

UCS1504 - Artificial Intelligence Lab
Department of CSE, SSN College of Engineering
9. Decision Tree Construction – ID3 Algorithm
10.11.2022

For the following dataset, construct a decision tree using ID3 algorithm.

Deadline?	Is there a party?	Lazy?	Activity
Urgent	Yes	Yes	Party
Urgent	No	Yes	Study
Near	Yes	Yes	Party
None	Yes	No	Party
None	No	Yes	Pub
None	Yes	No	Party
Near	No	No	Study
Near	No	Yes	TV
Near	Yes	Yes	Party
Urgent	No	No	Study

Hint: Use Entropy and Information gain as Impurity functions.

Write functions for the following using Python:

1. Write a function to calculate Construct Entropy and Information gain of the features(f) in F.
2. Write a function to read and store the dataset with appropriate data structure.
3. Construct the decision tree and derive the rules for every path from root to leaf node.

Observation: Write the formula for Entropy and Information gain and solution of the problem with derived rules.