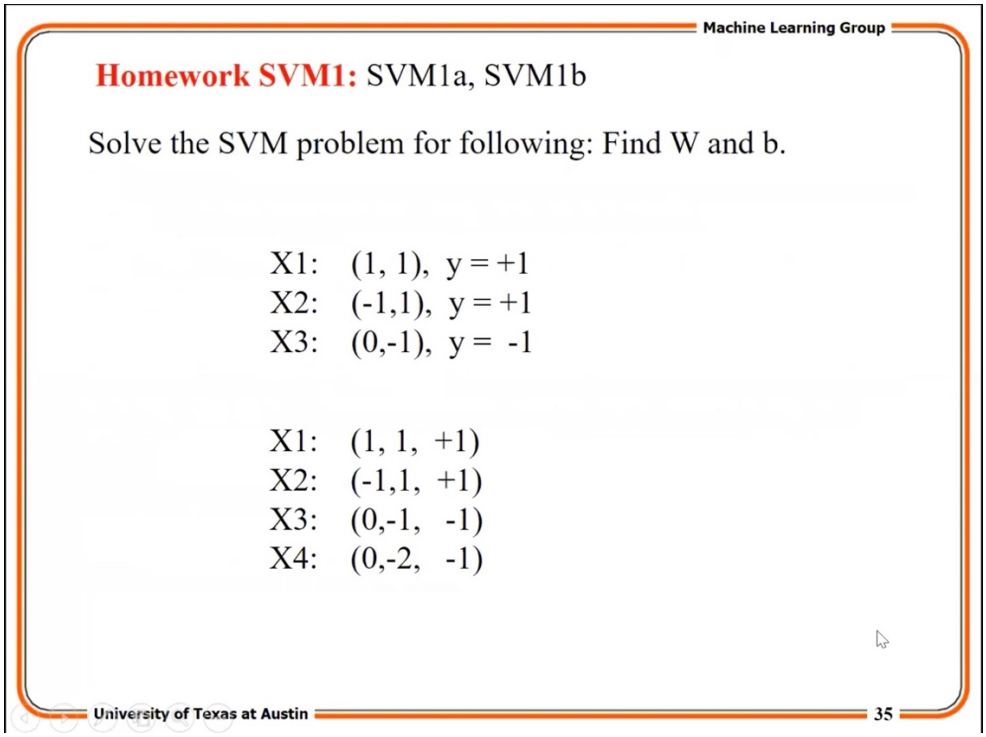
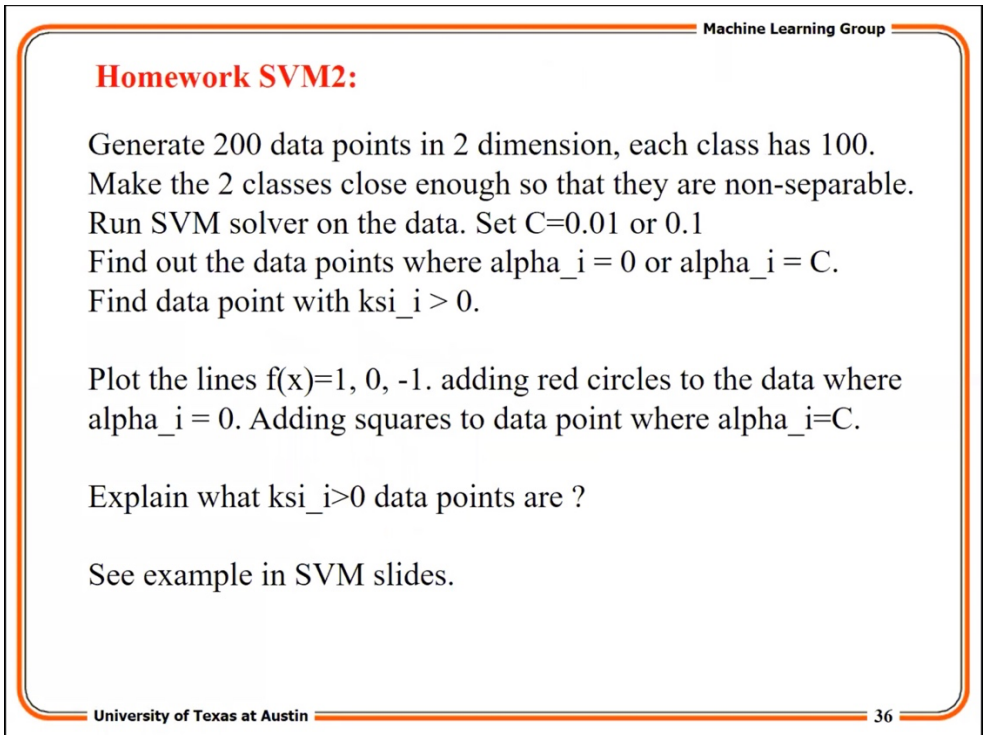
Homework: SVM

1. (individual task)



2. Programming task, sklearn or any other library is allowed. (Group task)



3. (individual task)

Homework SVM3:
Derive the dual problem from the prime problem, using quadratic penalty on ksi's.

Derive the dual Lagrangian for the linear SVM with nonseparable data where the objective function is

$$f(\mathbf{w}) = \frac{\|\mathbf{w}\|^2}{2} + C\left(\sum_{i=1}^{N} \xi_i\right)^2.$$