

assignment-01-credit-card-fraud

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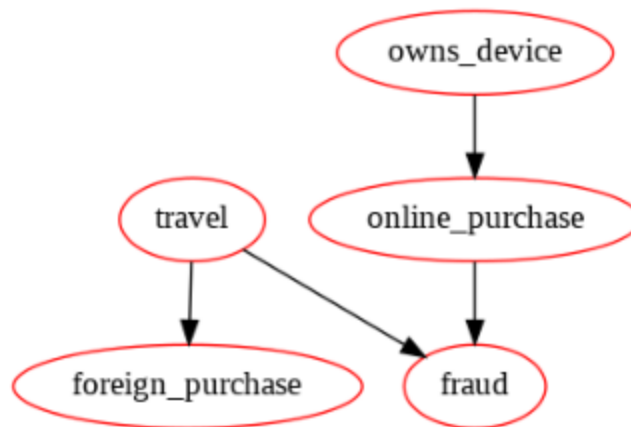
Part A

How to run

```
$ sudo apt-get install python3 jupyter  
$ pip3 install scikit-learn pandas alibi  
$ jupyter notebook credit-card-fraud.ipynb  
# Run all cells in sequence (Shift + Enter)
```

Network details

- There are 5 random variables — OwnsDevice (OD), Travel (T), OnlinePurchase (OP), ForeignPurchase (FP), Fraud (F)
- Dependency graph of the network —



Note: $X \rightarrow Y$ means Y depends on X

- Conditional probability tables —

Travel (T)	P(T)
T	0.05
F	0.95

OwnsDevice (OD)	P(OD)
T	0.7
F	0.3

ForeignPurchase (FP)	Travel (T)	P(FP T)
T	T	0.88
F	T	0.12
T	F	0.0001
F	F	0.9999

OnlinePurchase (OP)	OwnsDevice (OD)	P(OP OD)
T	T	0.4
F	T	0.6
T	F	0.05
F	F	0.95

Fraud (F)	Travel (T)	OnlinePurchase (OP)	P(F T, OP)
T	T	T	0.99995
F	T	T	0.00005
T	T	F	0.85
F	T	F	0.15
T	F	T	0.8
F	F	T	0.2
T	F	F	0.75
F	F	F	0.25