Experiments:

Kernel Types: "Linear" and "Chi-Squared"; Number of Clusters: 50, 100, and 500

C Parameter: 10, 100, 200, 500; They can be changed on the code.

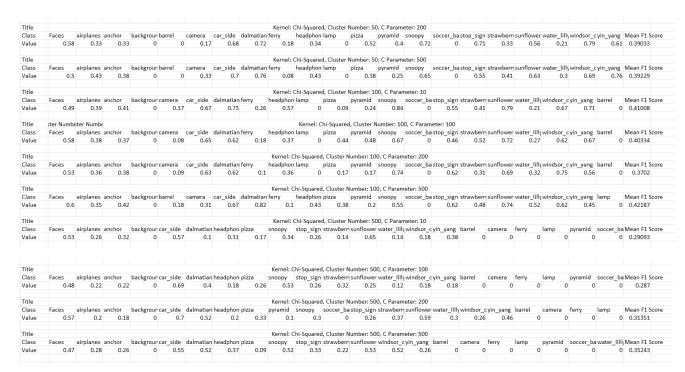
Requirements: Dataset must be downloaded in the same directory with the main.py

Mean F1 Table(The CSV file is in the zip):

	C: 10	C: 100	C: 200	C: 500
Kernel: Linear, Cluster Number: 50	0.29	0.34	0.3	0.31
Kernel: Linear, Cluster Number: 100	0.31	0.35	0.37	0.31
Kernel: Linear, Cluster Number: 500	0.12	0.22	0.25	0.29
Kernel: Chi-Squared, Cluster Number: 50	0.36	0.36	0.39	0.39
Kernel: Chi-Squared, Cluster Number: 100	0.41	0.4	0.37	0.42
Kernel: Chi-Squared, Cluster Number: 500	0.29	0.29	0.31	0.35

Per Class F1 Table(The CSV file is in the zip):

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le									Kernel: l	inear, Cl	uster Num	ber: 100, C	Paramete	r: 200										
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Misclassified Test Images(Best: Chi Squared, C:500, Cluster#: 500):



BONUS:

I added extra four descriptors(SURF, FAST, ORB, BRISK) and three additional clustering approaches (GMM, Spectral Clustering, MiniBatchKMeans) but I did not get significant improvement.

Confusion Matrices are below. I also added jpg files to the zip file because they can not be read on the pdf report.

Multi-Class Confusion Matrices:

