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Machine Learning Laboratory – 6
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Explanation:
First the f-test result was calculated with the given formula.
Then I wrote a class to build and display the decision tree. This was done using an augmentation to the dfs algorithm. Essentially we calculate the entropy at each step, find the column with the maximum entropy gain and for each possible value of the column we continue the process recursively.

Output:

```
Error: [30.42059547]: 100%|████████████████████████████| 200/200 [00:02<00:00, 93.71it/s]
```

```
Outlook = Sunny
        Humidity = High
                Prediction: No

        Humidity = Normal
                Prediction: Yes

Outlook = Overcast
        Prediction: Yes

Outlook = Rain
        Wind = Weak
                Prediction: Yes

        Wind = Strong
                Prediction: No
```

```
Sex = Male
        Class = First
                Age = Adult
                        Prediction: No

                Age = Child
                        Prediction: Yes

        Class = Second
                Age = Adult
                        Prediction: No

                Age = Child
                        Prediction: Yes

        Class = Third
                Age = Adult
                        Prediction: No

                Age = Child
                        Prediction: No

        Class = Crew
                Prediction: No

Sex = Female
        Class = First
                Age = Adult
                        Prediction: Yes

                Age = Child
                        Prediction: Yes

        Class = Second
                Age = Adult
                        Prediction: Yes

                Age = Child
                        Prediction: Yes

        Class = Third
                Age = Adult
                        Prediction: No

                Age = Child
                        Prediction: No

        Class = Crew
                Prediction: Yes
```