ARTIFICIAL INTELLIGENCE
ASSIGNMENT-4: Naive Bayes
(Read all the instructions carefully & adhere to them.)

Date: 15 April 2024   **Deadline: 30 April 2024**
Total Credit: 10

Instructions:
1. The assignment should be completed and uploaded by **30 April 2023, 07:59 PM IST.**
2. Marking will depend on the correctness and soundness of the outputs. Marks will be deducted in case of plagiarism.
3. Proper indentation and appropriate comments are mandatory.
4. You should zip all the required files and name the zip file as: **<roll_no_of_all_group_members.zip>, eg.1501cs11_1201cs03.zip.**
5. Upload your assignment (**the zip file**) to Moodle.

Problem Statement: Given a dataset containing various details about the details of employees such as 'workclass', 'education', 'occupation' etc. The task is to predict the 'income' of the employee given the other details. The salary field contains two values '<= 50k' and '>50k'.

Dataset: Link

Implementation Details:
- Implement two Naive Bayes classifiers:
    - Gaussian Naive Bayes
    - Multinomial Naive Bayes
- You can use existing packages such as Scikit-Learn to create the classifier
- Perform a 60-20-20 split on the dataset for train, validation, and test set.
- Perform 4-fold cross-validation.
- Report accuracy on the test set for both classifiers.
- Drop all null-valued columns.

Documents to submit:
- Model code
- Detailed document describing results such as confusion matrix for the execution and accuracy results

For any queries regarding this assignment, contact:
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