# README

AI Application for Feature Selection and Model Evaluation  
  
Description  
  
This project evaluates various machine learning and deep learning models using feature selection methods . The models tested include KNN, Decision Tree, Random Forest, XGBoost, CNN, RNN, LSTM, and ANN.

Dataset  
  
The dataset used in this study can be accessed at the following URL:

1-https://www.kaggle.com/datasets/prajwalkanade/student-performance-prediction-dataset

2-https://www.kaggle.com/datasets/mdmahmudulhasansuzan/students-adaptability-level-in-online-education

3-https://www.kaggle.com/datasets/aljarah/xAPI-Edu-Data.

It contains features related to student performance at the university, with the last column being the target variable.

Dependencies  
  
- Python 3.8  
- pandas  
- scikit-learn  
- xgboost  
- tensorflow  
  
Install the dependencies using the following command:  
  
pip install pandas scikit-learn xgboost tensorflow

Instructions  
  
1. Download and Prepare the Dataset:  
 - Download the dataset from the provided URL.  
 - Place the dataset in the same directory as the script.  
  
2. Run the Script:

- Execute the “ code.py ” script using Python 3.8:  
   
 python code.py  
   
  
3. Feature Selection:  
 - The script performs feature selection using Chi-Square and Mutual Information methods.  
 - Selected features are used to train and evaluate the models.  
  
4. Model Training and Evaluation:  
 - Models are trained on the training dataset and evaluated on the test dataset.  
 - Accuracy scores are printed for each model.  
  
 Results  
  
The results are stored in a dictionary and printed at the end of the script. The dictionary contains the model names, feature selection methods, and their corresponding accuracy scores.