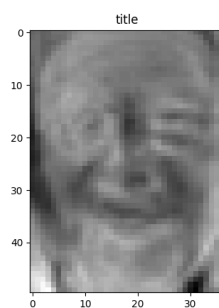
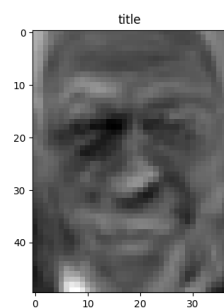
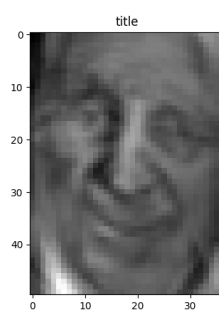
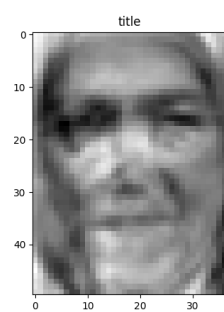
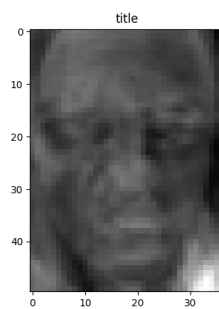
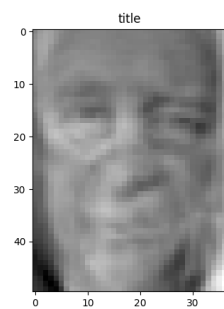
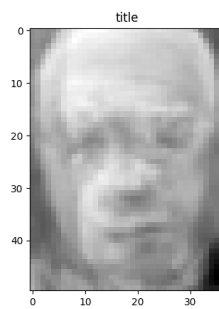
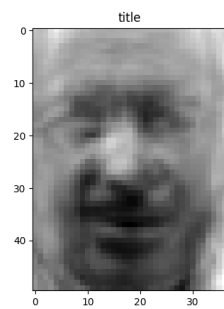
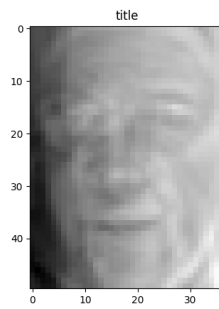
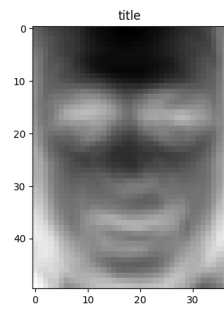


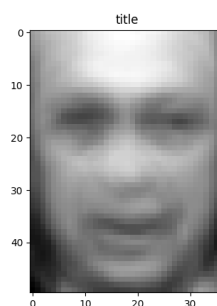
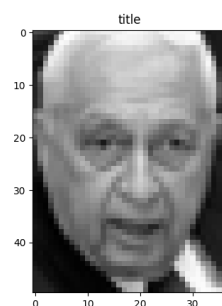
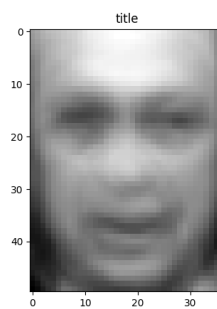
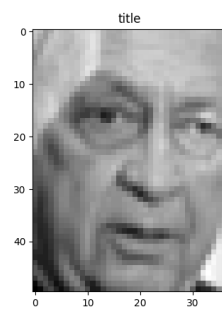
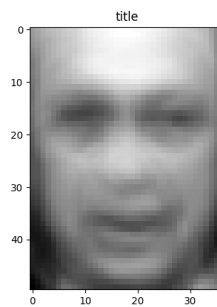
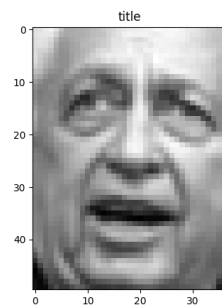
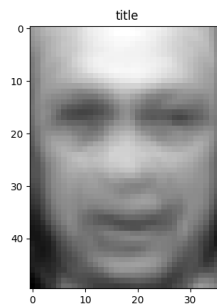
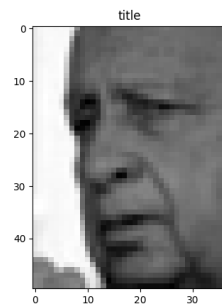
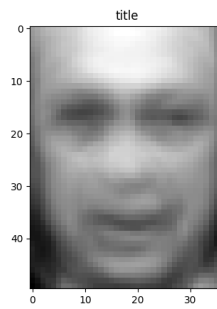
## Programming assignment:

B.

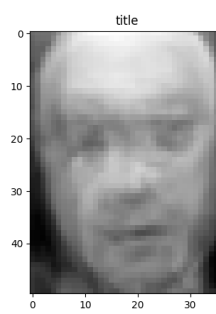
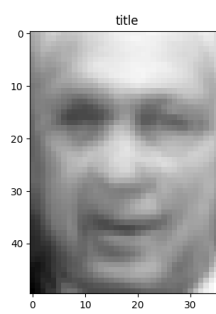
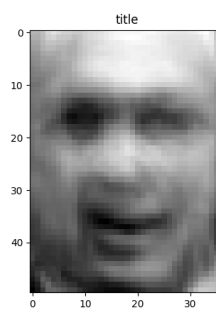
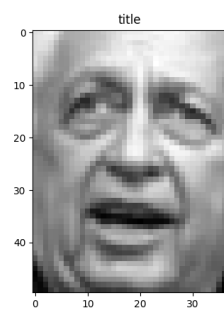
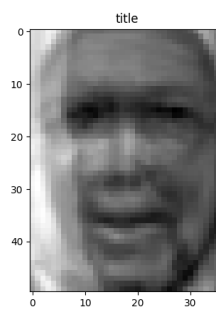
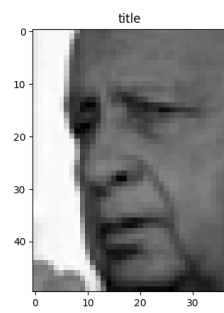
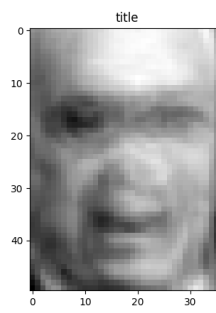
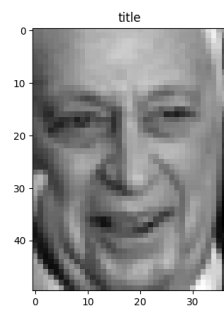


C. I've added the pictures to this file in this format -> Original – modified

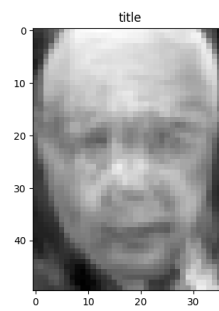
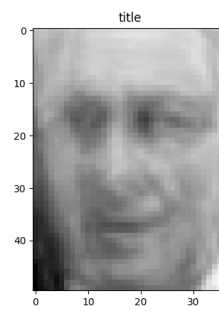
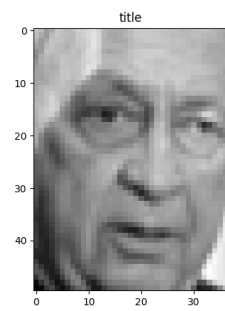
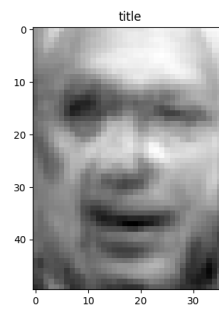
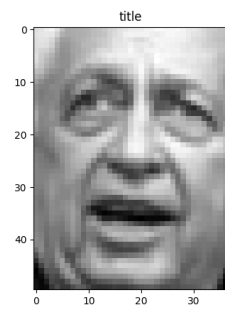
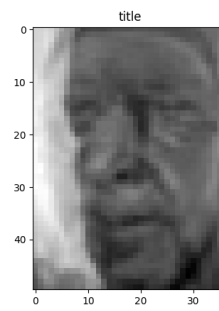
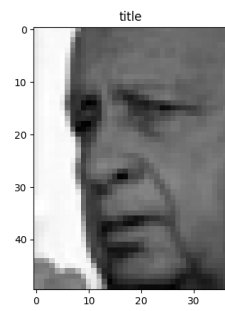
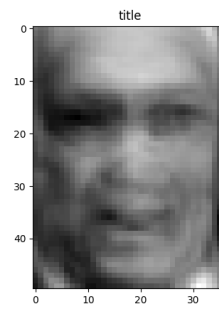
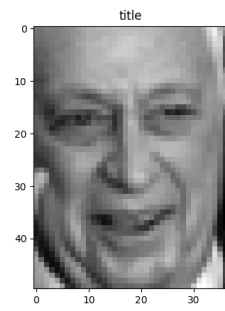
**K=1:**



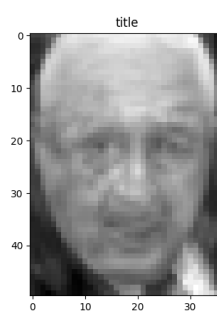
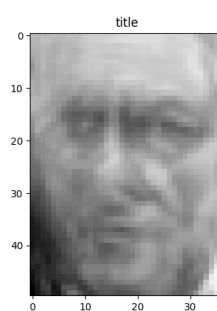
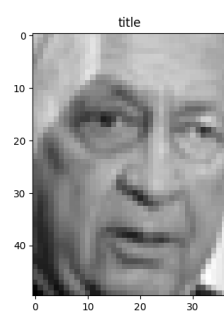
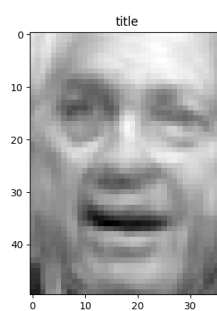
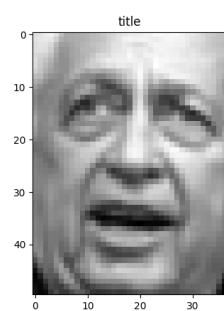
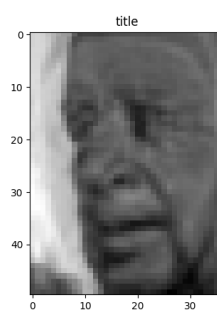
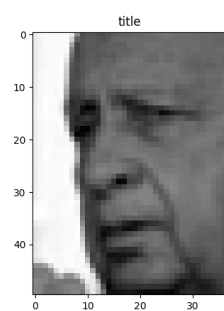
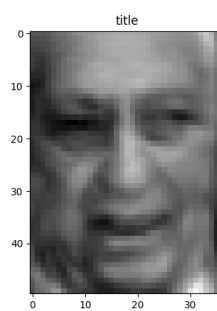
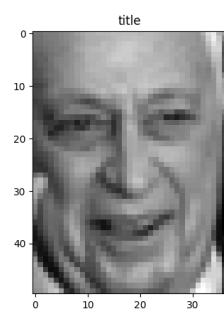
**K =5:**



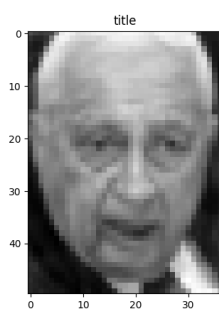
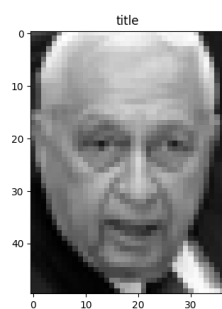
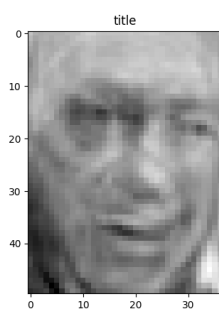
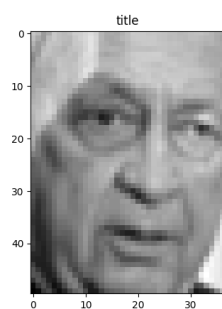
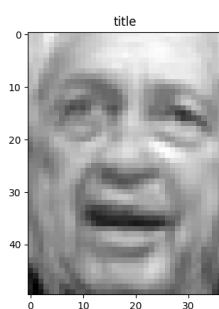
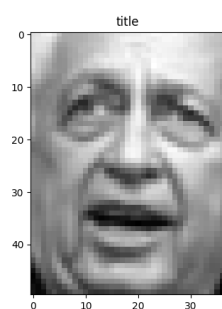
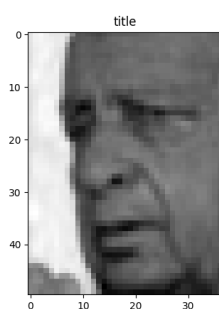
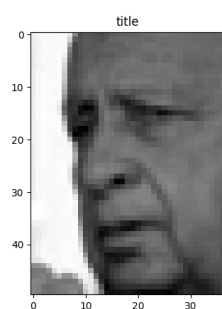
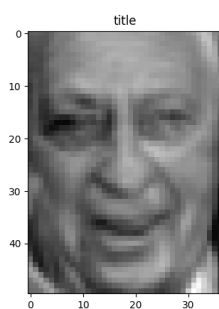
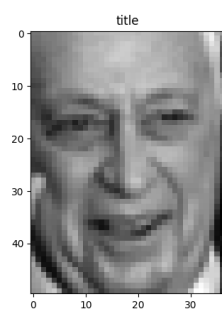
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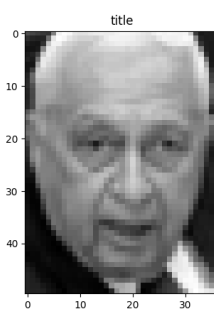
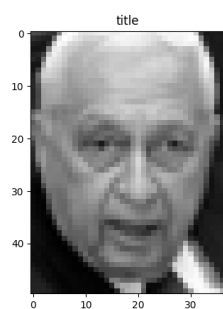
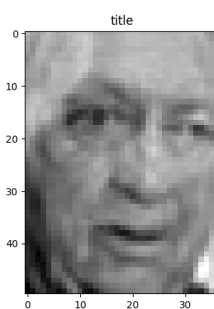
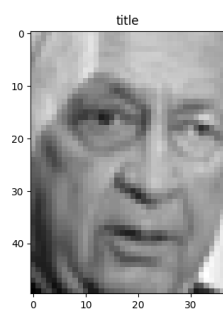
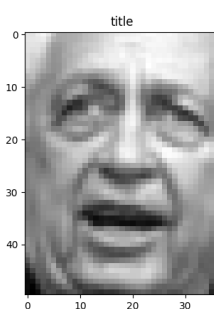
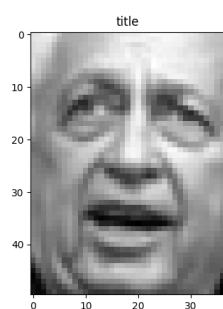
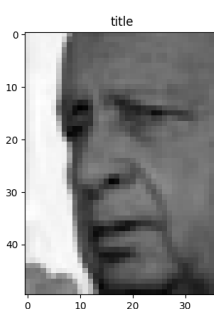
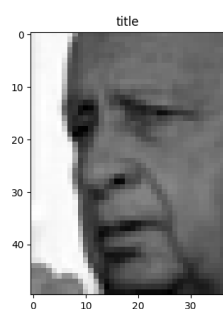
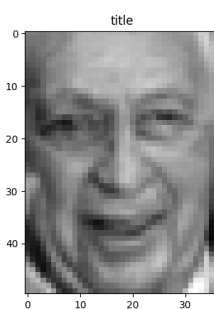
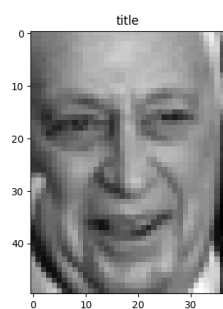
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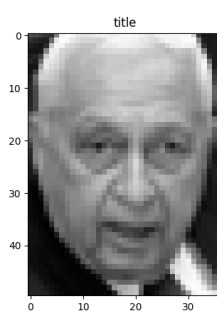
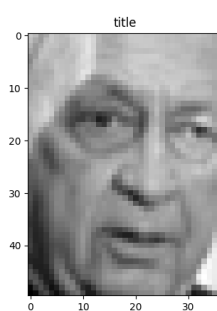
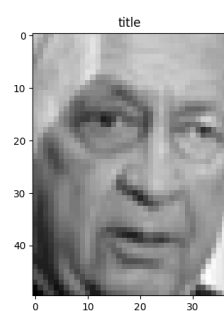
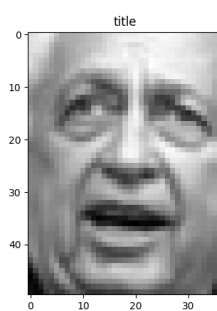
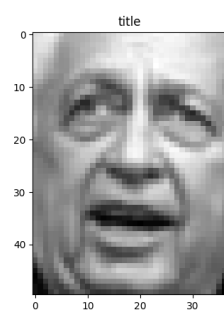
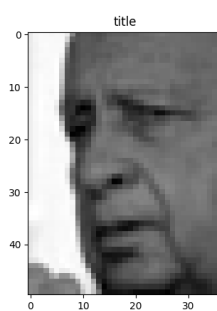
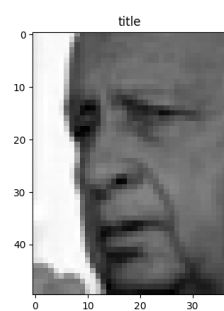
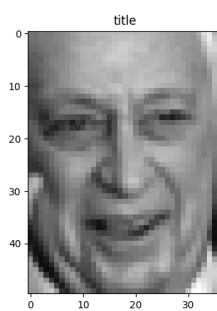
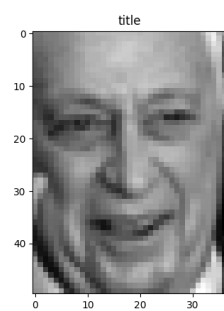
**K =30:**



**K =50:**



**K=100:**





$\ell_2$  distances between the original vector and the reduced vector

