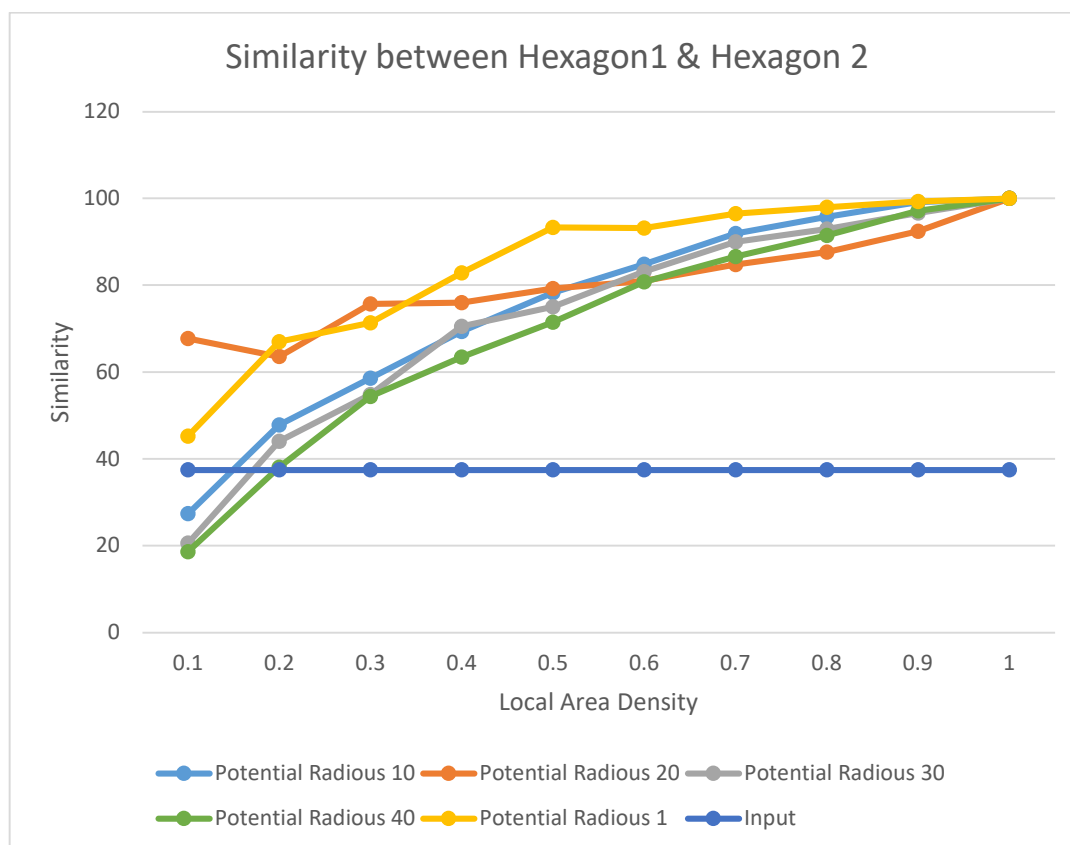
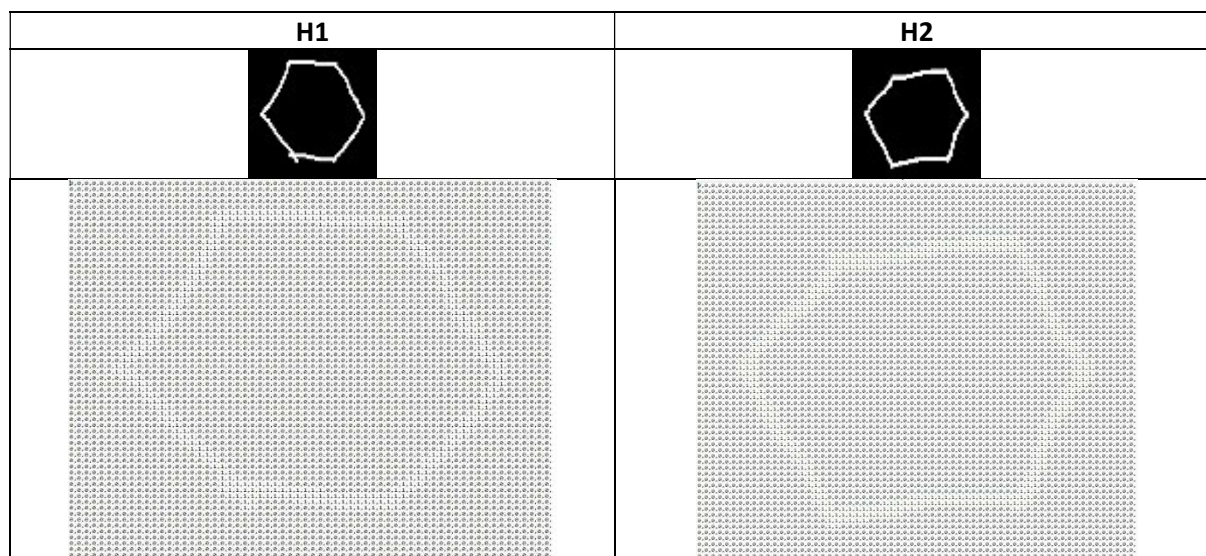




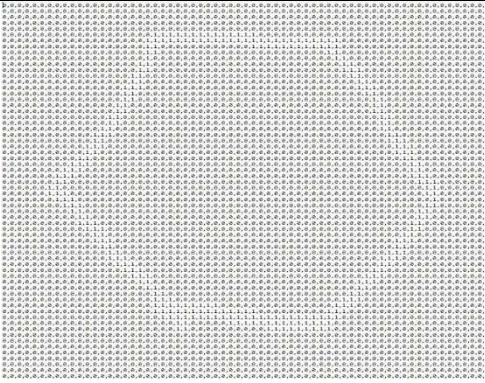
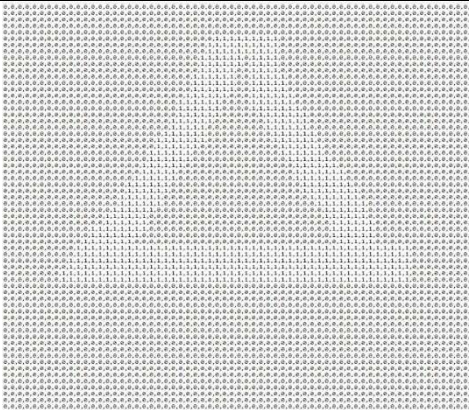
## Comparing the Similarity of Different images based on Local Area Density and Potential Radius:

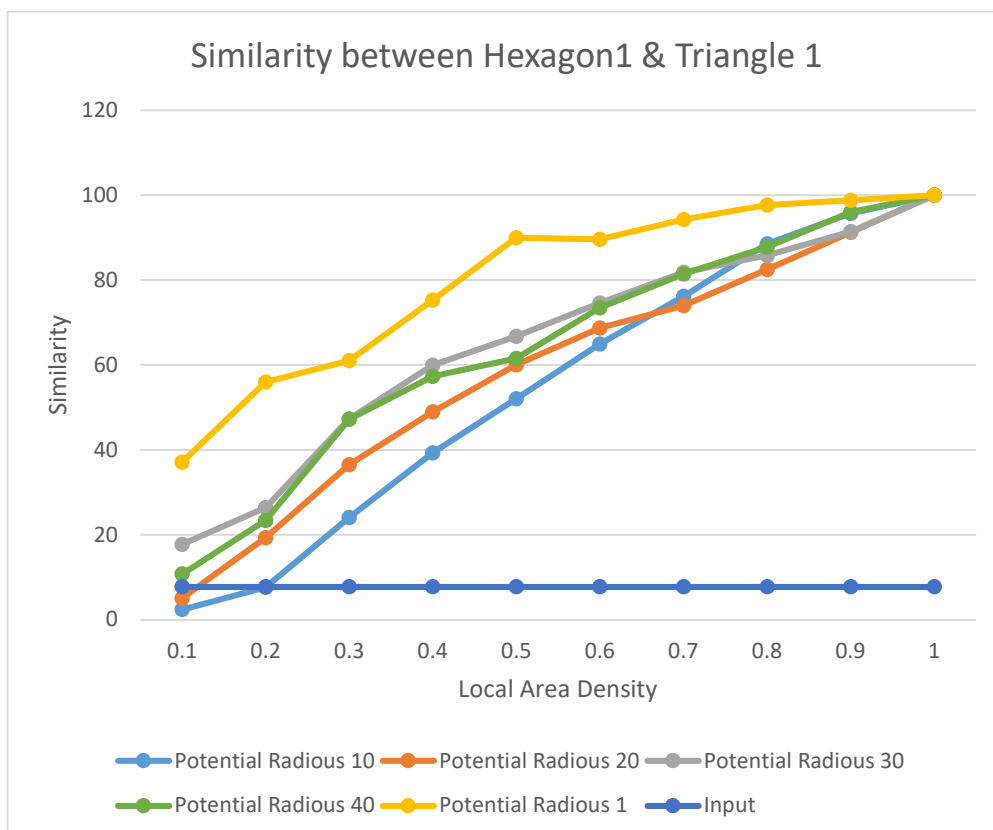
### 1) Comparing 2 pictures of the same category:



Because Hexagon1 and Hexagon2 are both from the same category we expect the Highest Similarity between 2 pictures SDR comparison which is output of the spatial pooler. Potential Radius 20 and Potential Radius 1 have the highest similarity from the beginning. And by increasing the Local Area Density the Similarity also increases.

## 2) Comparing 2 pictures of different categories:

H1	T1
	
	



Here because the comparison is between 2 pictures of different categories, so we expect the lowest SDR similarity after training the Spatial Pooler. Potential Radius 10 and Potential Radius 20 have the lowest similarity compare to other experiment, so they have the desired expectation.

In both comparison by increasing the Local Area Density Similarity will increase, regardless of the images themselves.

Overall by considering the above results Potential Radius 20 had the best results which were expected.