

Untitled3.ipynb - Colaboratory

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import numpy as np

import pandas as pd

import matplotlib.pyplot as plt

import seaborn as sns

from sklearn.model\_selection import train\_test\_split

from sklearn.ensemble import RandomForestClassifier,GradientBoostingClassifier

from sklearn.tree import DecisionTreeClassifier

from sklearn.neighbors import KNeighborsClassifier

from sklearn.metrics import f1\_score

from sklearn.metrics import classification\_report,confusion\_matrix

import warnings

import pickle

from scipy import stats

warnings.filterwarnings('ignore')

plt.style.use('fivethirtyeight')

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[4] data=pd.read\_csv("/content/Data\_Train\_1.csv")

data.head()

	Airline	Date_of_Journey	Source	Destination	Route	Dep_Time	Arrival_Time	Duration	Total_Stops	Additional_Info	Price
0	IndiGo	24/03/2019	Banglore	New Delhi	BLR → DEL	22:20	01:10 22 Mar	2h 50m	non-stop	No info	3897
1	Air India	1/05/2019	Kolkata	Banglore	CCU → IXR → BBI → BLR	05:50	13:15	7h 25m	2 stops	No info	7662
					BOM → COK	09:25	04:25 10 Jun	19h	2 stops	No info	13882

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[4] data=pd.read\_csv("/content/Data\_Train\_1.csv")  
data.head()

	Airline	Date_of_Journey	Source	Destination	Route	Dep_Time	Arrival_Time	Duration	Total_Stops	Additional_Info	Price
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1	Air India	1/05/2019	Kolkata	Banglore	CCU → IXR → BBI → BLR	05:50	13:15	7h 25m	2 stops	No info	7662
2	Jet Airways	9/06/2019	Delhi	Cochin	DEL → LKO → BOM → COK	09:25	04:25 10 Jun	19h	2 stops	No info	13882
3	IndiGo	12/05/2019	Kolkata	Banglore	CCU → NAG → BLR	18:05	23:30	5h 25m	1 stop	No info	6218
4	IndiGo	01/03/2019	Banglore	New Delhi	BLR → NAG → DEL	16:50	21:35	4h 45m	1 stop	No info	13302

[5] for i in category:  
print(i,data[i].unique())

-----  
NameErrorTraceback (most recent call last)  
<ipython-input-5-8319b880e93f> in <module>  
----> 1 for i in category:  
2 print(i,data[i].unique())  
  
NameError: name 'category' is not defined

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[6] data.Date_of_Journey

0      24/03/2019
1      1/05/2019
2      9/06/2019
3      12/05/2019
4      01/03/2019
...
10678   9/04/2019
10679  27/04/2019
10680  27/04/2019
10681   01/03/2019
10682   9/05/2019
Name: Date_of_Journey, Length: 10683, dtype: object

[7] data['Date']=data.Date_of_Journey.str[0]
    data['Month']=data.Date_of_Journey.str[1]
    data['Year']=data.Date_of_Journey.str[2]

[8] data.Total_Stops.unique()

array(['non-stop', '2 stops', '1 stop', '3 stops', nan, '4 stops'],
      dtype=object)

[9] data.Route=data.Route.str.split(' ')
    
```

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```
[9] data.Route=data.Route.str.split('')
data.Route
```

```

0      [, B, L, R, , →, , D, E, L, ]
1      [, C, C, U, , →, , I, X, R, , →, , B, B, I...
2      [, D, E, L, , →, , L, K, O, , →, , B, O, M...
3      [, C, C, U, , →, , N, A, G, , →, , B, L, R, ]
4      [, B, L, R, , →, , N, A, G, , →, , D, E, L, ]

...
10678      [, C, C, U, , →, , B, L, R, ]
10679      [, C, C, U, , →, , B, L, R, ]
10680      [, B, L, R, , →, , D, E, L, ]
10681      [, B, L, R, , →, , D, E, L, ]
10682      [, D, E, L, , →, , G, O, I, , →, , B, O, M...
Name: Route, Length: 10683, dtype: object
```

```
[ ] data['City1']=data.Route.str[0]
data['City2']=data.Route.str[1]
data['City3']=data.Route.str[2]
data['City4']=data.Route.str[3]
data['City5']=data.Route.str[4]
data['City6']=data.Route.str[5]
```

```

-----
AttributeError                                Traceback (most recent call last)
<ipython-input-23-f099cd5085a7> in <module>
```

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[11] data['Dep\_Time\_Hour']=data.Dep\_Time.str[0]  
data['Dep\_Time\_Mins']=data.Dep\_Time.str[1]

0s

[12] data.Arrival\_Time=data.Arrival\_Time.str.split('')

0s

[13] data['Arrival\_date']=data.Arrival\_Time.str[1]  
data['Time\_of\_Arrival']=data.Arrival\_Time.str[0]

0s

[14] data['Time\_of\_Arrival']=data.Time\_of\_Arrival.str.split(':')

0s

[15] data['Arrival\_Time\_Hour']=data.Time\_of\_Arrival.str[0]  
data['Arrival\_Time\_Mins']=data.Time\_of\_Arrival.str[1]

0s

[16] data.Duration=data.Duration.str.split('')

2s

[17] data['Travel\_Hours']=data.Duration.str[0]  
data['Travel\_Hours']=data['Travel\_Hours'].str.split('h')  
data['Travel\_Hours']=data['Travel\_Hours'].str[0]  
data.Travel\_Hours=data.Travel\_Hours  
data['Travel\_Mins']=data.Duration.str[1]

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0s

[18] data.Total\_Stops.replace('non\_stop',0,inplace=True)  
data.Total\_stops=data.Total\_Stops.str.split('')  
data.Total\_Stops=data.Total\_Stops.str[0]

0s

[19] data.Total\_Stops.replace('non\_stop',0,inplace=True)  
data.Total\_Stops=data.Total\_Stops.str.split('')  
data.Total\_Stops=data.Total\_Stops.str[0]

1s

[20] data.Additional\_Info.unique()  
  
array(['No info', 'In-flight meal not included',  
 'No check-in baggage included', '1 Short layover', 'No Info',  
 '1 Long layover', 'Change airports', 'Business class',  
 'Red-eye flight', '2 Long layover'], dtype=object)

0s

[21] data.Additional\_Info.replace('No Info','No info',inplace=True)

0s

data.isnull().sum()

Airline	0
Date_of_Journey	0
Source	0
Destination	0

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data.isnull().sum()

Airline	0
Date_of_Journey	0
Source	0
Destination	0
Route	1
Dep_Time	0
Arrival_Time	0
Duration	0
Total_Stops	1
Additional_Info	0
Price	0
Date	0
Month	0
Year	0
Dep_Time_Hour	0
Dep_Time_Mins	0
Arrival_date	0
Time_of_Arrival	0
Arrival_Time_Hour	0
Arrival_Time_Mins	10683
Travel_Hours	0
Travel_Mins	0
dtype:	int64

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