```python
In [5]: import numpy as np
        import pandas as pd
        df=pd.read_csv("pre_process_datasample.csv")
        df.head()
```

Out[5]:

	Country	Age	Salary	Purchased
0	France	44.0	72000.0	No
1	Spain	27.0	48000.0	Yes
2	Germany	30.0	54000.0	No
3	Spain	38.0	61000.0	No
4	Germany	40.0	NaN	Yes

```python
In [6]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 10 entries, 0 to 9
Data columns (total 4 columns):
 #   Column     Non-Null Count  Dtype
---  ------     --------------  -----
 0   Country    10 non-null     object
 1   Age        9 non-null      float64
 2   Salary     9 non-null      float64
 3   Purchased  10 non-null     object
dtypes: float64(2), object(2)
memory usage: 448.0+ bytes
```

```python
In [7]: df.Country.mode()
```

```
Out[7]: 0    France
        Name: Country, dtype: object
```

```python
In [8]: df.Country.mode()[0]
```

```
Out[8]: 'France'
```

```python
In [9]: type(df.Country.mode())
```

```
Out[9]: pandas.core.series.Series
```

```
In [10]: df.Country.fillna(df.Country.mode()[0],inplace=True)
         df.Age.fillna(df.Age.median(),inplace=True)
         df.Salary.fillna(round(df.Salary.mean()),inplace=True)
         df
```

Out[10]:

	Country	Age	Salary	Purchased
0	France	44.0	72000.0	No
1	Spain	27.0	48000.0	Yes
2	Germany	30.0	54000.0	No
3	Spain	38.0	61000.0	No
4	Germany	40.0	63778.0	Yes
5	France	35.0	58000.0	Yes
6	Spain	38.0	52000.0	No
7	France	48.0	79000.0	Yes
8	Germany	50.0	83000.0	No
9	France	37.0	67000.0	Yes

```
In [11]: pd.get_dummies(df.Country)
```

Out[11]:

	France	Germany	Spain
0	1	0	0
1	0	0	1
2	0	1	0
3	0	0	1
4	0	1	0
5	1	0	0
6	0	0	1
7	1	0	0
8	0	1	0
9	1	0	0

```
In [13]: updated_dataset=pd.concat([pd.get_dummies(df.Country),df.iloc[:,[1,2,3]]],axi
         updated_dataset
```

Out[13]:

	France	Germany	Spain	Age	Salary	Purchased
0	1	0	0	44.0	72000.0	No
1	0	0	1	27.0	48000.0	Yes
2	0	1	0	30.0	54000.0	No
3	0	0	1	38.0	61000.0	No
4	0	1	0	40.0	63778.0	Yes
5	1	0	0	35.0	58000.0	Yes
6	0	0	1	38.0	52000.0	No
7	1	0	0	48.0	79000.0	Yes
8	0	1	0	50.0	83000.0	No
9	1	0	0	37.0	67000.0	Yes

```
In [14]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 10 entries, 0 to 9
Data columns (total 4 columns):
 #   Column     Non-Null Count  Dtype
---  ------     --------------  -----
 0   Country    10 non-null     object
 1   Age        10 non-null     float64
 2   Salary     10 non-null     float64
 3   Purchased  10 non-null     object
dtypes: float64(2), object(2)
memory usage: 448.0+ bytes
```

```
In [15]: updated_dataset.Purchased.replace(['No','Yes'],[0,1],inplace=True)
         updated_dataset
```

Out[15]:

	France	Germany	Spain	Age	Salary	Purchased
0	1	0	0	44.0	72000.0	0
1	0	0	1	27.0	48000.0	1
2	0	1	0	30.0	54000.0	0
3	0	0	1	38.0	61000.0	0
4	0	1	0	40.0	63778.0	1
5	1	0	0	35.0	58000.0	1
6	0	0	1	38.0	52000.0	0
7	1	0	0	48.0	79000.0	1
8	0	1	0	50.0	83000.0	0
9	1	0	0	37.0	67000.0	1

In [ ]: