**Lab 9 – extra credit**

**Objectives**

* Be familiar with GINI index and entropy
* Practice building decision tree manually

**Practice on Decision Tree**

1.Please manually build the decision tree based on entropy and information gain.

No

Strong

High

Mild

Rain

D14

Yes

Weak

Normal

Hot

Overcast

D13

Yes

Strong

High

Mild

Overcast

D12

Yes

Strong

Normal

Mild

Sunny

D11

Yes

Strong

Normal

Mild

Rain

D10

Yes

Weak

Normal

Cool

Sunny

D9

No

Weak

High

Mild

Sunny

D8

Yes

Weak

Normal

Cool

Overcast

D7

No

Strong

Normal

Cool

Rain

D6

Yes

Weak

Normal

Cool

Rain

D5

Yes

Weak

High

Mild

Rain

D4

Yes

Weak

High

Hot

Overcast

D3

No

Strong

High

Hot

Sunny

D2

No

Weak

High

Hot

Sunny

D1

Play Tennis

Wind

Humidity

Temp.

Outlook

Day

17

2\*\*\*. Challenging programming problem. Based on the “TreeGrowth” Algorithm introduced in Page 133, try to generate a decision tree programmatically.