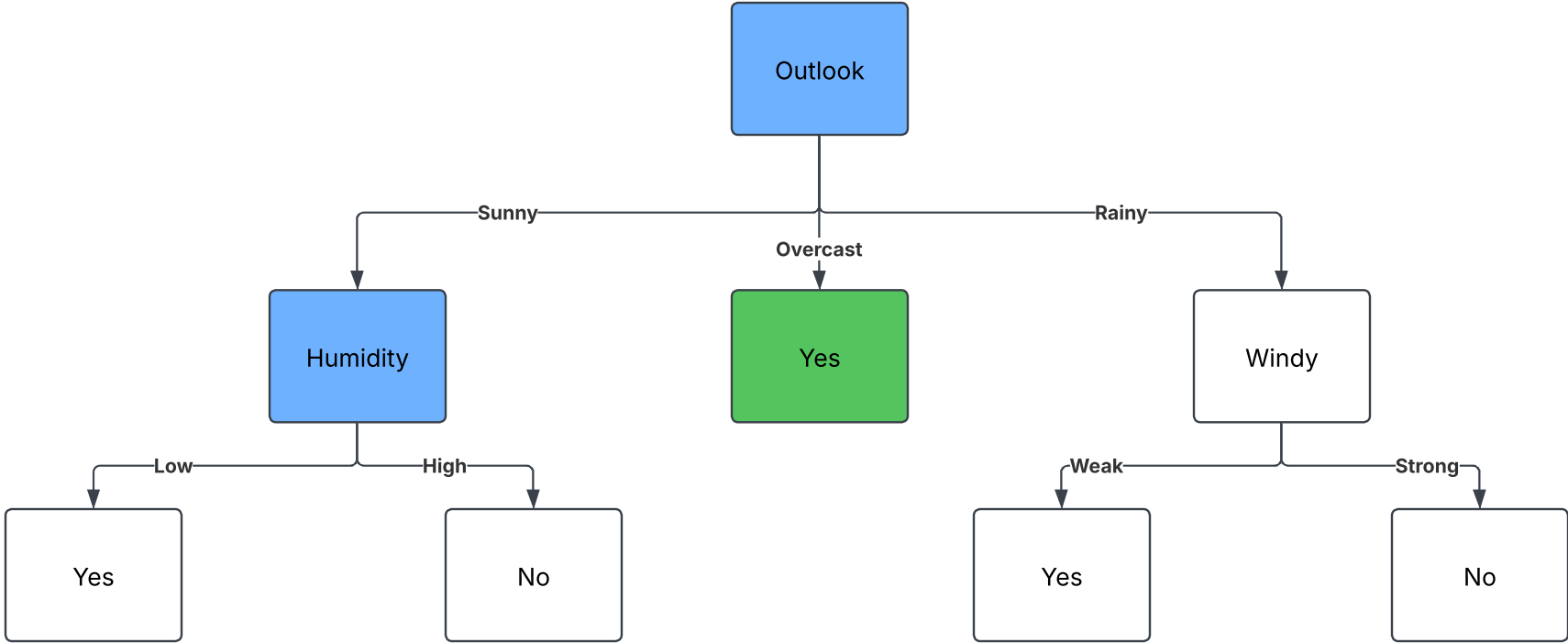


Outlook	Temperature	Humidity	Windy	Play Golf
Sunny	Hot	High	Weak	No
Sunny	Hot	High	Strong	No
Overcast	Hot	High	Weak	Yes
Rainy	Mild	High	Weak	Yes
Rainy	Cool	Normal	Weak	Yes
Rainy	Cool	Normal	Strong	No
Overcast	Cool	Normal	Strong	Yes
Sunny	Mild	High	Weak	No
Sunny	Cool	Normal	Weak	Yes
Rainy	Mild	Normal	Weak	Yes
Sunny	Mild	Normal	Strong	Yes
Overcast	Mild	High	Strong	Yes
Overcast	Hot	Normal	Weak	Yes
Rainy	Mild	High	Strong	No



Target class is Play Golf  
Entropy = -Pyes . log2(Pyес) - Pno . log2(Pno)  
Calculate Entropy of Outlook  
E(Play Golf, Sunny) = 0.97  
E(Play Golf, Overcast) = 0  
E(Play Golf, Rainy) = 0.97  
Entropy(Play Golf, Outlook) = P(Sunny) . E(Sunny) + P(Overcast) . E(Overcast) + P(Rainy). E(Rainy) = 0.69  
Information Gain (Outlook) = E(Play Golf) - E(Play Golf, Outlook) = 0.25  
Similarly, infromation gain for humidity = 0.15, Windy = 0.05, Temperature = 0.03  
Outlook has the highest information gain, so it is assigned as the root node  
Overcast has 0 entropy so no further decomp is necessary  
Decomposing sunny and rainy  
E(Sunny, Humidity) = 0  
Information Gain (Humidity) = 0.97  
Information Gain (Windy) = 0.02  
Information Gain (Temperature) = 0.57  
This is decomposed further until we get to zero entropy  
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