**1)write a pandas program to detect missing values of a given data frame . df = pd.DataFrame({ 'ord\_no':[70001,np.nan,70002,70004,np.nan,70005,np.nan,70010,70003,70012,np.nan,70013], 'purch\_amt':[150.5,270.65,65.26,110.5,948.5,2400.6,5760,1983.43,2480.4,50.45,75.29,3045.6],'ord\_date': ['2012-10-05','2012-09-10',np.nan,'2012-08-17','2012-09-10','2012-07-27','2012-09-10''2012-10-10','2012-10-10','2012-06-27','2012-04-25'], 'customer\_id':[3002,3001,3001,3003,3002,3001,3001,3004,3003,3002,3001,3001], 'salesman\_id':[5002,5003,5001,np.nan,5002,5001,5001,np.nan,5003,5002,5003,np.nan]})**

import pandas as pd

import numpy as np

df = pd.DataFrame({

'ord\_no': [70001, np.nan, 70002, 70004, np.nan, 70005, np.nan, 70010, 70003, 70012, np.nan, 70013],

'purch\_amt': [150.5, 270.65, 65.26, 110.5, 948.5, 2400.6, 5760, 1983.43, 2480.4, 50.45, 75.29, 3045.6],

'ord\_date': ['2012-10-05', '2012-09-10', np.nan, '2012-08-17', '2012-09-10', '2012-07-27', '2012-09-10', '2012-10-10', '2012-10-10', '2012-06-27', '2012-04-25', np.nan],

'customer\_id': [3002, 3001, 3001, 3003, 3002, 3001, 3001, 3004, 3003, 3002, 3001, 3001],

'salesman\_id': [5002, 5003, 5001, np.nan, 5002, 5001, 5001, np.nan, 5003, 5002, 5003, np.nan]

})

missing\_values = df.isnull()

print("DataFrame with missing values:")

print(missing\_values)

**output-:**

DataFrame with missing values:

ord\_no purch\_amt ord\_date customer\_id salesman\_id

0 False False False False False

1 True False False False False

2 False False True False False

3 False False False False True

4 True False False False False

5 False False False False False

6 True False False False False

7 False False False False True

8 False False False False False

9 False False False False False

10 True False False False False

11 False False True False True

**2) write a pandas program to drop the rows where at least one element is missing in a given dataframe. df = pd.DataFrame({ 'ord\_no':[70001,np.nan,70002,70004,np.nan,70005,np.nan,70010,70003,70012,np.nan,70013], 'purch\_amt':[150.5,270.65,65.26,110.5,948.5,2400.6,5760,1983.43,2480.4,50.45,75.29,3045.6], 'ord\_date': ['2012-10-05','2012-09-10',np.nan,'2012-08-17','2012-09-10','2012-07-27','2012-09-10''2012-10-10','2012-10-10','2012-06-27','2012-04-25'], 'customer\_id':[3002,3001,3001,3003,3002,3001,3001,3004,3003,3002,3001,3001], 'salesman\_id':[5002,5003,5001,np.nan,5002,5001,5001,np.nan,5003,5002,5003,np.nan]})**

import pandas as pd

import numpy as np

df = pd.DataFrame({

'ord\_no': [70001, np.nan, 70002, 70004, np.nan, 70005, np.nan, 70010, 70003, 70012, np.nan, 70013],

'purch\_amt': [150.5, 270.65, 65.26, 110.5, 948.5, 2400.6, 5760, 1983.43, 2480.4, 50.45, 75.29, 3045.6],

'ord\_date': ['2012-10-05', '2012-09-10', np.nan, '2012-08-17', '2012-09-10', '2012-07-27', '2012-09-10', '2012-10-10', '2012-10-10', '2012-06-27', '2012-04-25', np.nan],

'customer\_id': [3002, 3001, 3001, 3003, 3002, 3001, 3001, 3004, 3003, 3002, 3001, 3001],

'salesman\_id': [5002, 5003, 5001, np.nan, 5002, 5001, 5001, np.nan, 5003, 5002, 5003, np.nan]

})

df\_cleaned = df.dropna()

print("DataFrame after dropping rows with missing values:")

print(df\_cleaned)

**output-:**

DataFrame after dropping rows with missing values:

ord\_no purch\_amt ord\_date customer\_id salesman\_id

0 70001.0 150.50 2012-10-05 3002 5002.0

5 70005.0 2400.60 2012-07-27 3001 5001.0

8 70003.0 2480.40 2012-10-10 3003 5003.0

9 70012.0 50.45 2012-06-27 3002 5002.0