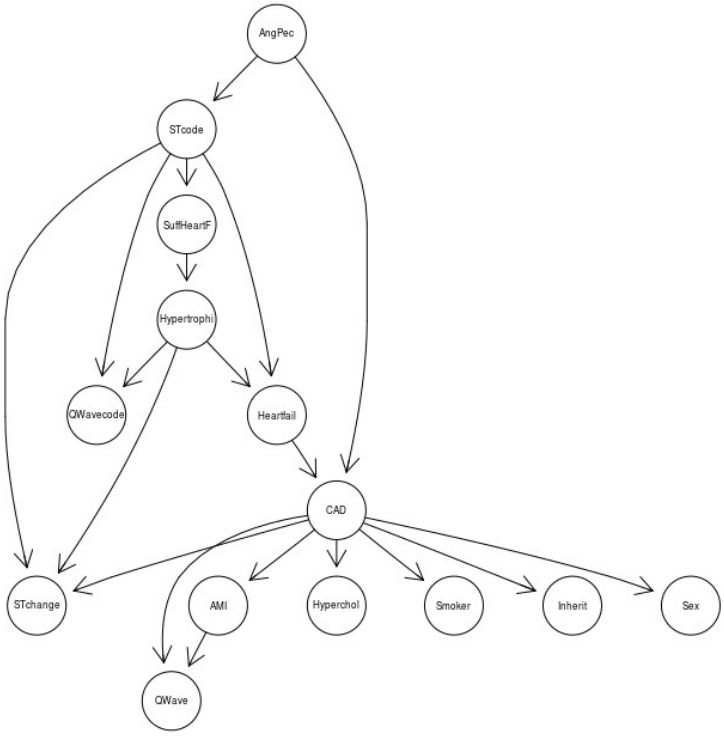
# Homework-4

Q.1)
Bayesian network for cad1 dataset has been shown in the figure. Note that it is not the optimal network.



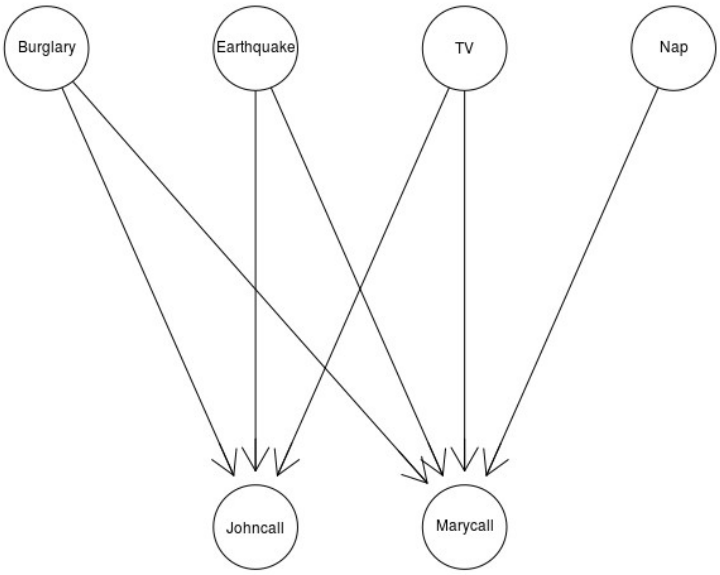

```
P( Sex )
P( SuffHeartF )
P( Hyperchol | SuffHeartF Smoker )
P( Smoker | Sex )
P( Inherit | Smoker )
P( CAD | Inherit Hyperchol )
```

This shows probability tables for optimal dataset generated in R.

When we absorb values for given variables, probability for both absorbed and unabsorbed variable remains the same.

Now dataset having 5 rows is generated.
Value for smoke and CAD is independently predicted using linear regression. Same procedure is repeated for dataset of 500 rows.

Q.2) Bayesian network when a node is removed from the previous nw is as below:



Q.3)
a)False
b) True
c) False
d) True
e) False

Answers are calculated using Dsep function which gives boolean results.