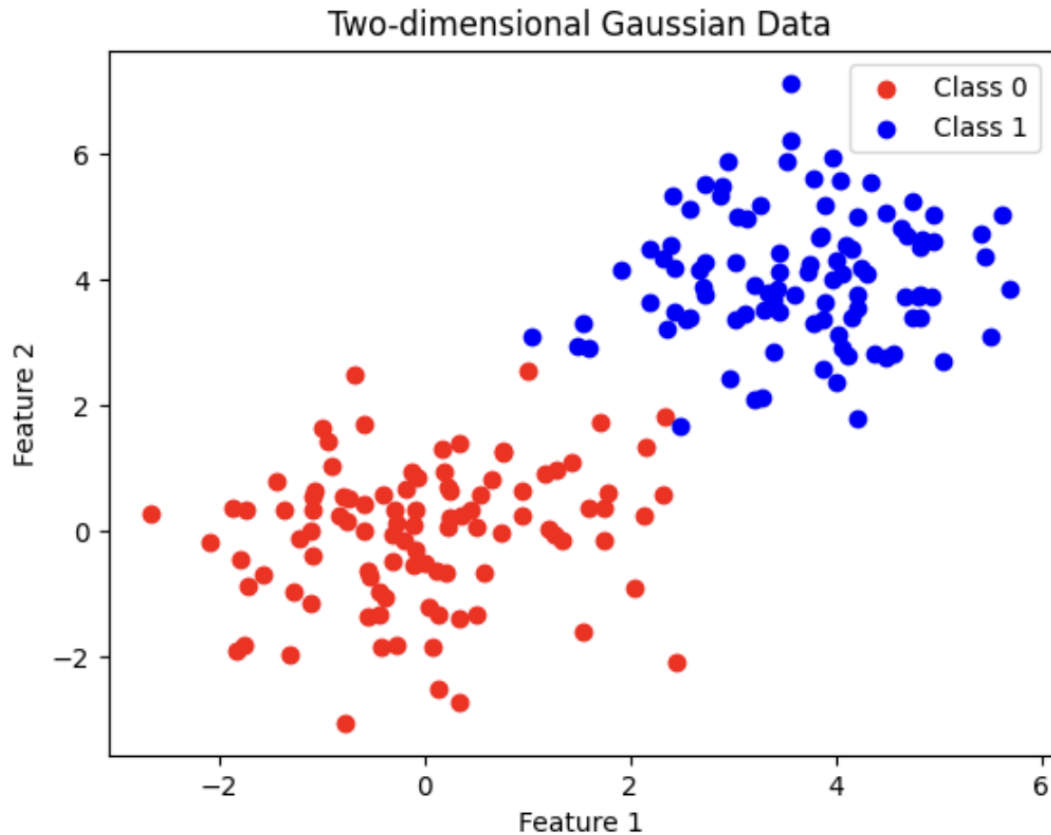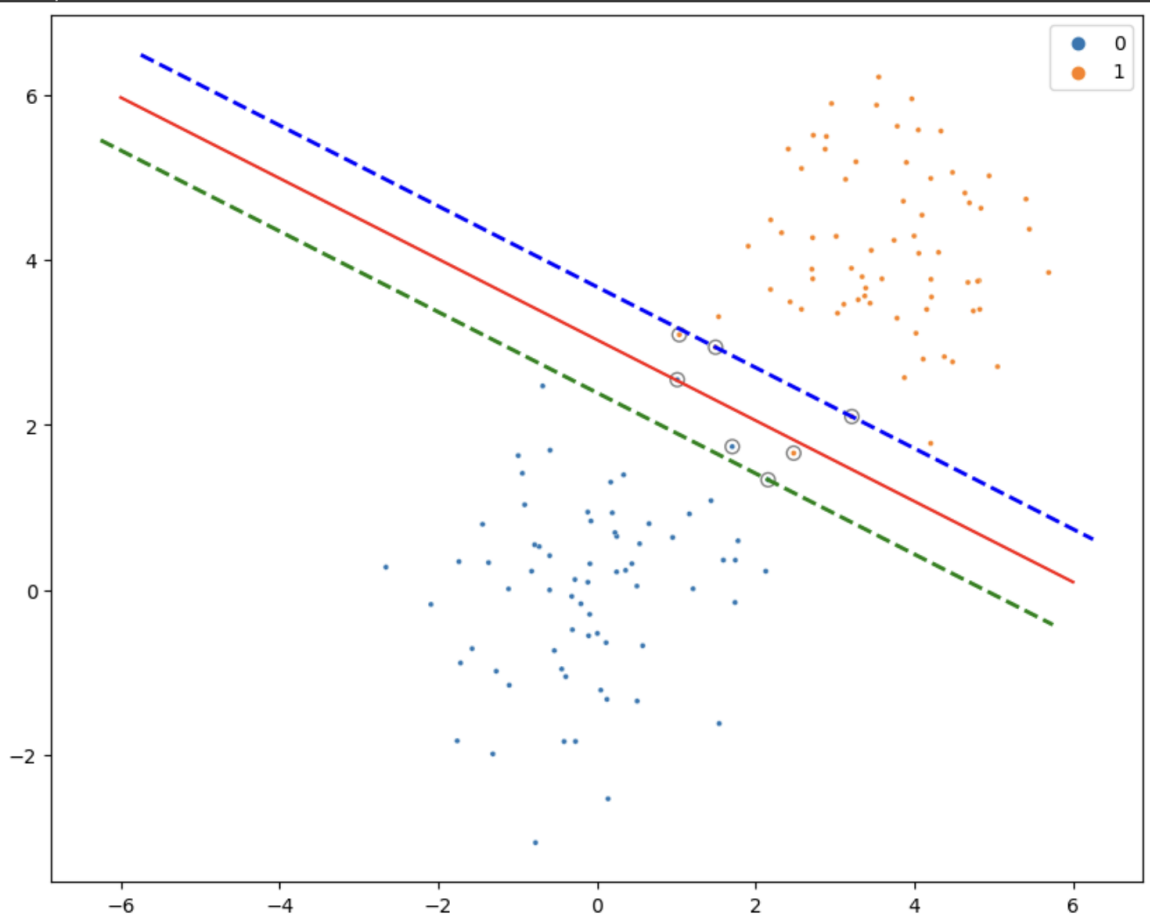# Support Vector Machines Lab Document

1. Use numpy to generate two sets of two-dimensional Gaussian data with different means and unit variance.
2. Utilize matplotlib to create a scatter plot of the generated data points, using different colors to distinguish between the two classes.
   Expected output:

3. Concatenate the two data sets and create corresponding labels for each class.
4. Split the combined dataset into training and test sets using train_test_split from scikit-learn.
5. Create an SVM model with a linear kernel.
6. Fit the SVM model on the training data.
7. Use the SVM model's coefficients to plot the decision boundary on a new matplotlib figure.
8. Highlight the support vectors on the plot.
9. Calculate and plot the margins using the model's coefficients.

Hint: