In [1]:
```
## Tejas Acharya
## EE-541
## Homework 03
## Problem 01
## 06-06-2023
```

In [2]:
```
#Importing Libraries
import numpy as np
```

In [3]:
```
class MLP():
    def __init__(self):
        self.weight_1 = np.array([[1, -2], [3, 4]])
        self.bias_1 = np.array([1, 0])
        self.weight_2 = np.array([[2, 2], [3, -2]])
        self.bias_2 = np.array([0, -4])

    def predict(self, x):
        z_1 = np.dot(self.weight_1, x) + self.bias_1
        a_1 = self.relu(z_1)

        z_2 = np.dot(self.weight_2, a_1) + self.bias_2
        y = z_2

        return y


    def relu(self, z):
        return np.maximum(z, np.zeros_like(z))
```

In [4]:
```
x = np.array([1, -1])

model = MLP()

y = model.predict(x)
print(f'The output is y = {y} for input x = {x}.')
```

```
The output is y = [8 8] for input x = [ 1 -1].
```