When we train the model with train data there is a possibility of over fitting or underfitting. In over fitting after the model build with training data and the model is being tested with the test data or unseen data there is high variance between the predicted points and observed points as we build our model on the training data by making bias close to zero and this model is no use as it gives false accuracy on the training data and gives wrong predictions on the unseen data. To overcome this problem we use the cross validation method and regularization method

Regularization: in regularization while training the model with training data we put little bias in order to reduce the variance when the model is being tested with the unseen data. There two types of the regularization lassos and rigid regression

Formula for regularization

**∑ (y-f(x))2 + λ|θ2|**

Where (y-f(x))2 is the cost function and θ is the parameter of the features or the input.