Deep Leaning Homework – 3

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Q3. We had four different parameters which we varied in the following specific range:

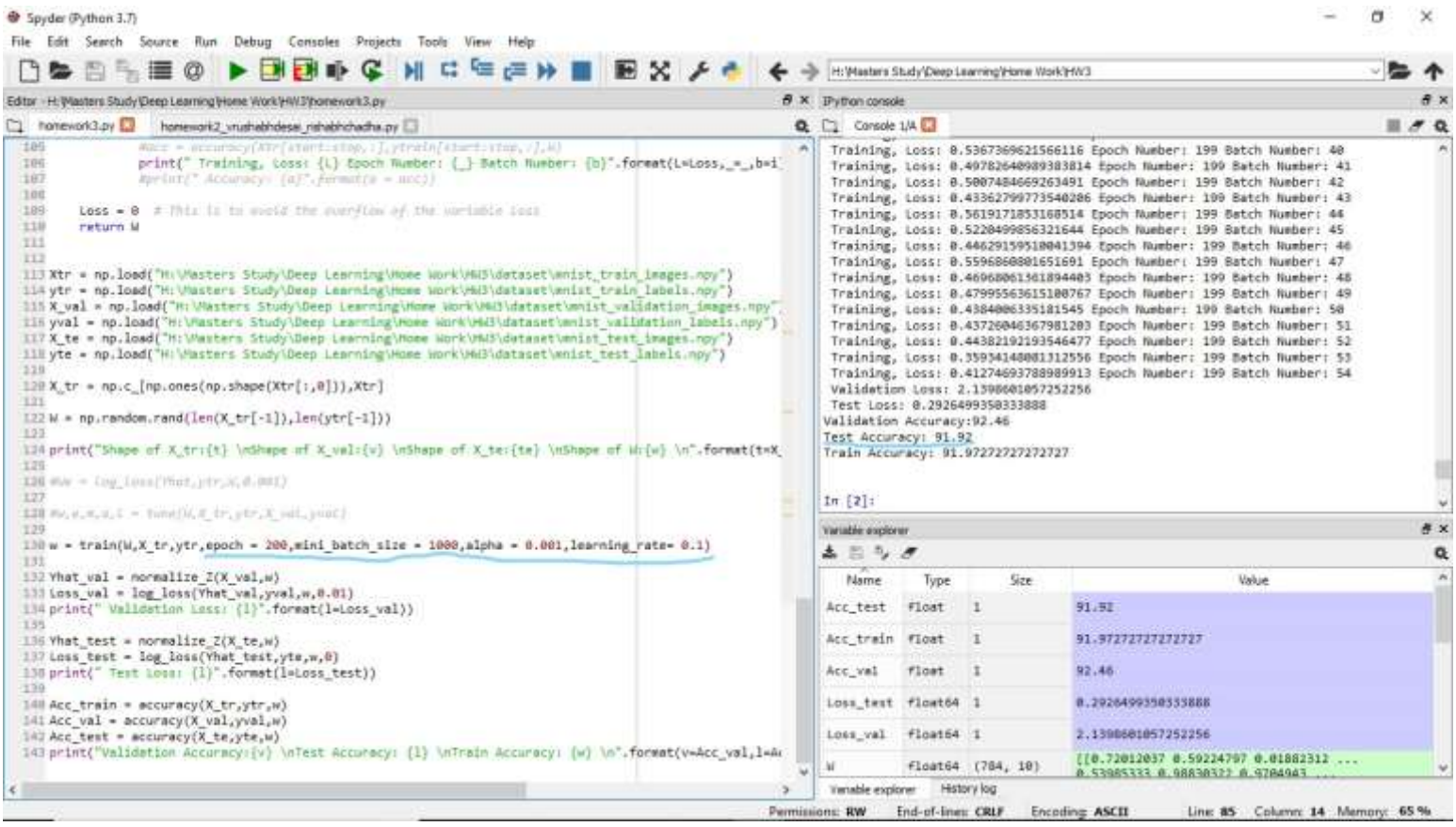
- Number of Epochs: [50,100,150,**200**]
- Batch size: [**1000**,2000,3000,4000]
- Learning rate: [**0.1**,0.01,0.001,0.0001]
- Alpha: [0.1,0.01,**0.001**,0.0001]

The best test accuracy that we achieved with this highlighted hyper parameter:

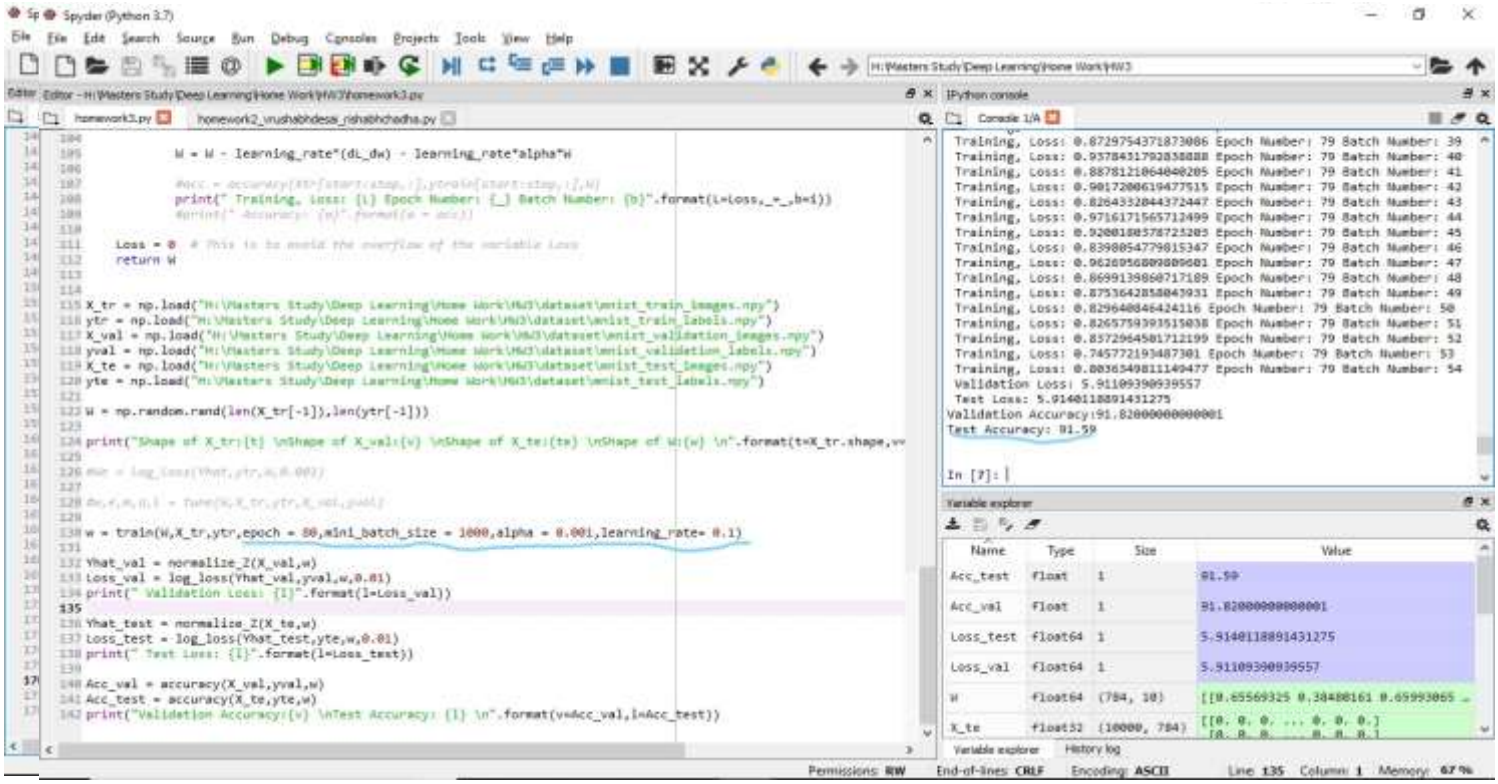
Test Accuracy	**91.92**
Validation Accuracy	**92.46**
Training Accuracy	**91.972**
Test Loss	**0.292649**
Validation Loss	**2.139**
Train Loss	**0.4127**

On further tuning of the hyperparameters we noticed that keeping the Batch size: **1000,** Learning rate: **0.1** and Alpha: **0.001** constant and varying Number of Epochs, the loss on validation set kept reducing and test accuracy increased.

Case 1: Epoch Number: **200** Test Accuracy: **91.92**



Case 2: Epoch Number: **100** Test Accuracy: **91.81**



Case 3: Epoch Number: **80** Test Accuracy: **91.59**