**Practical 1**

**Usage if Optimizers**

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| **Model** | **Test Loss** | **Accuracy** |
| Basic Model | 0.10237183108407931 | 0.9813 |
| SGD Optimizer | 0.0794049291110724 | 0.9855 |
| RMSProp Optimizer | 0.13311695291549 | 0.9828 |
| Adagrad | 0.1156309084653723 | 0.986 |
| Adadelta | 0.11581480404720605 | 0.9859 |
| Adam | 0.1108018363700509 | 0.9819 |
| Adamax | 0.10496049317044749 | 0.9862 |
| Nadam | 0.13979294933665637 | 0.9785 |

**Conclusion:**

Least test loss: Stochastic Gradient Descent (0.0794049291110724).

Best test Accuracy: Adamax (0.9862)

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| --- | --- | --- |
| Dataset | Loss | Accuracy |
| MNIST | 0.10237183108407931 | 0.9813 |
| FASHION\_MNIST | 0.33186029723882676 | 0.8768 |
| CIFAR\_10 | 1.3632704982757569 | 0.5149 |
| CIFAR\_100 | 3.5743300926208494 | 0.172 |
| IRIS | 0.110111 | 1.000000 |