In [1]:
```
import numpy as np
```

In [22]:
```
x1 = np.array([1, 1, 1, 1, 1]).reshape(5,1)
x2 = np.array([-1, -1, -1, -1, -1]).reshape(5,1)
y1 = np.array([1, 1]).reshape(2,1)
y2 = np.array([-1, -1]).reshape(2,1)
```

In [23]:
```
W = np.dot(x1 ,y1.T) + np.dot(x2, y2.T)
W_t = np.dot(y1, x1.T) + np.dot(y2, x2.T)
```

In [24]:
```
def bam(input_vector):
    if np.array_equal(input_vector,x1) or np.array_equal(input_vector,x1):
        return np.dot(input_vector.T, W)
    else:
        return np.dot(input_vector.T, W_t)
```

In [26]:
```
input_vector = y2
output_vector = bam(input_vector)
out_v=[]
for i in output_vector:
    for j in range(len(i)):
        o = 1 if i[j]>1  else -1 if i[j]<-1 else 0
        out_v.append(o)
print(f"Input vector : \n{input_vector}\nOuput Vector : {out_v}")
```

```
[[-4 -4 -4 -4 -4]]
Input vector :
[[-1]
 [-1]]
Ouput Vector : [-1, -1, -1, -1, -1]
```

In [ ]:
```

```