## AI Lab Assignment 05

Problem Statement: Perceptron Learning

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```
#include <bits/stdc++.h>
using namespace std;
int signum(int net){
    if (net < 0)
        return -1;
    else
        return 1;
int main()
    float label[3] = {0 , 1 , 1};
    float Weights[4] = {1, -1, 0, 0.5};
    float c = 1;
    float x[3][4] = {
        {1, 2, 3, 4},
        \{1, 3, 5, 7\},\
        {-1, 2, 4, 6}};
    for (int i = 0; i < 3; i++)
        float net = 0;
        for (int j = 0; j < 4; j++)
            net += Weights[j] * x[i][j];
        int o;
        if (net != 0)
            o = signum(int(net));
        int y = label[i] - o;
        for (int j = 0; j < 4; j++)
            Weights[j] = Weights[j] + c * y * x[i][j];
            cout <<Weights[j] << " ";</pre>
        cout << endl;</pre>
```

## Output:

```
vements! https://aka.ms/PSWindows

PS C:\Users\Dell\OneDrive\Desktop\VS Code\AI Lab> cd "c:
\Users\Dell\OneDrive\Desktop\VS Code\AI Lab\" ; if ($?)
{ g++ Lab5.cpp -o Lab5 } ; if ($?) { .\Lab5 }
0 -3 -3 -3.5
2 3 7 10.5
2 3 7 10.5
PS C:\Users\Dell\OneDrive\Desktop\VS Code\AI Lab>
```

```
C→ Lab5.cpp ×
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                                                                                                                                                    Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved
           #include <bits/stdc++.h>
using namespace std;
                                                                                                           Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
                int signum(int net)
                                                                                                           \USERS\DEII\OneDrive\Desktop\VS Code\AI Lab\" ; if ($?) \{ g++ Lab5.cpp -o Lab5 } ; if ($?) \{ .\Lab5 } \\ 0 -3 -3 -3 5.
                          return 1;
                                                                                                           0 -3 -3 -3.5
2 3 7 10.5
2 3 7 10.5
PS C:\Users\Dell\OneDrive\Desktop\VS Code\AI Lab>
float label[3] = {0 , 1 , 1};
float Weights[4] = {1, -1, 0, 0.5};
    ▶ Run Testcases ⊗ 0 ≜ 0 ☐ Connect ♂ Live Share
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```