**Assignment Report**

**Data Preparation:**

**I imported the dataset from the provided URL and assigned column names.**

**I handled missing values by dropping rows with any NaN values.**

**Categorical variables were encoded using one-hot encoding.**

**Splitting Data:**

**I split the dataset into training and testing sets using train\_test\_split() from scikit-learn. The training set contains 80% of the data, while the testing set contains 20%.**

**Model Training:**

**I instantiated a Gaussian Naive Bayes model using GaussianNB() from scikit-learn.**

**The model was trained using the training data with the fit() method.**

**Model Evaluation:**

**I made predictions on the test set using predict() method.**

**Confusion matrix was calculated using confusion\_matrix() to evaluate the model's performance.**

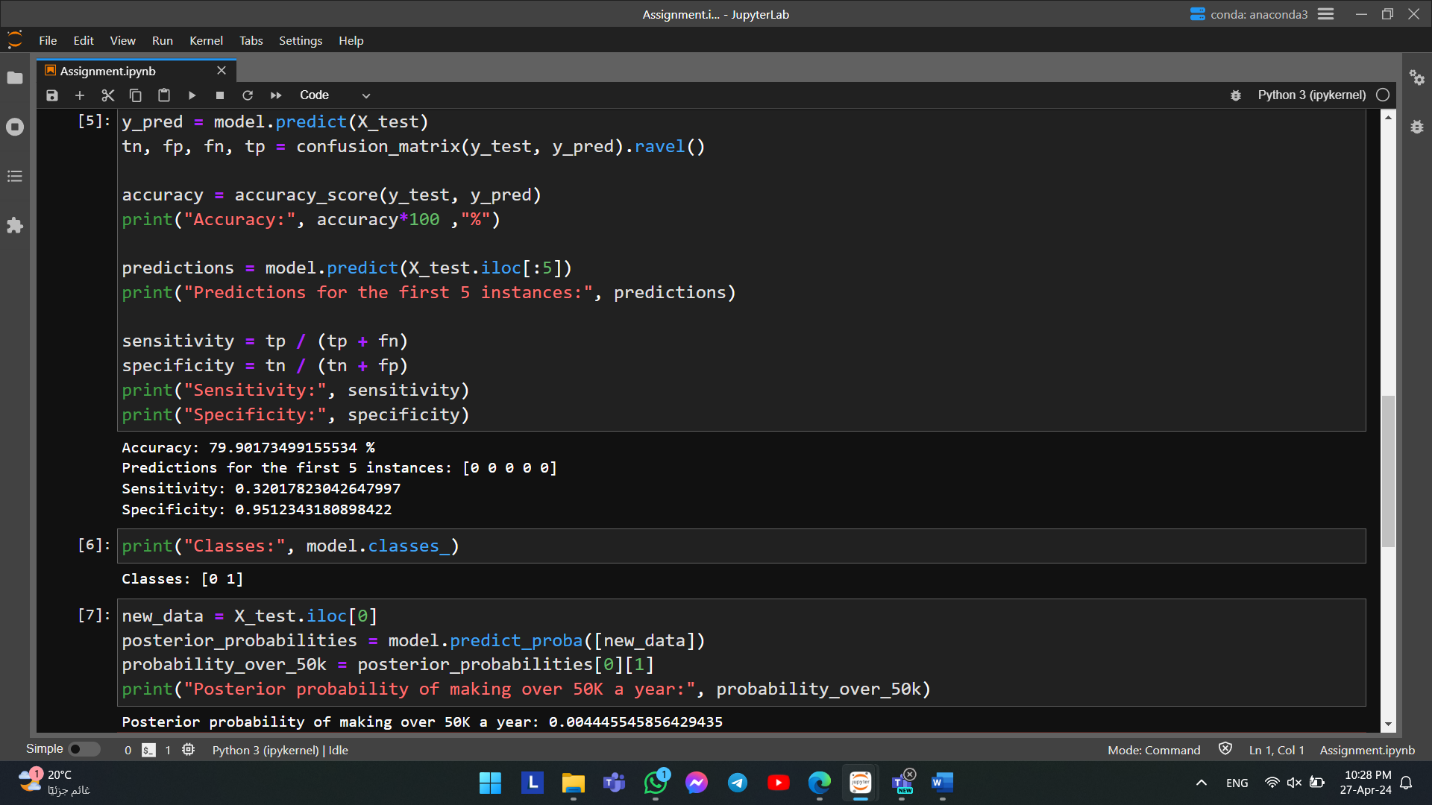
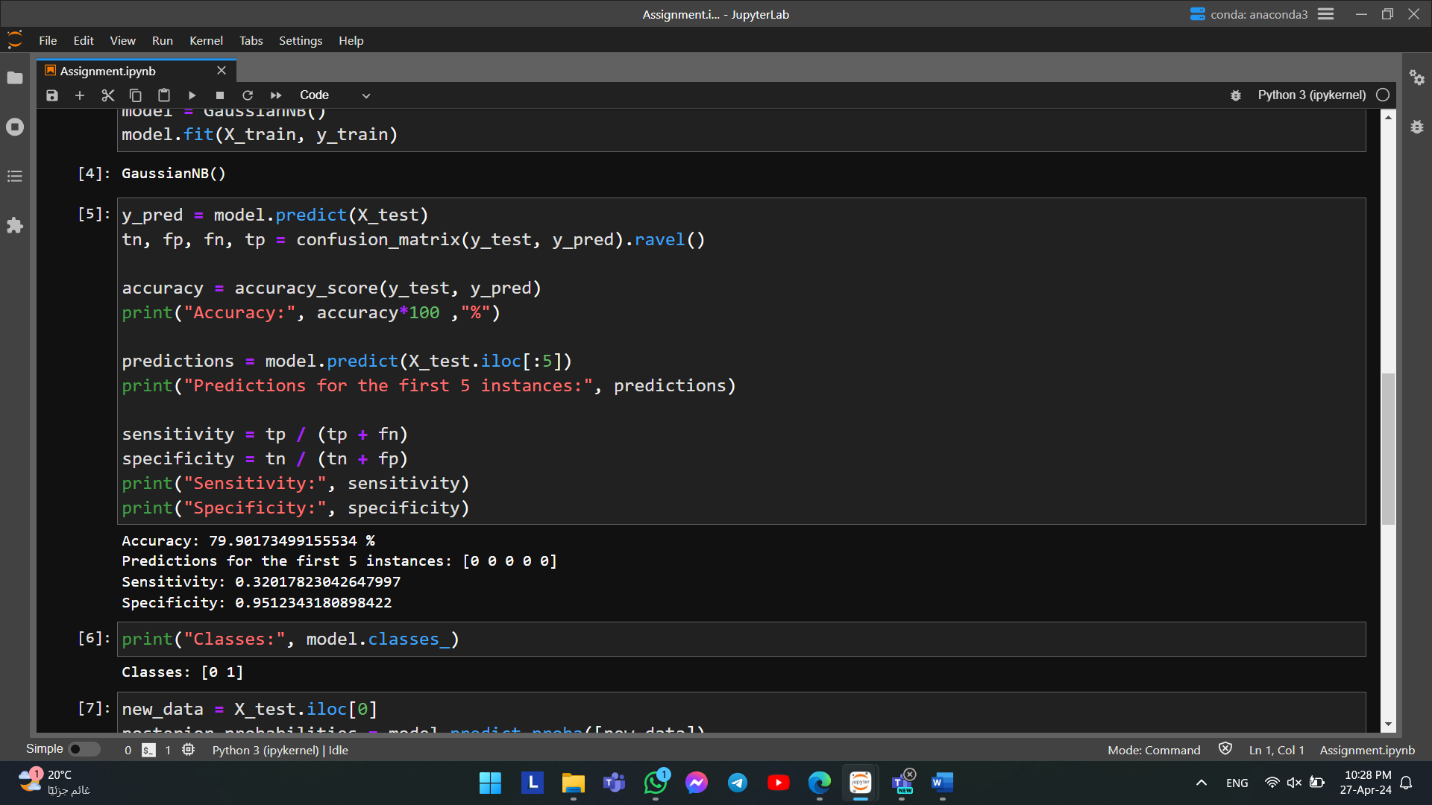
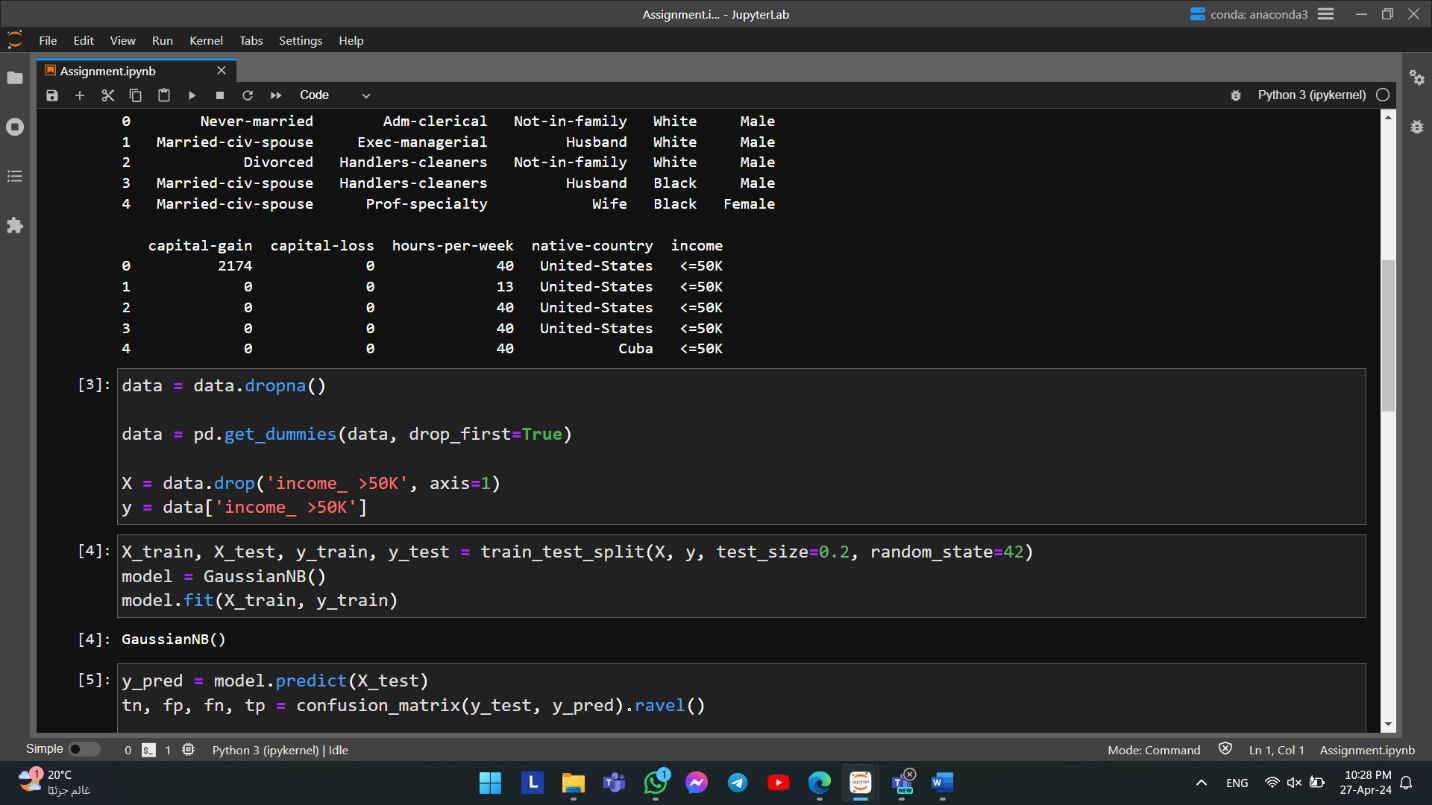
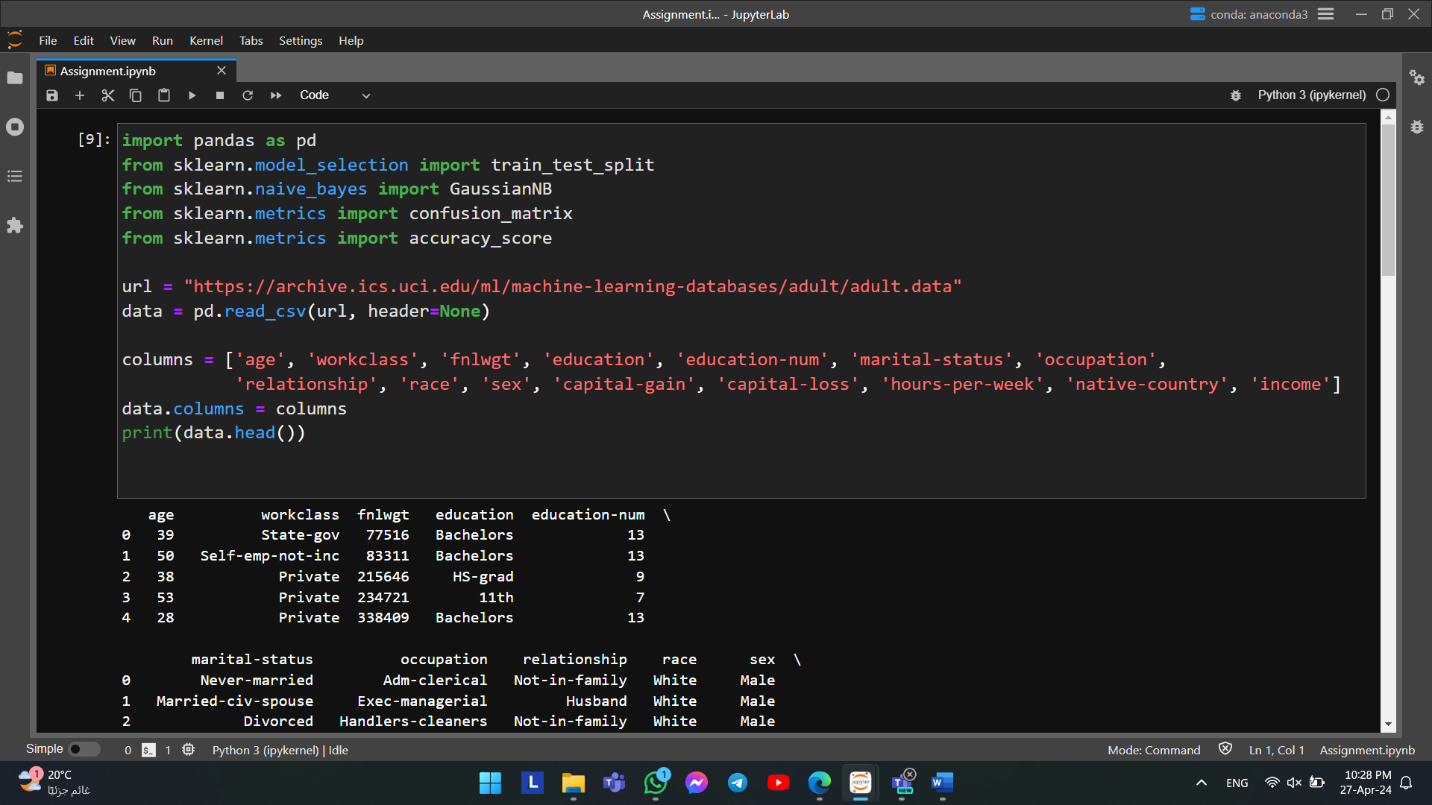
**Accuracy score was computed using accuracy\_score().**

**Additional Analysis:**

**I calculated sensitivity (true positive rate) and specificity (true negative rate) from the confusion matrix.**

**Predictions for the first 5 instances in the test set were printed.**

**I also computed the posterior probability of making over 50K a year for the first instance in the test set using predict\_proba().**

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