```
% Aditya Agre SYCOA06
% Auto associative memory algorithm
clear  all
% Input vector
x = [1 -1 1 -1 ; 1, 1, -1, -1]
```

```
x = 2×4
     1    -1     1    -1
     1     1    -1    -1
```

```
% target output
t = x
```

```
t = 2×4
     1    -1     1    -1
     1     1    -1    -1
```

```
% Weight matrix
W = x'*x
```

```
W = 4×4
     2     0     0    -2
     0     2    -2     0
     0    -2     2     0
    -2     0     0     2
```

```
x1 = [0 -1 1 -1] % One missing entry
```

```
x1 = 1×4
     0    -1     1    -1
```

```
% Net Input
z1 = x1*W
```

```
z1 = 1×4
     2    -4     4    -2
```

```
for j = 1:4
    if z1(1,j)>0
        y1(1, j) = 1;
    elseif z1(1,j)<0
         y1(1, j) = -1;
    else
        y1(1, j) = 0;
    end
end
y1
```

```
y1 = 1×4
     1    -1     1    -1
```

```
x2 = [0 0 1 -1] % Two missing entries
```

```
x2 = 1×4
     0     0     1    -1
```

```
% Net Input
z1 = x2*W
```

```
z1 = 1×4
     2    -2     2    -2
```

```
for j = 1:4
    if z1(1,j)>0
        y1(1, j) = 1;
    elseif z1(1,j)<0
         y1(1, j) = -1;
    else
        y1(1, j) = 0;
    end
end
y1
```

```
y1 = 1×4
     1    -1     1    -1
```

```
x3 = [1 1 1 -1] % One mistaken entry
```

```
x3 = 1×4
     1     1     1    -1
```

```
% Net Input
z1 = x3*W
```

```
z1 = 1×4
     4     0     0    -4
```

```
for j = 1:4
    if z1(1,j)>0
        y1(1, j) = 1;
    elseif z1(1,j)<0
         y1(1, j) = -1;
    else
        y1(1, j) = 0;
```

```
    end
end
y1
```

```
y1 = 1×4
     1     0     0    -1
```

```

```