REGULARISATION:

● Regularisation is a optimization technique

● To Solve overfitting problems

● Reduce the complexity of the model

● Reduce computation cost

LASSO REGRESSION(L2 regularisation)

As you know equation of linear regression :

y=b0+b1\*x1+b2\*x2+......+bn\*Xn

Let us consider an example: y=1.2+5\*x1+10\*x2+39\*x3+...

Here the most important variable for predicting y is x3 , now a new equation will arise why x3 is most important why not x1,x2?

Because the coefficient value of x3 is the highest hence it will influence the most in predicting the output y.

Looking to above equation we found that the coefficient values are very high and hence there is a need to regularise the equation for getting

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Hence Lasso Regularisation is one such method that can do this ,

Now in lasso regularisation also called L1 Regularisation

Lasso Regularisation consists of two measures :- loss function and penalty

So loss function=y-ypredicted

Penalty is basically the =|W| where w is the vectors of the equation

Alpha is the constant or learning rate

The Only difference between Ridge Regularization and Lasso regularisation is that difference in sq term

And in Lasso regularisation when we increase the penalty the coefficient values for some of the coefficient become ) and hence Lasso regularisation is aldo used in feature Selection Process