

## Steps TO Prevent (STOP) Sexual Assault

This domain is inspired from the University of Illinois at Chicago (UIC) Campus Advocacy Centre (CAN) training which I had taken last semester. I think trainings on prevention of sexual assault is very important so that the victim is given justice and offender is punished. Everyone should be informed as to how to prevent these situations and whom to contact when an untoward event like this occurs. I also read a paper on the same topic and gathered some of the factors contributing to sexual assault at campus and combined them to make a simple Bayesian network of my own. I have 15 attributes namely: -

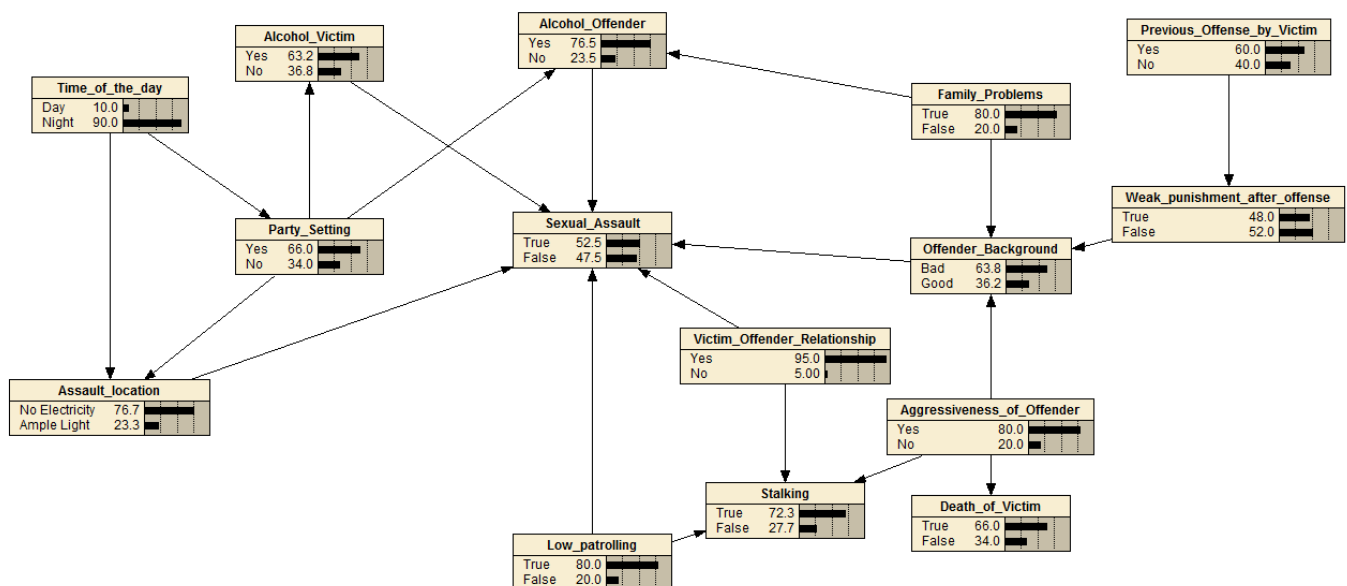
- Alcohol consumed by victim
- Alcohol consumed by offender
- Victim-Offender relationship
- Party Setting
- Assault location
- Time of the day
- Previous offense by the offender
- Weak punishment after offense
- Offender background
- Aggressiveness of offender
- Stalking
- Low patrolling
- Family problems of offender
- Death, and
- Sexual assault

I developed relationships between these attributes. For e.g. Low patrolling, victim offender relationship and aggressiveness of the offender leads to Stalking. Also if an offender has committed the same crime before and was not punished or was given a weak punishment then it is very likely that the offender can commit the same mistake again thinking that he/she will get away from it again. The CAN training provided most of the statistics and the intuition behind the network formulation. For e.g. 1 in 3 sexual assault crimes are committed by someone who knows the victim personally. Or that alcohol is one of the leading attributes in sexual assaults. If both victim and offender have a relationship and both have consumed alcohol then there is a good chance of sexual assault if the victim is not in senses or has resisted from any sexual activity.

Please find the **Sexual\_Assault\_Bayesian\_Network.dne** file in the same folder as this report. Please find a screenshot of the same attached here. I have given probabilistic values to every attribute, for e.g.

Victim_Offender_Relationship	Low_patrolling	Aggressiveness_of_Offender	True	False
Yes	True	Yes	85	15
Yes	True	No	70	30
Yes	False	Yes	35	65
Yes	False	No	20	80
No	True	Yes	95	5
No	True	No	70	30
No	False	Yes	30	70
No	False	No	50	50

If the victim has a relationship with offender and there is low patrolling and the offender is aggressiveness then the probability of offender **stalking** the victim is 85% and so on.



Some other tables are as follows: -

Offender background attribute table: - depends on weak punishment, family problems, and aggressiveness.

Weak_punishment_after_offense	Family_Problems	Aggressiveness_of_Offender	Bad	Good
True	True	Yes	90	10
True	True	No	80	20
True	False	Yes	75	25
True	False	No	70	30
False	True	Yes	50	50
False	True	No	40	60
False	False	Yes	30	70
False	False	No	20	80

Alcohol consumption by offender: - depends on family problems and whether there is a party.

Family_Problems	Party_Setting	Yes	No
True	Yes	90	10
True	No	60	40
False	Yes	70	30
False	No	50	50

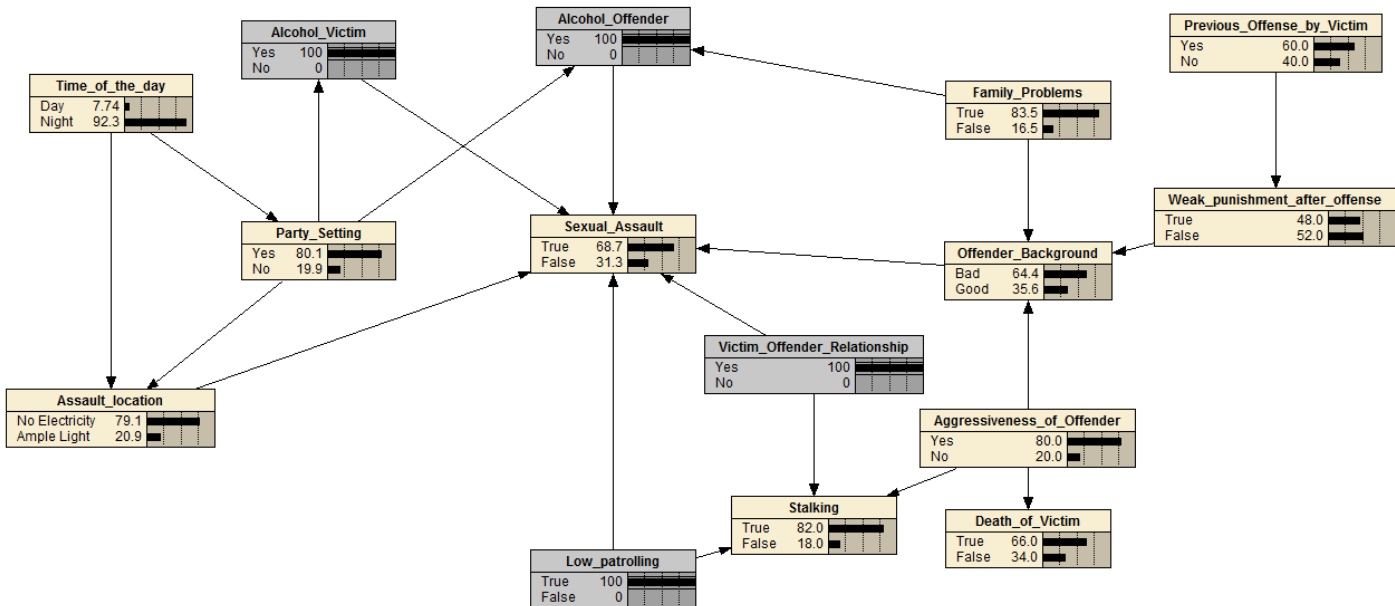
Sexual assault node has 6 incoming edges each having 2 possible values, so there are 64 cases for sexual assault and I have given the values for sexual assault probability based on the other 6 attributes.

Offender_Background	Alcohol_Victim	Alcohol_Offender	Victim_Offender_Relationship	Assault_location	Low_patrolling	True	False
Bad	Yes	Yes	Yes	No Electricity	True	80	20
Bad	Yes	Yes	Yes	No Electricity	False	40	60
Bad	Yes	Yes	Yes	Ample Light	True	60	40
Bad	Yes	Yes	Yes	Ample Light	False	30	70
Bad	Yes	Yes	No	No Electricity	True	60	40
Bad	Yes	Yes	No	No Electricity	False	40	60
Bad	Yes	Yes	No	Ample Light	True	50	50
Bad	Yes	Yes	No	Ample Light	False	30	70
Bad	Yes	No	Yes	No Electricity	True	60	40
Bad	Yes	No	Yes	No Electricity	False	30	70
Bad	Yes	No	Yes	Ample Light	True	50	50
Bad	Yes	No	Yes	Ample Light	False	20	80
Bad	Yes	No	No	No Electricity	True	40	60
Bad	Yes	No	No	No Electricity	False	20	80
Bad	Yes	No	No	Ample Light	True	30	70
Bad	Yes	No	No	Ample Light	False	40	60
Bad	No	Yes	Yes	No Electricity	True	70	30
Bad	No	Yes	Yes	No Electricity	False	30	70
Bad	No	Yes	Yes	Ample Light	True	50	50
Bad	No	Yes	Yes	Ample Light	False	20	80
Bad	No	Yes	No	No Electricity	True	50	50
Bad	No	Yes	No	No Electricity	False	30	70
Bad	No	Yes	No	Ample Light	True	40	60
Bad	No	Yes	No	Ample Light	False	20	80
Bad	No	No	Yes	No Electricity	True	50	50
Bad	No	No	Yes	No Electricity	False	20	80
Bad	No	No	Yes	Ample Light	True	40	60

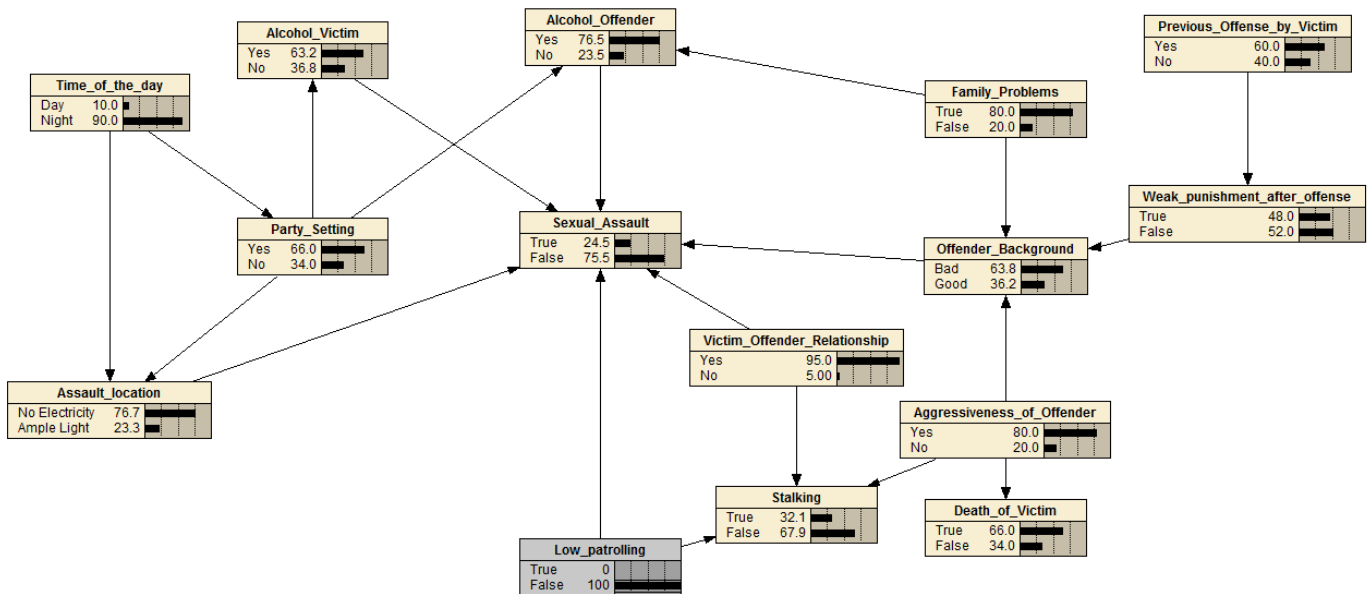
Some of these values might not be statistically correct, I am just trying to formulate a network and show what conditions can cause a sexual assault and what corrective measures can be taken to prevent it.

The test cases and possible scenarios that can lead to increase or decrease in sexual assault are as follows: -

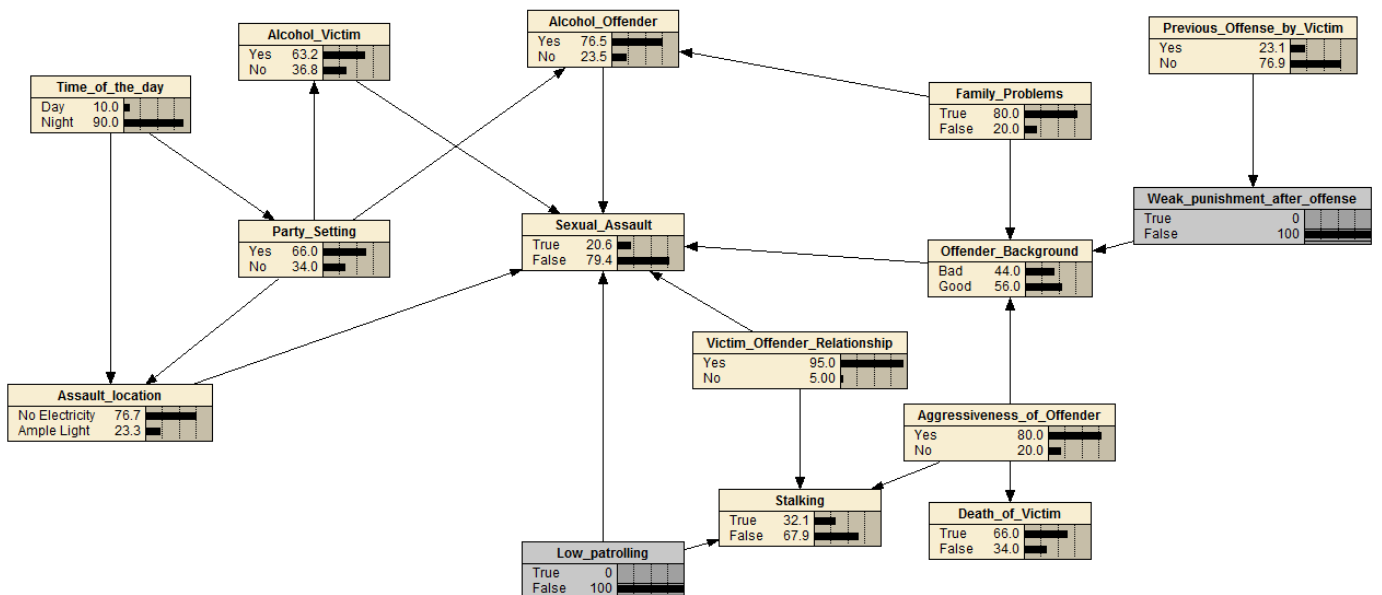
**Test Case 1:** - If victim offender have a relationship and both victim and offender have consumed alcohol and there is low patrolling then the probability of sexual assault increases from **52.5%** to **68.7%**



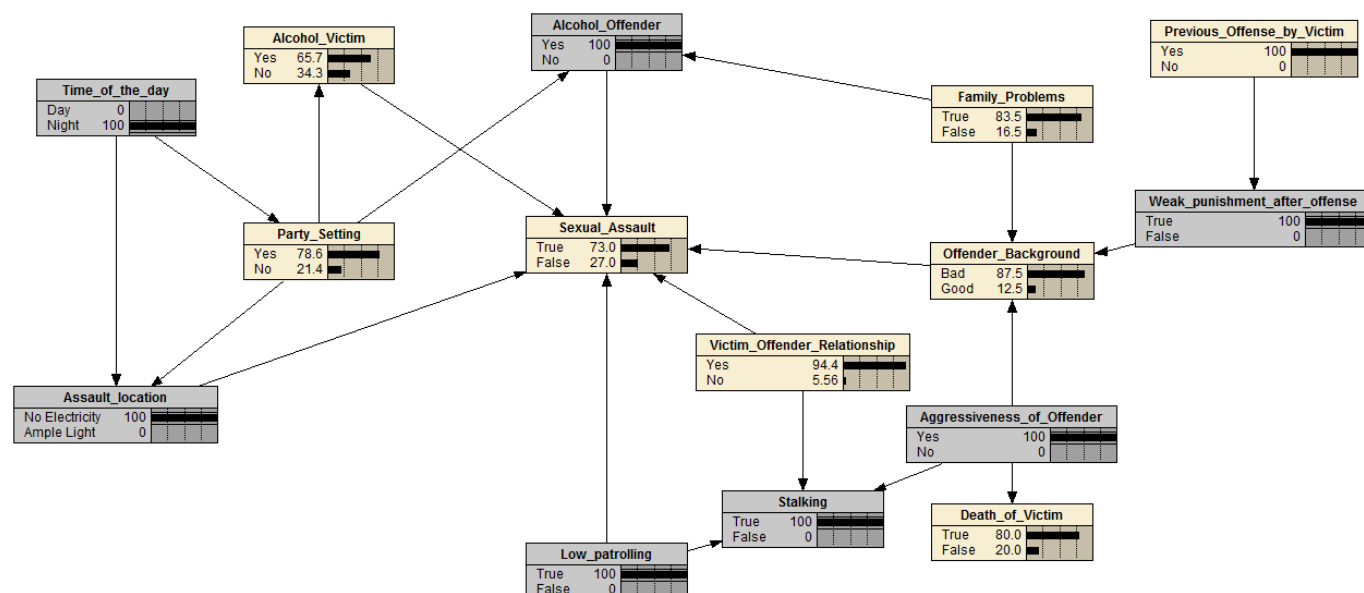
**Test Case 2:** - If patrolling increases to **100%** i.e. there are too many security personnel doing rounds around the campus, or there are many cameras around the campus, then stalking reduces from **72.3%** to **32.1%** and sexual assault reduces from **52.5%** to **24.5%**. So as we see a single attribute like patrolling can contribute a lot in reducing these events.



**Test Case 3:** - Similarly if an offender who has committed the same offense before and if he/she was let off without any punishment then the offender committing the same crime again has higher probability. Instead if the punishment was appropriate and there is increased patrolling then sexual assault decreases to a mighty **20.6%**.



**Test Case 4:** - There was also one point which was stressed during the CAN training that alcohol do play a role in sexual assault but it is not that it is completely the victim's fault if he/she has consumed the alcohol. Consider this scenario where in I have not changed the alcohol values for victim. The time of the day is night, offender has consumed alcohol, the assault location is poorly lit or has no electricity, there is no patrolling, offender had committed the same crime before and got away with it, the offender is very aggressive, and he is stalking the victim, then the probability that there will be a sexual assault on the victim rises to **73.0%**, and **80% of the times the victim will be MURDERED.**



Of course, there are many other attributes that play a role in sexual assault like number of people around, gender of the victim, previous bad past between victim and offender, etc. I wanted to give out a simple and effective formulation to the factors that can play a very crucial role in sexual assault and what factors can be improved to prevent them.