

Outlook	Temperature	Humidity	Windy	Play
sunny	hot	high	FALSE 1	no 1
sunny	hot	high	TRUE 1	no 2
overcast	hot	high	FALSE 1	yes 1
rainy	mild	high	FALSE 2	yes 2
rainy	cool	normal	FALSE 3	yes 3
rainy	cool	normal	TRUE 2	no 3
overcast	cool	normal	TRUE 1	yes 4
sunny	mild	high	FALSE 2	no 4
sunny	cool	normal	FALSE 4	yes 5
rainy	mild	normal	FALSE 5	yes 6
sunny	mild	normal	TRUE 2	yes 7
overcast	mild	high	TRUE 3	yes 8
overcast	hot	normal	FALSE 6	yes 9
rainy	mild	high	TRUE 3	no 5

$$I(P,N) = - (9/14 \log_2(9/14)) - (5/14 \log_2(5/14)) = 0.940$$

Windy	P	N	I(P,N)
False	6	2	$-(6/8 \log_2(6/8)) - (2/8 \log_2(2/8)) = 0.811$
True	3	3	1

$$E(\text{windy}) = 8/14 (0.811) + 6/14 (1) = 0.892$$

$$\text{Gain}(\text{windy}) = I(P,N) - E(\text{windy}) = 0.940 - 0.892 = 0.048$$