In [1]:

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

DATA COLLECTION

In [2]:

```
a=pd.read_csv(r"C:\Users\user\Downloads\uber - uber.csv")
a
```

Out[2]:

	Unnamed: 0	key	fare_amount	pickup_datetime	pickup_longitude	pickup_latitude
0	24238194	2015-05-07 19:52:06	7.5	2015-05-07 19:52:06 UTC	-73.999817	40.738354
1	27835199	2009-07-17 20:04:56	7.7	2009-07-17 20:04:56 UTC	-73.994355	40.728225
2	44984355	2009-08-24 21:45:00	12.9	2009-08-24 21:45:00 UTC	-74.005043	40.740770
3	25894730	2009-06-26 8:22:21	5.3	2009-06-26 08:22:21 UTC	-73.976124	40.790844
4	17610152	2014-08-28 17:47:00	16.0	2014-08-28 17:47:00 UTC	-73.925023	40.744085
...	...	...	...	...	...	...
199995	42598914	2012-10-28 10:49:00	3.0	2012-10-28 10:49:00 UTC	-73.987042	40.739367
199996	16382965	2014-03-14 1:09:00	7.5	2014-03-14 01:09:00 UTC	-73.984722	40.736837
199997	27804658	2009-06-29 0:42:00	30.9	2009-06-29 00:42:00 UTC	-73.986017	40.756487
199998	20259894	2015-05-20 14:56:25	14.5	2015-05-20 14:56:25 UTC	-73.997124	40.725452
199999	11951496	2010-05-15 4:08:00	14.1	2010-05-15 04:08:00 UTC	-73.984395	40.720077

200000 rows × 9 columns

In [3]:

```
b=a.head(100)
b
```

Out[3]:

	Unnamed: 0	key	fare_amount	pickup_datetime	pickup_longitude	pickup_latitude	dro
0	24238194	2015-05-07 19:52:06	7.5	2015-05-07 19:52:06 UTC	-73.999817	40.738354	
1	27835199	2009-07-17 20:04:56	7.7	2009-07-17 20:04:56 UTC	-73.994355	40.728225	
2	44984355	2009-08-24 21:45:00	12.9	2009-08-24 21:45:00 UTC	-74.005043	40.740770	
3	25894730	2009-06-26 8:22:21	5.3	2009-06-26 08:22:21 UTC	-73.976124	40.790844	
4	17610152	2014-08-28 17:47:00	16.0	2014-08-28 17:47:00 UTC	-73.925023	40.744085	
...	...	...	...	...	...	...	
95	25431833	2015-04-11 8:47:47	9.5	2015-04-11 08:47:47 UTC	-73.978432	40.752399	
96	44792012	2011-10-03 20:29:00	4.5	2011-10-03 20:29:00 UTC	-73.990055	40.756413	
97	18571020	2010-04-26 3:12:44	3.3	2010-04-26 03:12:44 UTC	-73.982326	40.731314	
98	37942404	2011-11-18 9:51:00	30.9	2011-11-18 09:51:00 UTC	-73.995888	40.759078	
99	29024472	2009-08-30 14:03:55	26.9	2009-08-30 14:03:55 UTC	-73.990137	40.756007	

100 rows × 9 columns

DATA CLEANING AND PRE-PROCESSING

In [4]:

```
b.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 100 entries, 0 to 99
Data columns (total 9 columns):
 #   Column             Non-Null Count  Dtype  
---  ------             --------------  -----  
 0   Unnamed: 0         100 non-null    int64  
 1   key                100 non-null    object 
 2   fare_amount        100 non-null    float64
 3   pickup_datetime    100 non-null    object 
 4   pickup_longitude   100 non-null    float64
 5   pickup_latitude    100 non-null    float64
 6   dropoff_longitude  100 non-null    float64
 7   dropoff_latitude   100 non-null    float64
 8   passenger_count    100 non-null    int64  
dtypes: float64(5), int64(2), object(2)
memory usage: 7.2+ KB
```

In [5]:

```
b.describe()
```

Out[5]:

	Unnamed: 0	fare_amount	pickup_longitude	pickup_latitude	dropoff_longitude	dropc
count	1.000000e+02	100.000000	100.000000	100.000000	100.000000	
mean	2.810554e+07	11.065700	-71.019759	39.123621	-71.015479	
std	1.635033e+07	9.029756	14.569902	8.026358	14.569028	
min	2.268700e+05	2.500000	-74.013173	0.000000	-74.016152	
25%	1.422691e+07	5.475000	-73.992601	40.733982	-73.989142	
50%	2.710896e+07	8.100000	-73.982002	40.752764	-73.979396	
75%	4.480811e+07	12.600000	-73.968615	40.765572	-73.960980	
max	5.508597e+07	56.800000	0.000000	40.850558	0.000000	

In [6]:

```
b.columns
```

Out[6]:

```
Index(['Unnamed: 0', 'key', 'fare_amount', 'pickup_datetime',
       'pickup_longitude', 'pickup_latitude', 'dropoff_longitude',
       'dropoff_latitude', 'passenger_count'],
      dtype='object')
```

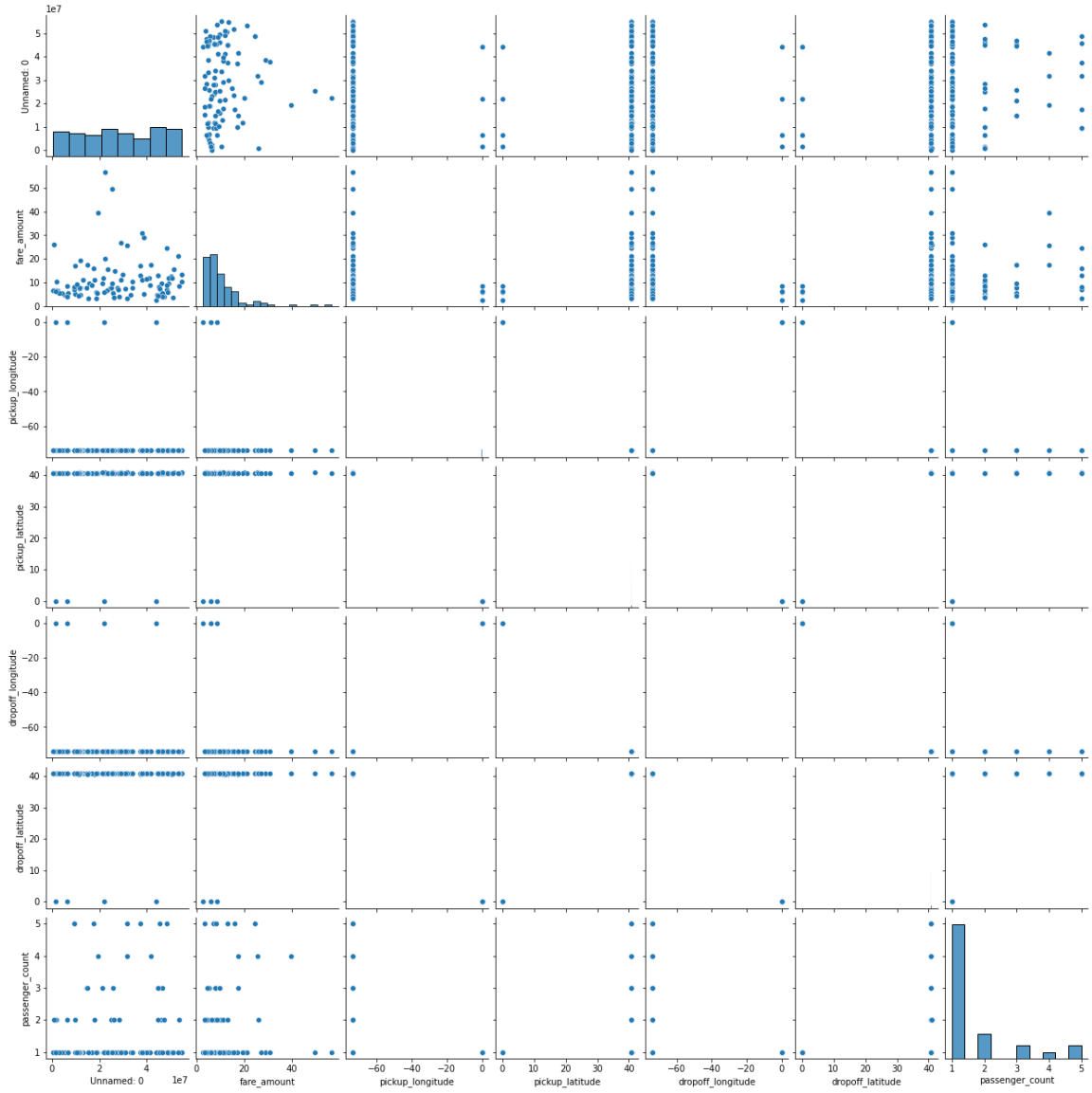
EDA AND VISUALIZATION

In [8]:

```
sns.pairplot(b)
```

Out[8]:

```
<seaborn.axisgrid.PairGrid at 0x236e4d9f310>
```



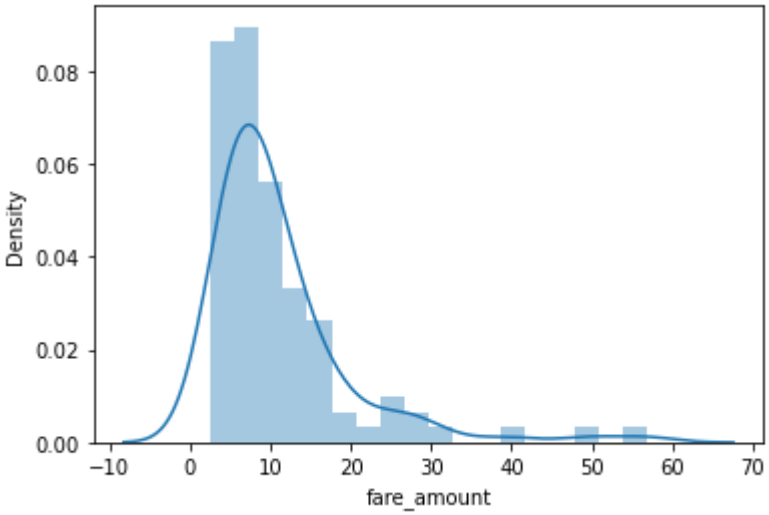
In [10]:

```
sns.distplot(b['fare_amount'])
```

```
C:\ProgramData\Anaconda3\lib\site-packages\seaborn\distributions.py:2557:
FutureWarning: `distplot` is a deprecated function and will be removed in
a future version. Please adapt your code to use either `displot` (a figure
-level function with similar flexibility) or `histplot` (an axes-level fun
ction for histograms).
  warnings.warn(msg, FutureWarning)
```

Out[10]:

```
<AxesSubplot:xlabel='fare_amount', ylabel='Density'>
```



In [11]:

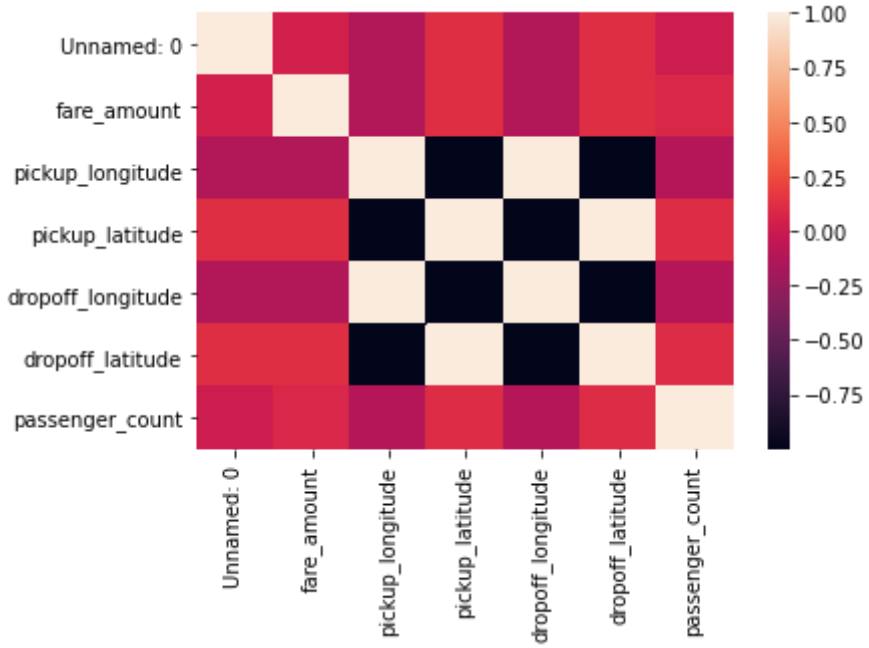
```
f=b[['Unnamed: 0', 'key', 'fare_amount',
       'pickup_longitude', 'pickup_latitude', 'dropoff_longitude',
       'dropoff_latitude', 'passenger_count']]
```

In [12]:

```
sns.heatmap(f.corr())
```

Out[12]:

```
<AxesSubplot:>
```



In [16]:

```
x=f[['Unnamed: 0',
       'pickup_longitude', 'pickup_latitude', 'dropoff_longitude',
       'dropoff_latitude', 'passenger_count']]
y=f['fare_amount']
```

In [17]:

```
from sklearn.model_selection import train_test_split
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.5)
```

In [18]:

```
from sklearn.linear_model import LinearRegression

lr=LinearRegression()
lr.fit(x_train,y_train)
```

Out[18]:

```
LinearRegression()
```

In [19]:

```
print(lr.intercept_)
```

```
8.537077140264241
```

In [20]:

```
r=pd.DataFrame(lr.coef_,x.columns,columns=['Co-efficient'])
r
```

Out[20]:

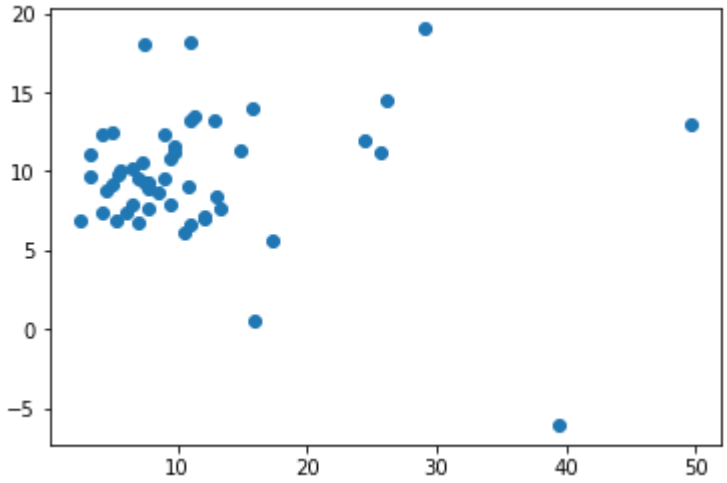
	Co-efficient
Unnamed: 0	-1.195192e-08
pickup_longitude	-9.731765e+01
pickup_latitude	9.619276e+01
dropoff_longitude	1.327453e+02
dropoff_latitude	-3.179754e+01
passenger_count	-1.122655e+00

In [21]:

```
u=lr.predict(x_test)
plt.scatter(y_test,u)
```

Out[21]:

```
<matplotlib.collections.PathCollection at 0x236fc5d6640>
```



In [22]:

```
print(lr.score(x_test,y_test))
```

```
-0.26870090666499946
```

In [ ]: