**Qtn:1**

**Naive Bayes Prediction Question**

| **Age** | **Obesity** | **BP** | **Diabetic** |
| --- | --- | --- | --- |
| Young | Yes | High | Yes |
| Young | No | Normal | No |
| Middle | Yes | High | Yes |
| Old | Yes | Normal | Yes |
| Old | No | Normal | No |
| Middle | No | High | No |

**Question:**

A person has the following features:

* Age = Young
* Obesity = Yes
* BP = Normal

Using the dataset above, predict whether the person is **Diabetic** or **Not Diabetic**.

**Step 2: Code Implementation**

* Use **Python** with **pandas** and **sklearn.naive\_bayes.CategoricalNB**.
* Encode categorical features using **LabelEncoder**.
* Train the model on the dataset and predict for the query:

**QTN:2**

**2.Dataset**

| **Height (cm)** | **Weight (kg)** | **Hair Length (cm)** | **Gender** |
| --- | --- | --- | --- |
| 170 | 65 | 5 | Male |
| 160 | 55 | 20 | Female |
| 175 | 70 | 4 | Male |
| 165 | 60 | 18 | Female |
| 180 | 75 | 6 | Male |
| 158 | 50 | 22 | Female |

**Question:**

Classify a person with the following features:

* Height = 168 cm
* Weight = 62 kg
* Hair Length = 15 cm

Using the dataset above, predict whether the person is **Male** or **Female** using a Naïve Bayesian Classifier.

Also, calculate **accuracy**, **precision**, and **recall** for this dataset after performing classification.