HW8

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CS 440

1. Diagram

   Description automatically generated
   1. P(Uniform = crimson, Weather = clear, Win = true, CallFriends = true, BuyJersey = true) = P(Uniform = crimson)\*P(weather = clear)\*P(Win = true|Uniform=crimson,Weather=clear)\*P(CallFriends = true|Win = true)\*P(BuyJersey = true|Win = true) = 0.6\*0.3\*0.9\*0.7\*0.6 = 0.068
   2. P(CallFriends = true | Uniform = gray, weather = cloudy) = =
   3. P(Uniform = crimson | CallFriends = true, BuyJersey = true) = =P(clear)\*P(win|clear, crimson)\*P(call|win)\*P(buy|win)+ P(clear)\*P(~win|clear, crimson)\*P(call|~win)\*P(buy|~win)+ P(cloudy)\*P(win|cloudy, crimson)\*P(call|win)\*P(buy|win)+ P(cloudy)\*P(~win|cloudy, crimson)\*P(call|~win)\*P(buy|~win)+ P(rainy)\*P(win|rainy, crimson)\*P(call|win)\*P(buy|win)+ P(rainy)\*P(~win|rainy, crimson)\*P(call|~win)\*P(buy|~win)] =

P(Uniform = crimson | CallFriends = true, BuyJersey = true)=3.4867\*0.17208 = 0.6

1. Uniform: Crimson

Weather: Cloudy

Win|Crimson, Cloudy: True

CallFriends | Win = True: True

BuyJersey | win = True: true

P(Uniform = Crimson, Weather = cloudy, Win = true, CallFriends = true, buyjersey = true) = P(Uniform = Crimson)\*P(Weather = Cloudy) \* P(Win = true | Crimson, Cloudy) \* P(Callfriends = true | win = true)\*P(Buyjersey = true | win = true) = 0.6\*0.4\*0.6\*0.7\*0.6=0.06048