ARTIFICIAL INTELLIGENCE

ASSIGNMENT-5: Decision Trees

(Read all the instructions carefully & adhere to them.)

Date: 29 April 2024 **Deadline: 12 May 2024**
Total Credit: 10

Instructions:

1. The assignment should be completed and uploaded by **10 May 2023, 11:59 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.

For any queries regarding this assignment, you can contact:
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Problem Statement: Use Decision Trees to prepare a model on fraud data treating those who have taxable_income <= 30000 as "Risky" and others as "Good."

Data Description and Link: Link

- **Undergrad:** A person is under-graduated or not
- **Marital.Status:** marital status of a person
- **Taxable.Income:** Taxable income is the amount of how much tax an individual owes to the government (not to use)
- **Work Experience:** Work experience of a person
- **Urban:** Whether that person belongs to an urban area or not

Implementation Details:

- Assume: taxable_income <= 30000 as “Risky=0” and others are “Good=1”
- Use the first 80% of data as a training set and the remaining 20% as a test set.
- Report accuracy on the test set

Documents to submit:

- Model code
- A detailed document describing results such as time taken for the execution, confusion matrix, and accuracy results