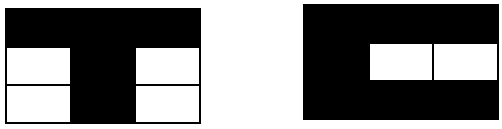
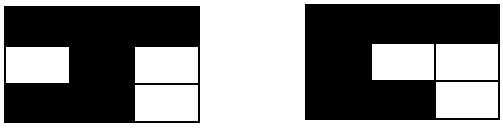
CS5486 Intelligent Systems

Assignment 3

1. Simulate a 5-neuron MAXNET with lateral connection weight of –0.15, and external input vector of (0.1, 0.3, 0.5, 0.7, 0.9). Do the same for the *k*WTA network with $k = 1$ and 2.

2. Simulate a 9-neuron discrete Hopfield network as an associative memory of 3-by-3 digital images as shown in Fig. 1. First determine the connection weights using the outer product rule. Then retrieve the two store patterns by using two keys (probes) with variations of one pixel.

Original patterns to be stored 

Noisy patterns to be used for retrieval 

Due by April 17, 2025.