

FRAUD DETECTION USING BAYESIAN NETWORKS

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NETWORK STRUCTURE:

The Bayesian Network consists of five nodes representing the following variables:

Fraud (F), Owns Device (OD), Travel (T), Foreign Purchase (FP), Online Purchase (OP)

DEPENDENCIES:

Travel (T): No parents, Affects Foreign Purchase (FP).

Foreign Purchase (FP): Dependent on Travel (T), Affects Fraud (F).

Owns Device (OD): No parents, Affects Online Purchase (OP).

Online Purchase (OP): Dependent on Owns Device (OD), Affects Fraud (F).

Fraud (F): Dependent on Online Purchase (OP) and Foreign Purchase (FP).

CONDITIONAL PROBABILITY TABLES:

Travel (T)

Travel	Probability
False	0.05
True	0.95

Foreign Purchase (FP) given Travel (T)

Travel	Foreign Purchase	Probability
False	False	0.99
False	True	0.01
True	False	0.12
True	True	0.88

Owns Device (OD)

Owns Device	Probability
False	0.3
True	0.7

Online Purchase (OP) given Owns Device (OD)

Owns Device	Online Purchase	Probability
False	False	0.95
False	True	0.05
True	False	0.60
True	True	0.40

Fraud (F) given Online Purchase (OP) and Foreign Purchase (FP)

Online Purchase	Foreign Purchase	Fraud	Probability
False	False	False	0.25
False	True	False	0.15
True	False	False	0.20
True	True	False	0.005
False	False	True	0.75
False	True	True	0.85
True	False	True	0.80
True	True	True	0.995

PROGRAM OUTPUT:

