**Question # 1: Predicting House Prices Using Linear Regression**

**Description:** Use a dataset like the Boston Housing dataset (or another housing dataset) to predict house prices based on various features like the number of rooms, crime rate, proximity to parks, etc.

**• Skills:**

o Multi Linear Regression to model the relationship between the features and the

house price.

o Pandas for data manipulation and cleaning.

o Matplotlib/Seaborn for visualizing the relationship between features and the

target.

**• Deliverables:**

o Visualizations of the relationships between predictors (e.g., number of rooms vs.

house price).

o Model evaluation (e.g., R-squared).

o Insights on which features are the most influential in predicting house prices.

**Question # 2: Predicting Customer Churn Using Logistic Regression**

**Description:** Use a customer churn dataset (e.g., telecommunications or subscription services) to predict whether a customer will churn based on features like customer service calls, subscription duration, etc.

**• Skills:**

o Logistic Regression for binary classification (churn or not churn).

o Pandas for handling categorical features and preprocessing (e.g., encoding).

o Matplotlib to visualize the relationship between features and churn probability.

**• Deliverables:**

o Prediction accuracy and confusion matrix.

o Insights into the key factors that contribute to churn (e.g., the number of customer

service calls).

o Visualizations of predicted churn probabilities.

**Question # 3: Predicting Diabetes Using Logistic Regression**

**Description:** Use the Pima Indians Diabetes Dataset to predict whether a person has diabetes based on health metrics like BMI, age, blood pressure, etc.

**• Skills:**

o Logistic Regression for binary classification (diabetic vs. non-diabetic).

o Pandas for data manipulation and handling missing values.

o Matplotlib for visualizing relationships between features and the target variable.

**• Deliverables:**

o Evaluation metrics like accuracy, precision, recall, and F1-score.

o Visualizations showing how features (e.g., BMI) correlate with the likelihood of

diabetes.

o Insights into the most important factors for predicting diabetes.