

### CODE REFERENCING STATEMENT

1. This code although was built on the understanding of fundamentals of building a decision tree, however this is an adaptation code.
2. This code uses most part of the splitting section in the code by Suji04 from GitHub, and the idea from building the tree. However, this work takes parameters X, y in the method rather than the dataset. The decision tree also takes a new parameter, criterion. I added a new condition with the n\_classes.
3. The code for the \_cal\_leaf function was gotten from PULKIT on Kaggle (Decision Tree Classifier from scratch).
4. The rest of the codes were inspired by other materials stated below and, w3 schools and tutorials point were consulted often to refresh python fundamentals.

### MATERIALS CONSULTED

1. "How To Implement The Decision Tree Algorithm From Scratch In Python" by Jason Brownlee on machine learning mastery.  
(<https://machinelearningmastery.com/implement-decision-tree-algorithm-scratch-python/>)
2. Implementation by Suji04 from GitHub.  
([https://github.com/Suji04/ML\\_from\\_Scratch/blob/master/decision%20tree%20classification.ipynb](https://github.com/Suji04/ML_from_Scratch/blob/master/decision%20tree%20classification.ipynb))
3. "Decision Tree Classification Clearly Explained", by normalized nerd on YouTube  
(<https://youtu.be/ZVR2Way4nwQ>).
4. Week 9 coursework solution
5. "Decision Tree Classifier from scratch" from Pulkit on Kaggle  
(<https://www.kaggle.com/code/pulkit12dhingra/decision-tree-classifier-from-scratch>)
6. "Profile memory consumption of python functions in a simple line of code", by Satyam Kumar (<https://towardsdatascience.com/profile-memory-consumption-of-python-functions-in-a-single-line-of-code-6403101db419>)
7. "Monitoring memory usage of a running python program" from geekforgeeks  
(<https://www.geeksforgeeks.org/monitoring-memory-usage-of-a-running-python-program/>)
8. Psutil 5.9.4 (<https://pypi.org/project/psutil/>)
9. Pytest codes were inspired by coursework tests, and some materials consulted by Dane Hillard on RealPython (<https://realpython.com/pytest-python-testing/>), Haytem Tellili on medium (<https://medium.com/@haythemtellili/testing-machine-learning-projects-with-pytest-8c0ae77d392d>), pixegami on youtube (pytest unit testing tutorial) and the pytest documentation page.

10. Code for calculating memory usage inspiration from Psutil 5.9.4 project description.
11. NumPy documentation
12. Classification, Scikit - learn machine learning documentation.
13. Pytest output from (<https://python-forum.io/thread-30331.html>)

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