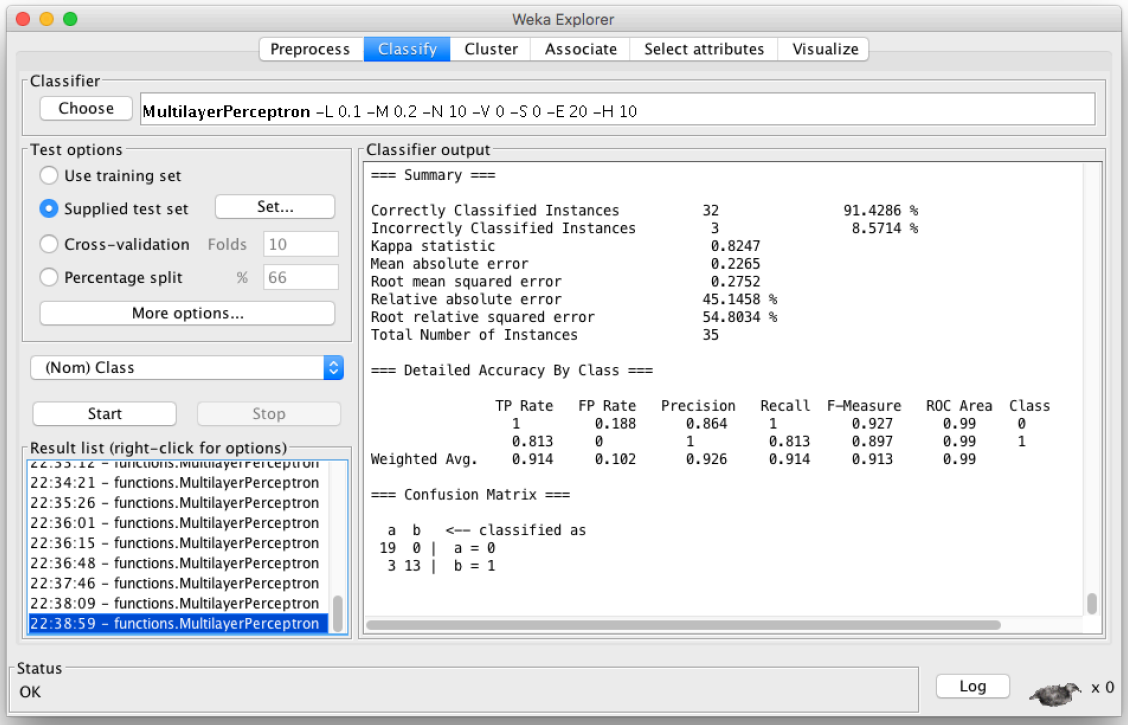
Q1: report the accuracy on the test set. Experiment with different number of hidden layers and units. Report on how the number of hidden layers and units as well as other options such as momentum, number of iterations, and learning rate affect the accuracy.



A	B	C	D	E	F	G
Hidden Layers	units	momentum	iteration	learning rate	accuracy	
1	10	0.2	3	0.3	0.857143	
0	0	0.2	3	0.3	0.914286	
1	5	0.2	3	0.3	88.57%	
1	10	0.5	3	0.3	88.57%	
1	10	0.2	10	0.3	0.914286	
1	10	0.2	3	0.1	71.43%	

From the table above, we can see the how each attribute affect the accurary.

K	Attempt	Compression ratios	Average	variance
2	1	778-88／778	0.8869	0.00065
2	2	53	0.9119	0.00065
2	3	53	0.9119	0.00065
2	4	32	0.9589	0.00065
2	5	44	0.9434	0.00065
5	1	71／778	0.9087	0.00042
5	2	111	0.8573	0.00042
5	3	116	0.8509	0.00042
5	4	108	0.8612	0.00042
5	5	98	0.874	0.00042
10	1	116	0.8509	0.00003
10	2	118	0.8383	0.00003
10	3	115	0.8522	0.00003
10	4	115	0.8522	0.00003
10	5	116	0.8509	0.00003
15	1	116	0.8509	<0.00001
15	2	117	0.8496	<0.00001
15	3	117	0.8496	<0.00001
15	4	117	0.8496	<0.00001
15	5	119	0.847	<0.00001
20	1	117	0.8496	0
20	2	117	0.8496	0
20	3	117	0.8496	0
20	4	117	0.8496	0
20	5	117	0.8496	0

Q2: Is there a tradeoff between image quality and degree of compression? What would be a good value of K for each of the two

images?

Yes. From the table above, we can see there is a tradeoff between image quality and degree of compression. A good K for each of two images should be around 10 where the compression rate is high and variance is small.