

University of West London
School of Computing and Engineering
CP60034E - Artificial Intelligence

Seminar Week-12: Decision Trees

There are 14 instances stored in the database described with several attributes: day, outlook, temperature, humidity, wind and 'playTennis'. Each instance describes the facts of the day and the action of the observed person (played or not played tennis). Based on the given record we can assess which factors affected the person's decision about playing tennis.

Training Examples

Day	Outlook	Temp.	Humidity	Wind	Play Tennis
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	Weak	Yes
D8	Sunny	Mild	High	Weak	No
D9	Sunny	Cool	Normal	Weak	Yes
D10	Rain	Mild	Normal	Strong	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

Calculate the information gain values of all attributes, and select the decision attribute for the root node, and create branches with its possible values.

Is there any further splitting necessary? If so, keep splitting and build the final tree.