

Lab -5 SVM

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From the dataset, 80% was training and the rest was for testing.

```
(100,)  
(100, 2)  
parameters: [[-1.88146645  1.39896647]]  
training accuracy: 1.0  
test accuracy: 1.0
```

Accuracy:

- Training: 100%
- Validation: 100%

The data is linearly separable.

2. Plots

Figure 1: SVM Decision Boundary

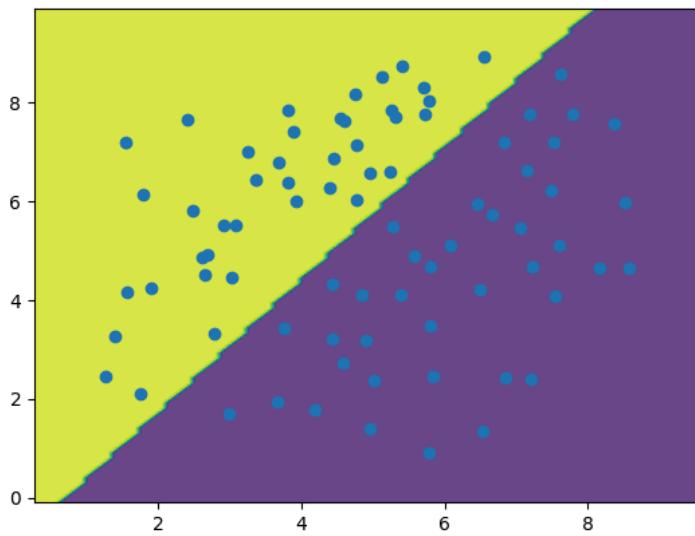
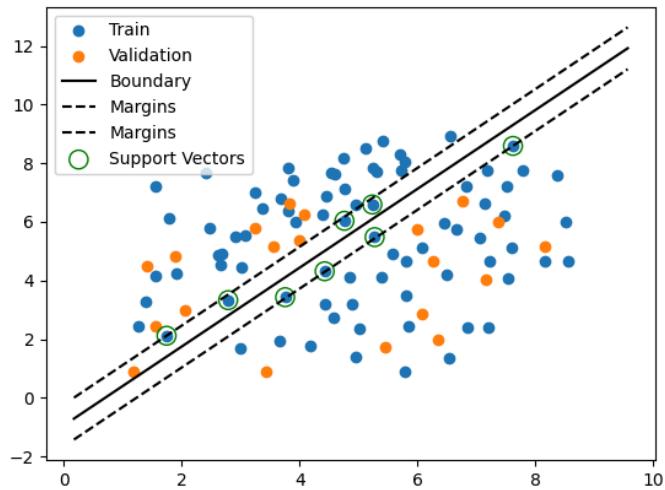


Figure 2: Margins and Support Vectors



This plot shows the maximum-margin hyperplanes (dashed lines), and the support vectors (circled points). The support vectors are the data points that lie on the margin and are critical in defining the boundary's position.

3. Conclusion

The linear SVM algorithm successfully classified the dataset with 100% accuracy. Identifying the support vectors and margins properly.