ITIR626: Assignment 1 (Due date is 31st August 2023)

From the UCI dataset, you are to select one classification dataset. A classification dataset has a categorical variable as its Target/dependent variable.

1. Select any three Machine Learning algorithms for your classification dataset.
2. Use each ML algorithm to train a model on the dataset you have selected and evaluate the results.
3. The evaluation metrics you are to use are as follows: Accuracy, precision, recall, F1-score, ROC, and AUC.
4. Prepare a report which should contain:
    a. Introduction
    b. Literature Review. Describe the three ML algorithms you chose and review the current literature on each of them.
    c. Materials and Method
        i. Materials. Provide a description of the dataset (how many variables, records, variable types, which is the target variable, and so on).
        ii. Method Describe how you trained your models. What parameters did you use for the three selected algorithms? What was your train/test split ratio? Provide flowcharts/diagrams of your models.
    d. Results and Discussion
        i. Present the results of your experiments. Compare the performances of the three classification algorithms in tabular and graphical format.
        ii. Which model/algorithm(s) performed best? Why do you think that happened?
    e. Conclusion
5. Place your code, report, and datasets into a folder, zip it, and submit only the zip file. Make sure your code is fully functional, as it will simply have executed them to confirm if it works. Feel free to use either a notebook format (Jupyter notebook) or python scripts for your coding.