```python
import numpy as np
import pandas as pd

# Load the pre_process_datasample.csv
df = pd.read_csv("pre_process_datasample.csv")
print("Original Dataset:")
print(df)

# Check dataset info
print("\nDataset Info:")
df.info()

# Get mode of Country column
print("\nMode of Country column:")
print(df.Country.mode())
print(df.Country.mode()[0])
print(type(df.Country.mode()))

# Fill missing values
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)

print("\nAfter filling missing values:")
print(df)

# Create dummy variables for categorical data
print("\nDummy variables for Country:")
print(pd.get_dummies(df.Country))

# Create updated dataset with dummy variables
updated_dataset = pd.concat([pd.get_dummies(df.Country), df.iloc[:,
[1,2,3]]], axis=1)
print("\nUpdated dataset with dummy variables:")
print(updated_dataset)

# Check info again
print("\nFinal dataset info:")
df.info()

# Convert Purchased to numerical values
updated_dataset.Purchased.replace(['No', 'Yes'], [0, 1], inplace=True)
print("\nFinal updated dataset with numerical Purchased:")
print(updated_dataset)
```

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Original Dataset:
   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
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3    Spain  38.0  61000.0        No
4  Germany  40.0      NaN       Yes
5   France  35.0  58000.0       Yes
6    Spain   NaN  52000.0        No
7   France  48.0  79000.0       Yes
8  Germany  50.0  83000.0        No
9   France  37.0  67000.0       Yes

Dataset 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: 452.0+ bytes

Mode of Country column:
0    France
Name: Country, dtype: object
France
<class 'pandas.core.series.Series'>

After filling missing values:
   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

Dummy variables for Country:
   France  Germany  Spain
0    True    False  False
1   False    False   True
2   False     True  False
3   False    False   True
4   False     True  False
5    True    False  False
6   False    False   True
7    True    False  False
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8   False     True  False
9    True    False  False

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

Final dataset 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: 452.0+ bytes

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

/tmp/ipykernel_20938/2843840289.py:20: FutureWarning: A value is
trying to be set on a copy of a DataFrame or Series through chained
assignment using an inplace method.
The behavior will change in pandas 3.0. This inplace method will never
work because the intermediate object on which we are setting values
always behaves as a copy.

For example, when doing 'df[col].method(value, inplace=True)', try
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using 'df.method({col: value}, inplace=True)' or df[col] =
df[col].method(value) instead, to perform the operation inplace on the
original object.


  df.Country.fillna(df.Country.mode()[0], inplace=True)
/tmp/ipykernel_20938/2843840289.py:21: FutureWarning: A value is
trying to be set on a copy of a DataFrame or Series through chained
assignment using an inplace method.
The behavior will change in pandas 3.0. This inplace method will never
work because the intermediate object on which we are setting values
always behaves as a copy.

For example, when doing 'df[col].method(value, inplace=True)', try
using 'df.method({col: value}, inplace=True)' or df[col] =
df[col].method(value) instead, to perform the operation inplace on the
original object.


  df.Age.fillna(df.Age.median(), inplace=True)
/tmp/ipykernel_20938/2843840289.py:22: FutureWarning: A value is
trying to be set on a copy of a DataFrame or Series through chained
assignment using an inplace method.
The behavior will change in pandas 3.0. This inplace method will never
work because the intermediate object on which we are setting values
always behaves as a copy.

For example, when doing 'df[col].method(value, inplace=True)', try
using 'df.method({col: value}, inplace=True)' or df[col] =
df[col].method(value) instead, to perform the operation inplace on the
original object.


  df.Salary.fillna(round(df.Salary.mean()), inplace=True)
/tmp/ipykernel_20938/2843840289.py:41: FutureWarning: A value is
trying to be set on a copy of a DataFrame or Series through chained
assignment using an inplace method.
The behavior will change in pandas 3.0. This inplace method will never
work because the intermediate object on which we are setting values
always behaves as a copy.

For example, when doing 'df[col].method(value, inplace=True)', try
using 'df.method({col: value}, inplace=True)' or df[col] =
df[col].method(value) instead, to perform the operation inplace on the
original object.


  updated_dataset.Purchased.replace(['No', 'Yes'], [0, 1],
inplace=True)
/tmp/ipykernel_20938/2843840289.py:41: FutureWarning: Downcasting
```

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behavior in `replace` is deprecated and will be removed in a future
version. To retain the old behavior, explicitly call
`result.infer_objects(copy=False)`. To opt-in to the future behavior,
set `pd.set_option('future.no_silent_downcasting', True)`
  updated_dataset.Purchased.replace(['No', 'Yes'], [0, 1],
inplace=True)
```