

Machine Learning Course

Project #1

1. We are in a tennis club. We plan to hold tennis matches between several participants. The conditions of the tournament are highly dependent on the weather. In some cases, participants are reluctant to compete, and in some cases, participants may be injured. Therefore, it is not possible to hold the competition in all weather conditions. You are given a dataset of weather conditions in 14 different days. On some of these days, a tennis match is held. And on some other days there is no tennis match. Using the Python programming language, write a program that uses the ID3 algorithm to tell us what a decision tree is for this dataset.

You are not allowed to use the scikit-learn library. Program a class to create the decision tree. You can use numpy and pandas libraries. Finally, display the resulting decision tree properly.

You can access the desired dataset using the link below:

<https://drive.google.com/file/d/15ZjQZLFcbNcxV-XWcxcZFiclaGclrsJA/view?usp=sharing>

2. You are given information about a population of mushrooms. 22 features were extracted from each mushroom. Use the code you wrote in the previous section to create a decision tree on the training data. Predict the test data class using the generated tree. Report accuracy.

You can access the desired datasets using the link below:

https://drive.google.com/file/d/1TwaMi9eoRQG-5EuScnzt_OfHWRJajiUs/view?usp=sharing