Machine-Learning assignment 2 report

I splatted the training set into 70% training and 30% validation
This way I was able to fine-tune all the Hyperparameters and Biases

KNN:

For the KNN Z-score normalization seems to be best for this algorithm using the given dataset.
Choosing K for this algorithm was decided after an accuracy test was made and found K=5 gives the highest accuracy of 95%

Perceptron:

Learning-rate was chosen by trial and error after we got the highest results for the bias
For the Perceptron, I used sigmoid normalization which gave me the best results.
In the end, we got 93.33% accuracy.

SVM:

After maximizing the accuracy on the validation set, I choose the corresponding hyperparameters who gave the highest accuracy.
For the SVM algorithm, I used Sigmoid normalization for the dataset same as Perceptron
Witch resulted with the highest accuracy
In the end, we got 93.33% accuracy.

PA:

Passive-Aggressive with the given dataset gave the best results using Z-score normalization.
While validating using the validation set we got the highest accuracy of 87%
Mostly sensitive to the learning rate. the bias stayed 0.