

Student Number:

Student Name:

Date:

CS5483 Tutorial Question 7

a) Given the weather data as shown in the table below:

Outlook	Temperature	Humidity	Windy	Play
Sunny	Hot	High	False	No
Sunny	Hot	High	True	No
Overcast	Hot	High	False	Yes
Rainy	Mild	High	False	Yes
Rainy	Cool	Normal	False	Yes
Rainy	Cool	Normal	True	No
Overcast	Cool	Normal	True	Yes
Sunny	Mild	High	False	No
Sunny	Cool	Normal	False	Yes
Rainy	Mild	Normal	False	Yes
Sunny	Mild	Normal	True	Yes
Overcast	Mild	High	True	Yes
Overcast	Hot	Normal	False	Yes
Sunny	Mild	High	True	No

In this table, there are four attributes: outlook, temperature, humidity and wind; and the outcome is whether to play or not.

(a) Show the possible Association Rules that can determine the outcome without support and confidence level.

(b) Show the Support level and Confidence level of the following association rule: If temperature = cool then humidity = normal.

Model answer to Question 7

a)

If outlook=sunny & temperature=hot & humidity=high then play=no

If outlook=overcast & temperature=hot & humidity=high & windy=false then play=yes

If outlook=rainy & temperature=mild & humidity=high & windy=false then play=yes

If outlook=rainy & temperature=cool & humidity=normal & windy=false then play=yes

If outlook=rainy & temperature=cool & humidity=normal & windy=true then play=no

If outlook=overcast & temperature=cool & humidity=normal & windy=true then

play=yes

If outlook=sunny & temperature=mild & humidity=high then play=no

If outlook=sunny & temperature=cool & humidity=normal & windy=false then play=yes

If outlook=rainy & temperature=mild & humidity=normal & windy=false then play=yes

If outlook=sunny & temperature=mild & humidity=normal & windy=true then play=yes

If outlook=overcast & temperature=mild & humidity=high & windy=true then play=yes

If outlook=overcast & temperature=hot & humidity=normal & windy=false then

play=yes

b)

The support level is $(4/14) * 100\% = 28.5\%$.

The confidence level is $(4/4) * 100\% = 100\%$.