

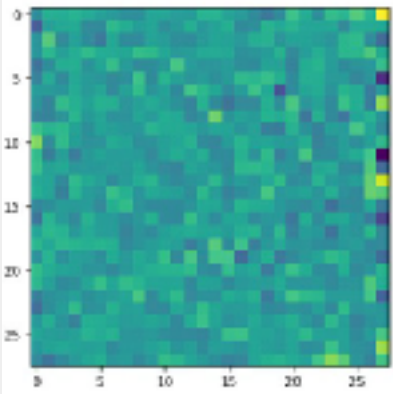
Report

Question-3

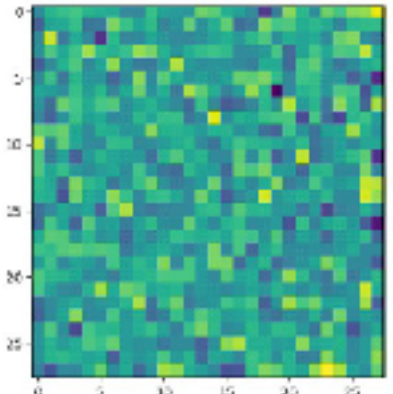
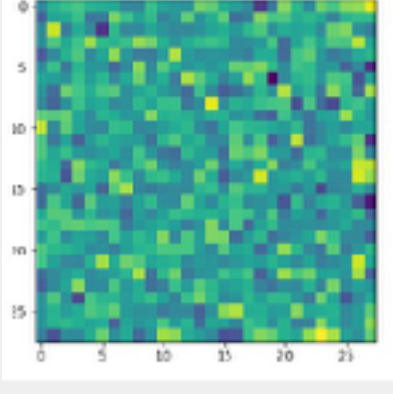
Logistic Regression and Regularization

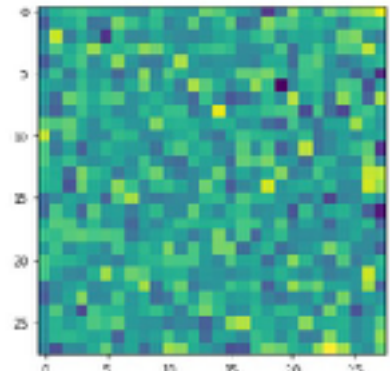
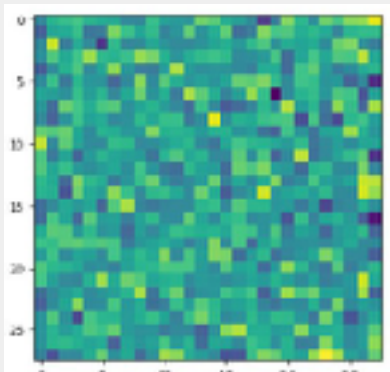
A. L1

C	Accuracy(%)	Activation
1	94.13	
10	93.95	
100	94.31	

C	Accuracy(%)	Activation
	1000	94.31
		

B. L2

C	Accuracy(%)	Activation
	1	93.68
		
	10	93.42
		

C	Accuracy(%)	Activation
100	93.68	
1000	93.59	

Juxtaposing the L1 and L2 loss:

The penalty was set to L2 and the following results were obtained by varying the regularization parameter lambda.

Parameters used:

- Solver: elastic-net
- Loss: log
- Max no. of iterations = 100
- l1_ratio = 0.25

Adjusting the lambda parameter and the L1:L2 ratio, we try to find the best fit in terms of the accuracy.

L1_ratio / C	0.1	0.25	0.50	0.75
1	95.72	94.12	95.01	95.19
10	95.46	94.48	93.50	93.32
100	88.87	49.28	49.28	49.28
1000	50.71	50.71	49.28	50.71