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### Project 3 Report

- 1.) Below is a table outlining the parameter settings for the Support Vector Classifier, along with the accuracy score that resulted from these hyper-parameters.

SVM Classifier			
Trial No.	C	Kernel	Accuracy Score
1	1	Linear	0.937
2	10	Linear	0.9263
3	1	Poly (2)	0.975
4	1	Poly (5)	0.952
5	1	Poly (10)	0.808
6	10	Poly (2)	0.981
7	1	RBF	0.98
8	10	RBF	0.984
9	1	Sigmoid	0.7725
10	10	Sigmoid	0.761

- 2.) Below is a table outlining the parameter settings for the k-Nearest Neighbor Classifier, along with the accuracy scores that resulted from these hyper-parameters.

k-Nearest Neighbor				
Trial No.	k Neighbors	Weights	Algorithm	Accuracy Score
1	5	Uniform	Ball Tree	0.972
2	13	Uniform	Ball Tree	0.967
3	21	Uniform	Ball Tree	0.964
4	5	Distance	Ball Tree	0.973
5	13	Distance	Ball Tree	0.969
6	21	Distance	Ball Tree	0.966
7	5	Uniform	Kd Tree	0.972
8	21	Uniform	Kd Tree	0.965
9	5	Distance	Kd Tree	0.973
10	21	Distance	Kd Tree	0.966

- 3.) The best accuracy score for the SVM Classifier was 0.981.  
The best accuracy score for the k-Nearest Neighbors Classifier was 0.973.  
The best error rate for the Memory-based Collaborative Filtering Regressor was 0.897.

Below is a table outlining the error rates for the Collaborative Filtering Regressor.

<b>Recommender System</b>	
Root Mean Square Error	0.897
Mean Absolute Error	0.739