

COMP9417: Homework Set #2

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Question 1

a

The possible values for both y_i and \tilde{y}_i are binary. Even though they have different values ($y_i \in \{0, 1\}$ and $\tilde{y}_i \in \{-1, 1\}$), the objective of each logistic regression implementation is to divide the dataset into 2 classifications. Because of this, the actual value that each classification has will not affect the parameters that the regression is attempting to optimise ($(\hat{\beta}_0, \hat{\beta})$ and (\hat{w}, \hat{c})). Therefore the solutions for the parameters being minimised by each regression will be the same.

C is a hyper-parameter that adjusts the sensitivity that the model has to its coefficients. Compared with the standard LASSO parameter λ , C is a multiple of the Loss function whereas λ is a multiple of the Penalty.

b