CSB352: Data Mining LAB

Instructor : [Dr. Chandra Prakash]

- For more information visit the class website (https://cprakash86.wordpress.com/csb352_s21/).
- DATE: 8-March-2021

Assignment 9: Decision Tree

Due Date: 14-March-2021

Student Name: Your Name

Assignment Instructions

You must save your as **Assignment_NO_Yourname**

Agenda for the Assignment 9

1. Understand the working of the Decision Tree :

Your source file will most likely end in **.pynb** if you are using a Jupyter notebook; however, it might also end in **.py** if you are using a Python script.

You have to add your name and roll no in the Google Colab Instructions section below and print it.

Google CoLab Instructions

The following code ensures that Google CoLab is running the correct version of TensorFlow.

In [ ]:
```
try:
    from google.colab import drive
    %tensorflow_version 2.x
    COLAB = True
    print("Assignment 9")
    print("Note: using Google CoLab")
except:
    print("Assignment 9")
    print("Note: not using Google CoLab")
    COLAB = False

# Print your name and Roll No.
# Print the curent time
```

Decision Tree from scratch

Decision Tree for PlayTennis

Day	*Outlook*	*Temperature*	*Humidity*	*Wind*	*PlayTennis*
D1	Sunny	Hot	High	Weak	No
D2	Sunny	Hot	High	Strong	No
D3	Overcast	Hot	High	Weak	Yes
D4	Rain	Mild	High	Weak	Yes
D5	Rain	Cool	Normal	Weak	Yes
D6	Rain	Cool	Normal	Strong	No
D7	Overcast	Cool	Normal	Strong	Yes
D8	Sunny	Mild	High	Weak	No
D9	Sunny	Cool	Normal	Weak	Yes
D10	Rain	Mild	Normal	Weak	Yes
D11	Sunny	Mild	Normal	Strong	Yes
D12	Overcast	Mild	High	Strong	Yes
D13	Overcast	Hot	Normal	Weak	Yes
D14	Rain	Mild	High	Strong	No

Task 1: Use the Gini as impurity paramter and construct a Decision Tree

In [ ]:
```
###Your code here
```

Task 2: Construct a Decision Tree using Information Gain as impurity paramter

In [ ]:
```
###Your code here
```

Task 3: Construct a Decision Tree using Misclassification Error as impurity paramter

In [ ]:
```
###Your code here
```

Task 4: Predict and compare the result of above 3 tree the value of PlayTennis for

Outlook = sunny, Temp = cool, Humidity = high, Wind = strong

In [ ]:
```
###Your  Result here
```

Task 5: Compare your result with the inbuild library available for

- Decision Tree
- Random Forest

In [ ]:
```
###Your Result
```

In [ ]:
```

```

In [ ]:
```
#YOUR OBSERVATIONS
```