**Experiment-13**

AIM: Write a program to construct a Bayesian network considering medical data. Use this model to demonstrate the diagnosis of heart patients using standard Heart Disease Data Set. You can use Python ML library classes.

import pandas as pd

from sklearn.model\_selection import train\_test\_split

from sklearn.naive\_bayes import GaussianNB

from sklearn.metrics import accuracy\_score

data = pd.read\_csv('E:/data.csv', delimiter=',')

print("Column names in the dataset:")

print(data.columns)

print("\nFirst few rows of the dataset:")

print(data.head())

target\_column = 'target'

if target\_column not in data.columns:

print(f"Error: '{target\_column}' column not found in the dataset.")

else:

X = data.drop(columns=target\_column)

y = data[target\_column]

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.3, random\_state=42)

model = GaussianNB()

model.fit(X\_train, y\_train)

y\_pred = model.predict(X\_test)

accuracy = accuracy\_score(y\_test, y\_pred)

print(f'Accuracy: {accuracy:.2f}')

Output:

Column names in the dataset:

Index(['age,', 'sex,', 'cp,', 'trestbps,', 'chol,', 'fbs,', 'restecg,',

'thalach,', 'exang,', 'oldpeak,', 'slope,', 'ca,', 'thal,', 'target'],

dtype='object')

First few rows of the dataset:

age, sex, cp, trestbps, chol, fbs, restecg, thalach, exang, \

0 63 1 3 145 233 1 2 150 0

1 37 1 2 130 250 0 0 187 0

2 41 0 1 130 204 0 2 172 0

3 56 1 1 120 236 0 0 178 0

4 57 1 2 120 354 0 0 163 0

oldpeak, slope, ca, thal, target

0 2.3 3 0 6 1

1 3.5 2 0 3 1

2 1.4 1 0 3 1

3 0.8 1 0 3 1

4 0.6 1 0 7 1

Accuracy: 1.00