

1. check if a dataframe has any missing values?

```
# Input
df =
pd.read_csv('https://raw.githubusercontent.com/selva86/datasets/master/Car
s93_miss.csv')

# Solution
df.isnull().values.any()
```

2. count the number of missing values in each column?

```
# Input
df =
pd.read_csv('https://raw.githubusercontent.com/selva86/datasets/master/Car
s93_miss.csv')

# Solution
n_missings_each_col = df.apply(lambda x: x.isnull().sum())
n_missings_each_col.argmax()
```

3. replace missing values of multiple numeric columns with the mean?

```
# Input
df =
pd.read_csv('https://raw.githubusercontent.com/selva86/datasets/master/Car
s93_miss.csv')

# Solution
df_out = df[['Min.Price', 'Max.Price']] = df[['Min.Price',
'Max.Price']].apply(lambda x: x.fillna(x.mean()))
print(df_out.head())
```

```
Min.Price  Max.Price
0  12.900000  18.800000
1  29.200000  38.700000
2  25.900000  32.300000
3  17.118605  44.600000
4  17.118605  21.459091
```

5. check if a dataframe has any missing values?(using notnull)

```
# importing pandas as pd
import pandas as pd

# importing numpy as np
import numpy as np

# dictionary of lists
dict = {'First Score':[100, 90, np.nan, 95],
        'Second Score': [30, 45, 56, np.nan],
        'Third Score':[np.nan, 40, 80, 98]}
```

```

# creating a dataframe using dictionary
df = pd.DataFrame(dict)

# using notnull() function
df.notnull()

* 5. Drop missing values and print shape of new DataFrame
df = df.dropna()

* 6. Print shape of new DataFrame
print("Shape of DataFrame After Dropping All Rows with Missing Values:
{}".format(df.shape))

* 7. Print shape of original DataFrame
print("Shape of Original DataFrame: {}".format(df.shape))

* 8. sum of the missing values in each column
df.isnull().sum()

* 9. fills all the missing values with the specified value, inplace is
False.
df['age'].fillna(0)
0      14.0
1.  0.0
2.  29.0
3.  0.0
4.  52.0
5.  45.0
Name: age, dtype: float64

10. only age column has missing values
df.isnull().sum()
name      0
gender    0
height    0
weight    0
age       2
dtype: int64

```