Assignment 1

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Problem Statement :

Creating & Visualizing Neural Network for the given data.

In [1]:
```
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
import warnings
warnings.filterwarnings
%matplotlib inline
```

In [2]:
```
df=pd.read_csv("diabetes.csv")
```

In [3]:
```
df
```

Out[3]:

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction
0	6	148	72	35	0	33.6	0.627
1	1	85	66	29	0	26.6	0.351
2	8	183	64	0	0	23.3	0.672
3	1	89	66	23	94	28.1	0.167
4	0	137	40	35	168	43.1	2.288
...	...	...	...	...	...	...	...
763	10	101	76	48	180	32.9	0.171
764	2	122	70	27	0	36.8	0.340
765	5	121	72	23	112	26.2	0.245
766	1	126	60	0	0	30.1	0.349
767	1	93	70	31	0	30.4	0.315

768 rows × 9 columns

In [4]:
```
X = df.drop('Outcome',axis = 1)
y = df['Outcome']
```

In [5]:
```
from keras.models import Sequential
from keras.layers import Dense
```

In [6]:
```
model = Sequential()
model.add(Dense(12, input_dim=8, activation='relu'))
model.add(Dense(8, activation='relu'))
model.add(Dense(1, activation='sigmoid'))
```

In [7]:
```
model.compile(loss='binary_crossentropy', optimizer='adam', metrics=['accurac
```

In [8]:
```
d   fi (X,  ,       = 00, b    _ iz =10)
```

```
     1  00
     [                              ]   1                : 10   90
    : 0    9
       00
     [                              ]   0                : 1 9  8
   : 0  1 0
       00
     [                              ]   0                : 1    9
   : 0   80
       00
     [                              ]   0                : 1 0 1
   : 0
       00
     [                              ]   0                : 0 9 9
   : 0   0
       00
     [                              ]   0                : 0 918
   : 0   80
       00
```

In [9]:
```
      =   d    v      (X,  )
in ("\n% : %  f%%" % (  d       i  _n    [1],       [1]*100))
```

```
     [                              ]   0                : 0    8
   : 0   08

       :    08%
```

In [10]:
```
! i  in       nn_vi    iz
```

```
L  king in ind x  :      :     i   g  i    , (     :     i   g  i    ,)
 :          n  kg d v     b w        b i   i      (     :          n  kg d
v     b w        b i   i     )
C      ing  nn_vi    iz
  D wn   ding  nn_vi    iz           gz (    kB)
B i ding w      f           d    k g  :  nn vi    iz
  B i ding w     f    nn vi    iz   (        )     d n
  C     d w     f    nn vi    iz  : fi  n     nn_vi    iz           n n   n
  w    iz   1 8          d09 bd   d  ff  b19  10bd0  b 0d f 19 b b 0 0   9
9    d 0b b
  S    d in di       :              i  w      1b f   8   b1  b 0  010 9 9 0
8b  ddd  fb 9b1  8   f98  1f
S      f     b i    nn vi    iz
In     ing         d    k g  :  nn vi    iz
S      f     in      d  nn vi    iz
```

In [11]:
```
from  nn_vi    iz   vi    iz  import  nn_viz;
 nn_viz(  d  ,  i   ="N      N  w  k")
```