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In [10]: from pgmpy.models import BayesianNetwork
from pgmpy.factors.discrete import TabularCPD
from pgmpy.inference import VariableElimination

# Definir la estructura de la red bayesiana
modelo = BayesianNetwork([('Nublado', 'Lluvia'),
                          ('Nublado', 'Aspersor'),
                          ('Lluvia', 'HierbaMojada'),
                          ('Aspersor', 'HierbaMojada')])

# Definir las probabilidades condicionales (cpd)
cpd_nublado = TabularCPD(variable='Nublado', variable_card=2, values=[[0.5],
                                                                    [0.5]],
                          evidence=[], evidence_card=[], state_names={})

cpd_lluvia = TabularCPD(variable='Lluvia', variable_card=2,
                        values=[[0.80, 0.20],
                                [0.20, 0.80]],
                        evidence=['Nublado'],
                        evidence_card=[2],
                        state_names={
                            'Lluvia': [False, True],
                            'Nublado': [False, True]
                        })

cpd_aspersor = TabularCPD(variable='Aspersor', variable_card=2,
                          values=[[0.50, 0.90],
                                  [0.50, 0.10]],
                          evidence=['Nublado'],
                          evidence_card=[2],
                          state_names={
                              'Aspersor': [False, True],
                              'Nublado': [False, True]
                          })

cpd_hierbaMojada = TabularCPD(variable='HierbaMojada', variable_card=2,
                              values=[[1, 0.10, 0.10, 0.01],
                                      [0, 0.90, 0.90, 0.99]],
                              evidence=['Aspersor', 'Lluvia'],
                              evidence_card=[2, 2],
                              state_names={
                                  'HierbaMojada': [False, True],
                                  'Aspersor': [False, True],
                                  'Lluvia': [False, True]
                              })

#Añadir los CPD al modelo.
modelo.add_cpds(cpd_nublado, cpd_lluvia, cpd_aspersor, cpd_hierbaMojada)

#Comprobar que el modelo es válido.
assert modelo.check_model()

# Realizar inferencia usando Variable Elimination
inferencia = VariableElimination(modelo)

# Calcular P(Lluvia = Cierto | HierbaMojada = cierto)

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query_result = inferencia.query(variables=['Lluvia'], evidence={'HierbaMojada': True})  
print(query_result)
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+-----+-----+  
| Lluvia | phi(Lluvia) |  
+=====+=====+  
| Lluvia(False) | 0.2921 |  
+-----+-----+  
| Lluvia(True) | 0.7079 |  
+-----+-----+
```