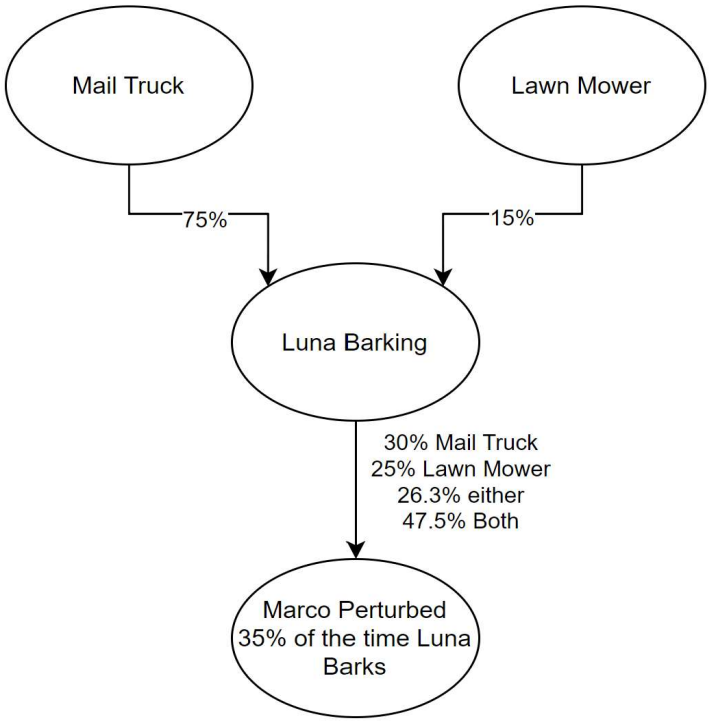
Dom Scordino
11.7.24
SFE 340
Prof Meyer
Assignment 7

Probability of Barking = P(B)
Probability of Mail Truck = P(M)
Probability of Lawn Mower = P(L)
Probability of Marco Perturbed = P(P)

Network Drawing



Equations Used			
Cause	Probability of Cause	Probability Lupa Barks Due to Cause	Probability Marco Perturbed Given Lupa Barks
Mail Truck	75.0%	30.0%	35.0%
Lawn Mower	15.0%	25.0%	35.0%
Either Cause	P(M) + P(L)	$P(B)=P(B\|M)\cdot P(M)+P(B\|L)\cdot P(L)$	$P(P)=P(P\|B)\cdot P(B)$
Both Causes	P(M) × P(L)	$P(B\|M\cap L)=1-(1-P(B\|M))\times(1-P(B\|L))$	$P(P\|M\cap L)=P(P\|B)\cdot P(B\|M\cap L)$

Probability Table			
Cause	Probability of Cause	Probability Lupa Barks Due to Cause	Probability Marco Perturbed Given Lupa Barks
Mail Truck	75.0%	30.0%	35.0%
Lawn Mower	15.0%	25.0%	35.0%
Either Cause	90.0%	26.3%	9.2%
Both Causes	11.3%	47.5%	16.6%

Assumptions Made
Macro is not perturbed if Luna does not bark
Luna does not bark if there is no cause
Luna does not bark while Mary is home