MDL Assignment 4

Roll No : 2018113003

Problem

My Roll No is 2018113003, hence problem no (2018113003%10) + 1 = 4 dataset to be selected with the entries (0 + 3)%9 + 1 = 4 and (0)%9 + 1 = 1 entries flipped.

Hence the modified table is :

Take-off Angle (degree)	Is it Scorpio?	Speed (mph)	Topple
1.5	N	220	Y (flipped)
4.5	Y	120	Y
3	N	120	Y
5.5	N	117	Y (flipped)
3.2	N	170	N
5.2	Y	90	Y
1.85	N	120	Y
4.8	Y	147	Y
1.7	N	100	Y

Solution

Entropy

Entropy := S($\mathbf{p}$) = $-\sum p_i log(p_i)$

Steps

The attribute chosen is **take-off angle** which is continuous, condition chosen is **take-off angle = 3.2** (The only value with N as the toppling value, thus selected) hence producing two branches (Yes,No).

Hence the initial Entropy is S(%Y,%N) = S(8/9,1/9) = 0.503258335
(%Y stands for % of Y := Y/Y+N)

In the Yes branch S (Entropy) = 0, same with No branch S (Entropy) = 0. Hence the convergence point is reached.

Tree