**Ex.No.: 4**

**Title : Implementation of Kohenen Self organizing map**

**Odd Batch & Even Batch**

1. Write a Python Program for updating the weights of K-SOM Network.

Steps:

Initialize the K-SOM network with a grid of neurons.

Randomly initialize the weights of each neuron in the network.

Iterate through the input samples, and for each sample, find the best matching unit (BMU) by calculating the Euclidean distance between the input and the weights of each neuron.

Update the weights of the BMU and its neighboring neurons using a learning rate and a neighborhood function.

Repeat the above step for a fixed number of iterations or until convergence.

Evaluate the performance of the network and measure the clustering quality if applicable.

1. Implement Kohenen Self organizing map for Standfords car dataset / any image dataset.