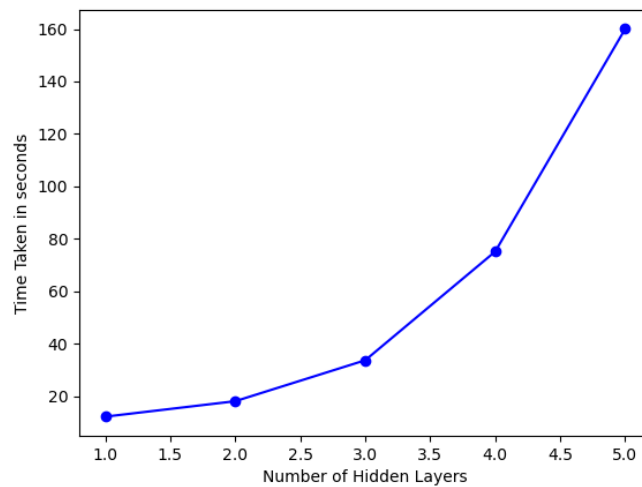# ASSIGNMENT-2.1 REPORT

BY

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ENTRY NUMBER-2019CS10369

1 Layers Selection

I fixed the batch-size to be 800,the seed value to be 1,Gradient-Descent Parameter to be Momentum-Gradient,Gradient Descent Method to be adaptive with rate 0.001 and then varied the number of hidden layers.I tested my code with 1,2,3,4,5 hidden layers.As the number of layers increase,the time taken for execution of code was increasing exponentially.Hence I only executed the code for 5 epochs. The value of error on the test date was lowest when I used exactly three hidden layers.

Hidden Layers	Runtime in seconds	MSE Error
1	12.118	6.489
2	18.017	7.122
3	33.641	5.022
4	75.111	6.405
5	160.079	5.504

Corresponding Plots:

2 Epochs Number

For this I took the previous parameters and performed gradient descent for 500 epochs.As the number of epochs increase,the efficiency was increasing but it was taking a lot of time i.e., 10 epochs are taking a minute.So I stopped the process till 500 epochs.

Number of epochs	MSE Error
0	0.493
100	0.487
200	0.470
300	0.456
400	0.438
500	0.419

Corresponding Plots: