In [194…
```
import pandas as pd
import numpy as np
```

In [195…
```
df = pd.DataFrame({'From_To': ['LoNDon_paris', 'MAdrid_miLAN', 'londON_StockhOlm', 'Budapest_PaRis', 'Brussels_londOn'],
                   'FlightNumber': [10045, np.nan, 10065, np.nan, 10085],
                   'RecentDelays': [[23, 47], [], [24, 43, 87], [13], [67, 32]],
                   'Airline': ['KLM(!)', '<Air France> (12)', '(British Airways. )',
                   '12. Air France', '"Swiss Air"']})
df
```

Out[195…

	From_To	FlightNumber	RecentDelays	Airline
0	LoNDon_paris	10045.0	[23, 47]	KLM(!)
1	MAdrid_miLAN	NaN	[]	<Air France> (12)
2	londON_StockhOlm	10065.0	[24, 43, 87]	(British Airways.)
3	Budapest_PaRis	NaN	[13]	12. Air France
4	Brussels_londOn	10085.0	[67, 32]	"Swiss Air"

In [196…
```
df.iloc[1,1], df.iloc[3,1]
```

Out[196…
```
(nan, nan)
```

In [197…
```
# 1 Replacing the missing values
df.iat[1,1] = 10055
df.iat[3,1] = 10075
df
```

Out[197…

	From_To	FlightNumber	RecentDelays	Airline
0	LoNDon_paris	10045.0	[23, 47]	KLM(!)
1	MAdrid_miLAN	10055.0	[]	<Air France> (12)
2	londON_StockhOlm	10065.0	[24, 43, 87]	(British Airways.)
3	Budapest_PaRis	10075.0	[13]	12. Air France
4	Brussels_londOn	10085.0	[67, 32]	"Swiss Air"

In [198…
```
# Converting the flightnumber column from float to integer
x = df['FlightNumber'].astype(str)
result = [FlightNumber[0:5] for FlightNumber in x]
df['FlightNumber'] = result
df
```

Out[198…

	From_To	FlightNumber	RecentDelays	Airline
0	LoNDon_paris	10045	[23, 47]	KLM(!)
1	MAdrid_miLAN	10055	[]	<Air France> (12)
2	londON_StockhOlm	10065	[24, 43, 87]	(British Airways.)
3	Budapest_PaRis	10075	[13]	12. Air France
4	Brussels_londOn	10085	[67, 32]	"Swiss Air"

In [199…
```
# 2 Splitting the From_To column
df1 = df['From_To'].str.split("_", n=1, expand = True)
df1
```

Out[199…

	0	1
0	LoNDon	paris
1	MAdrid	miLAN
2	londON	StockhOlm
3	Budapest	PaRis
4	Brussels	londOn

In [200…
```
# Naming them
df1.rename(columns={0:'From', 1:'To'}, inplace=True)
df1
```

Out[200…

	From	To
0	LoNDon	paris
1	MAdrid	miLAN
2	londON	StockhOlm
3	Budapest	PaRis
4	Brussels	londOn

In [201…
```
# Combining into one dataframe
data = df1.join(df)
data
```

Out[201…

	From	To	From_To	FlightNumber	RecentDelays	Airline
0	LoNDon	paris	LoNDon_paris	10045	[23, 47]	KLM(!)
1	MAdrid	miLAN	MAdrid_miLAN	10055	[]	<Air France> (12)
2	londON	StockhOlm	londON_StockhOlm	10065	[24, 43, 87]	(British Airways.)
3	Budapest	PaRis	Budapest_PaRis	10075	[13]	12. Air France
4	Brussels	londOn	Brussels_londOn	10085	[67, 32]	"Swiss Air"

In [202…
```
data = pd.DataFrame(data)
data
```

Out[202…

	From	To	From_To	FlightNumber	RecentDelays	Airline
0	LoNDon	paris	LoNDon_paris	10045	[23, 47]	KLM(!)
1	MAdrid	miLAN	MAdrid_miLAN	10055	[]	<Air France> (12)
2	londON	StockhOlm	londON_StockhOlm	10065	[24, 43, 87]	(British Airways.)
3	Budapest	PaRis	Budapest_PaRis	10075	[13]	12. Air France
4	Brussels	londOn	Brussels_londOn	10085	[67, 32]	"Swiss Air"

In [203…
```
# 3 Capitalising the city names
data['From'] = data['From'].str.title()
data['To'] = data['To'].str.title()
data
```

Out[203…

	From	To	From_To	FlightNumber	RecentDelays	Airline
0	London	Paris	LoNDon_paris	10045	[23, 47]	KLM(!)
1	Madrid	Milan	MAdrid_miLAN	10055	[]	<Air France> (12)
2	London	Stockholm	londON_StockhOlm	10065	[24, 43, 87]	(British Airways.)
3	Budapest	Paris	Budapest_PaRis	10075	[13]	12. Air France
4	Brussels	London	Brussels_londOn	10085	[67, 32]	"Swiss Air"

In [204…
```
# 4 Deleting From_To column
del data['From_To']
data
```

Out[204…

	From	To	FlightNumber	RecentDelays	Airline
0	London	Paris	10045	[23, 47]	KLM(!)
1	Madrid	Milan	10055	[]	<Air France> (12)
2	London	Stockholm	10065	[24, 43, 87]	(British Airways.)
3	Budapest	Paris	10075	[13]	12. Air France
4	Brussels	London	10085	[67, 32]	"Swiss Air"

In [205…
```
df2 = data['RecentDelays']
df2
```

Out[205…
```
0        [23, 47]
1              []
2    [24, 43, 87]
3            [13]
4        [67, 32]
Name: RecentDelays, dtype: object
```

In [206…
```
# 5 Splitting the list values in RecentDelays columns into its own columns
df3 = pd.DataFrame(data['RecentDelays'].tolist(), columns = ['delay_1', 'delay_2', 'delay_3'])
df3
```

Out[206…

	delay_1	delay_2	delay_3
0	23.0	47.0	NaN
1	NaN	NaN	NaN
2	24.0	43.0	87.0
3	13.0	NaN	NaN
4	67.0	32.0	NaN

In [207…
```
data = data.join(df3)
data
```

Out[207…

	From	To	FlightNumber	RecentDelays	Airline	delay_1	delay_2	delay_3
0	London	Paris	10045	[23, 47]	KLM(!)	23.0	47.0	NaN
1	Madrid	Milan	10055	[]	<Air France> (12)	NaN	NaN	NaN
2	London	Stockholm	10065	[24, 43, 87]	(British Airways.)	24.0	43.0	87.0
3	Budapest	Paris	10075	[13]	12. Air France	13.0	NaN	NaN
4	Brussels	London	10085	[67, 32]	"Swiss Air"	67.0	32.0	NaN

In [208…
```
# Removing the RecentDelays column
del data['RecentDelays']
data
```

Out[208…

	From	To	FlightNumber	Airline	delay_1	delay_2	delay_3
0	London	Paris	10045	KLM(!)	23.0	47.0	NaN
1	Madrid	Milan	10055	<Air France> (12)	NaN	NaN	NaN
2	London	Stockholm	10065	(British Airways.)	24.0	43.0	87.0
3	Budapest	Paris	10075	12. Air France	13.0	NaN	NaN
4	Brussels	London	10085	"Swiss Air"	67.0	32.0	NaN

In [ ]:
```
```