In [36]:

```
import pandas as pd
from pgmpy.models import BayesianModel
from pgmpy.inference import VariableElimination
```

In [37]:

```
data=pd.read_csv('diabetes.csv')
data.head()
```

Out[37]:

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunctio
0	6	148	72	35	0	33.6	0.62
1	1	85	66	29	0	26.6	0.35
2	8	183	64	0	0	23.3	0.67
3	1	89	66	23	94	28.1	0.16
4	0	137	40	35	168	43.1	2.28

In [38]:

```
not_zero=['Glucose','BloodPressure','SkinThickness','Insulin','BMI']
for colum in not_zero:
    mean=int(data[colum].mean())
    data[colum]=data[colum].replace(0,mean)
```

In [39]:

```
bbn_m=BayesianModel([("Pregnancies","Glucose"),("Glucose","BloodPressure"),("BloodPressure"
bbn_m.fit(data)
```

In [44]:

```
infer=VariableElimination(bbn_m)
q=infer.query(variables=["Outcome"],evidence={"Pregnancies":1})
```

```
Finding Elimination Order: :   0%|          | 0/2 [00:00<?, ?it/s]
  0%|          | 0/2 [00:00<?, ?it/s]
Finding Elimination Order: : 100%|██████████| 2/2 [00:00<00:00, 286.51it/s]

Eliminating: Glucose: 100%|██████████| 2/2 [00:00<00:00, 125.35it/s]
```

In [45]:

```
print(q)
```

```
+------------+----------------+
| Outcome    |   phi(Outcome) |
+============+================+
| Outcome(0) |         0.6630 |
+------------+----------------+
| Outcome(1) |         0.3370 |
+------------+----------------+
```

In [ ]: