ANN Single Layer Perceptron

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1 Implementation of Single Layer Perceptron in Artificial Neural Network

[ ]:
```
import numpy as np
```

[ ]:
```
x=np.array([7,8,9,6])
w=np.array([4,3,2,5])
```

[ ]:
```
print('Grades:')
print(x)
print('Credit Point:')
print(w)
```

```
Grades:
[7 8 9 6]
Credit Point:
[4 3 2 5]
```

[ ]:
```
def ANN(x,w):
    wt_sum=np.dot(x,w)
    return wt_sum
```

[ ]:
```
def Act_Func(cgpa):
  if cgpa>=60:
    return 1
  else:
    return 0
```

[ ]:
```
print('Weighted Sum:')
print(ANN(x,w))
```

```
Weighted Sum:
100
```

[ ]:
```
import pandas as pd
```

[ ]:
```
df=pd.read_csv('/content/drive/MyDrive/Colab Notebooks/ML-DSE4/ANN.csv')
```

[ ]:
```
print(df)
```

```
   Roll_No  Mathematics  Comp_Sci
0        1            8         9
1        2            8         9
2        3            8         9
3        4            8         8
4        5            9         8
5        6            5         8
6        7            6         7
7        8            9         7
8        9            7         6
9       10            4         6
```

[ ]:
```
print(df['Roll_No'][0])
```

```
1
```

[ ]:
```
print(df.loc[0][1:])
```

```
Mathematics    8
Comp_Sci       9
Name: 0, dtype: int64
```

[ ]:
```
grades=list()
for i in range(10):
  grades=df.loc[i][1:]
  print('Student ',i+1)
  print('Weighted Sum',ANN(grades,w))
  if (Act_Func(ANN(grades,w))==1):
    print('Pass')
  else:
    print('Fail')
```

```
Student  1
Weighted Sum 120
Pass
Student  2
Weighted Sum 103
Pass
Student  3
Weighted Sum 106
Pass
Student  4
Weighted Sum 83
Pass
Student  5
Weighted Sum 98
```

```
Pass
Student  6
Weighted Sum 99
Pass
Student  7
Weighted Sum 91
Pass
Student  8
Weighted Sum 76
Pass
Student  9
Weighted Sum 75
Pass
Student  10
Weighted Sum 88
Pass
```

[ ]: