

Name: Saloni Vishwakarma

Roll No: C1-13

## ▼ Perceptron

```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

```
df = pd.read_csv('Diabetes.csv')
```

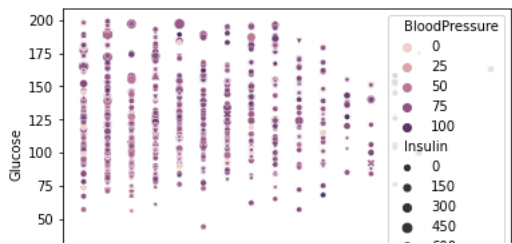
```
print(df.shape)
df.head()
```

(768, 9)

	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome
0	6	148	72	35	0	33.6	0.627	50	1
1	1	85	66	29	0	26.6	0.351	31	0
2	8	183	64	0	0	23.3	0.672	32	1
3	1	89	66	23	94	28.1	0.167	21	0
4	0	137	40	35	168	43.1	2.288	33	1

```
sns.scatterplot(df['Pregnancies'],df['Glucose'],df['BloodPressure'],df['SkinThickness'],
                df['Insulin'],df['Age'],hue=df['Outcome'])
```

C:\Users\acer\anaconda3\lib\site-packages\seaborn\decorators.py:36: FutureWarning: Pass the following variables as keyword args: x, warnings.warn(  
 <AxesSubplot:xlabel='Pregnancies', ylabel='Glucose'>



```
x = df.iloc[:,0:2]
y = df.iloc[:, -1]
```

```
print (x)
```

	Pregnancies	Glucose
0	6	148
1	1	85
2	8	183
3	1	89
4	0	137
..	...	...
763	10	101
764	2	122
765	5	121
766	1	126
767	1	93

[768 rows x 2 columns]

```
print(y)
```

0	1
1	0
2	1
3	0
4	1
..	..
763	0
764	0
765	0
766	1
767	0

Name: Outcome, Length: 768, dtype: int64

```
from sklearn.linear_model import Perceptron
p = Perceptron()
```

```
p.fit(x,y)
```

```
Perceptron
Perceptron()
```

```
p.coef_
```

```
array([[212.,  91.]])
```

```
p.intercept_
```

```
array([-281.])
```

```
from mlxtend.plotting import plot_decision_regions
```

```
plot_decision_regions(x.values, y.values, clf=p, legend=2)
```

C:\Users\acer\anaconda3\lib\site-packages\sklearn\base.py:465: UserWarning: X does not have valid feature names, but Perceptron was  
warnings.warn(  
<AxesSubplot:>

