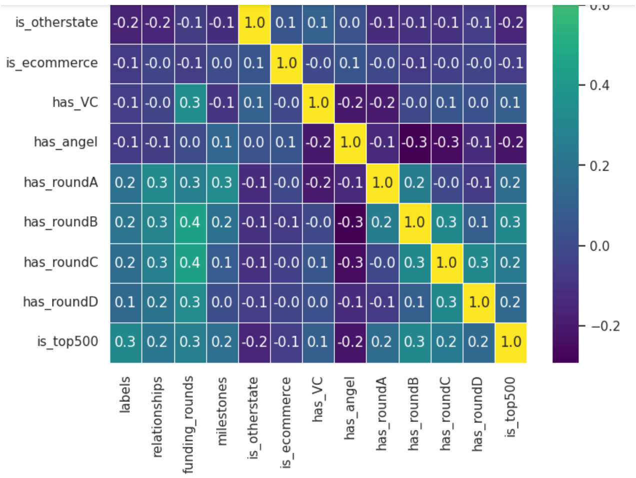
Passing `palette` without assigning `hue` is deprecated and will be removed in

  sns.countplot(x=df['labels'],palette='viridis')
<Axes: xlabel='labels', ylabel='count'>



</td>
</tr>
</table>

Multivariate Analysis

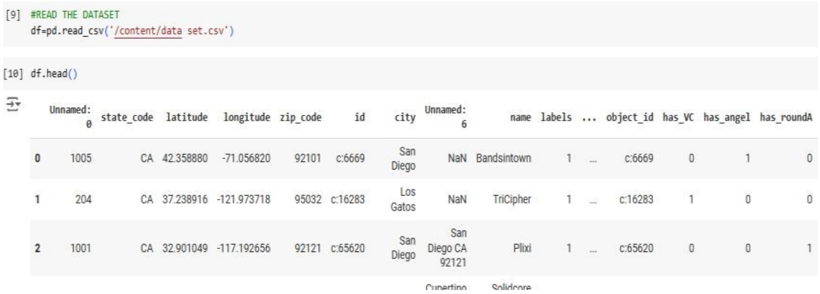


Outliers and Anomalies

-

Data Preprocessing Code Screenshots

Loading Data

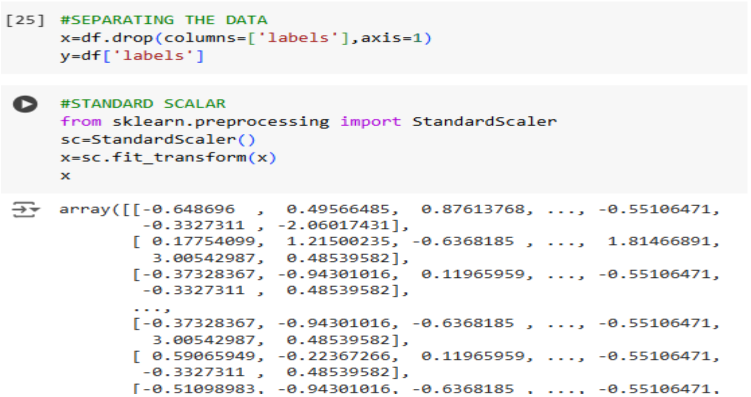


```
[9]  #READ THE DATASET
     df=pd.read_csv('/content/data set.csv')
```

```
[10] df.head()
```

```
   Unnamed:  state_code  latitude   longitude  zip_code       id    city  Unnamed:         name  labels  ...  object_id  has_VC  has_angel  has_roundA
          0                                                                       6
0      1005          CA  42.358880  -71.056820    92101   c:6669     San       NaN  Bandsintown       1  ...     c:6669       0          1           0
                                                                   Diego
1       204          CA  37.238916  -121.973718   95032  c:16283     Los       NaN    TriCipher       1  ...    c:16283       1          0           0
                                                                   Gatos
2      1001          CA  32.901049  -117.192656   92121  c:65620     San       San        Plixi       1  ...    c:65620       0          0           1
                                                                   Diego  Diego CA
                                                                             92121
                                                                        Cupertino   Solidcore
```

Handling Missing Data

Data Transformation	
Feature Engineering	Attached the codes in final submission.
Save Processed Data	-

```
[25] #SEPARATING THE DATA
     x=df.drop(columns=['labels'],axis=1)
     y=df['labels']
```

```
#STANDARD SCALAR
from sklearn.preprocessing import StandardScaler
sc=StandardScaler()
x=sc.fit_transform(x)
x
```

```
array([[-0.648696  ,  0.49566485,  0.87613768, ..., -0.55106471,
        -0.3327311 , -2.06017431],
       [ 0.17754099,  1.21500235, -0.6368185 , ...,  1.81466891,
         3.00542987,  0.48539582],
       [-0.37328367, -0.94301016,  0.11965959, ..., -0.55106471,
        -0.3327311 ,  0.48539582],
       ...,
       [-0.37328367, -0.94301016, -0.6368185 , ..., -0.55106471,
         3.00542987,  0.48539582],
       [ 0.59065949, -0.22367266,  0.11965959, ..., -0.55106471,
        -0.3327311 ,  0.48539582],
       [-0.51098983, -0.94301016, -0.6368185 , ..., -0.55106471,
```