WORKSHEET FOR METRICS AT DIFFERENT BATCH SIZES

**CASE-1) Batch size = 1000**

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| Epoch 1/10 |
| 60/60 [==============================] - 19s 309ms/step - loss: 0.8026 - accuracy: 0.7302 - val\_loss: 0.5410 - val\_accuracy: 0.8028 |
| Epoch 2/10 |
| 60/60 [==============================] - 18s 300ms/step - loss: 0.4865 - accuracy: 0.8246 - val\_loss: 0.4866 - val\_accuracy: 0.8182 |
| Epoch 3/10 |
| 60/60 [==============================] - 19s 312ms/step - loss: 0.4326 - accuracy: 0.8479 - val\_loss: 0.4429 - val\_accuracy: 0.8433 |
| Epoch 4/10 |
| 60/60 [==============================] - 17s 283ms/step - loss: 0.4083 - accuracy: 0.8564 - val\_loss: 0.4151 - val\_accuracy: 0.8544 |
| Epoch 5/10 |
| 60/60 [==============================] - 18s 301ms/step - loss: 0.3835 - accuracy: 0.8651 - val\_loss: 0.3950 - val\_accuracy: 0.8614 |
| Epoch 6/10 |
| 60/60 [==============================] - 17s 288ms/step - loss: 0.3633 - accuracy: 0.8730 - val\_loss: 0.3801 - val\_accuracy: 0.8669 |
| Epoch 7/10 |
| 60/60 [==============================] - 17s 289ms/step - loss: 0.3511 - accuracy: 0.8778 - val\_loss: 0.3659 - val\_accuracy: 0.8712 |
| Epoch 8/10 |
| 60/60 [==============================] - 18s 293ms/step - loss: 0.3413 - accuracy: 0.8807 - val\_loss: 0.3603 - val\_accuracy: 0.8737 |
| Epoch 9/10 |
| 60/60 [==============================] - 17s 285ms/step - loss: 0.3262 - accuracy: 0.8857 - val\_loss: 0.3449 - val\_accuracy: 0.8797 |
| Epoch 10/10 |
| 60/60 [==============================] - 18s 292ms/step - loss: 0.3167 - accuracy: 0.8897 - val\_loss: 0.3492 - val\_accuracy: 0.8760 |

**CASE-2) Batch size = 3000**

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| Epoch 1/10 |
| 20/20 [==============================] - 18s 874ms/step - loss: 1.2907 - accuracy: 0.5967 - val\_loss: 0.7333 - val\_accuracy: 0.7407 |
| Epoch 2/10 |
| 20/20 [==============================] - 17s 830ms/step - loss: 0.6219 - accuracy: 0.7796 - val\_loss: 0.5605 - val\_accuracy: 0.7964 |
| Epoch 3/10 |
| 20/20 [==============================] - 18s 893ms/step - loss: 0.5072 - accuracy: 0.8189 - val\_loss: 0.4975 - val\_accuracy: 0.8203 |
| Epoch 4/10 |
| 20/20 [==============================] - 18s 885ms/step - loss: 0.4593 - accuracy: 0.8371 - val\_loss: 0.4662 - val\_accuracy: 0.8311 |
| Epoch 5/10 |
| 20/20 [==============================] - 17s 869ms/step - loss: 0.4364 - accuracy: 0.8458 - val\_loss: 0.4451 - val\_accuracy: 0.8391 |
| Epoch 6/10 |
| 20/20 [==============================] - 17s 839ms/step - loss: 0.4164 - accuracy: 0.8522 - val\_loss: 0.4347 - val\_accuracy: 0.8416 |
| Epoch 7/10 |
| 20/20 [==============================] - 17s 837ms/step - loss: 0.3996 - accuracy: 0.8591 - val\_loss: 0.4158 - val\_accuracy: 0.8522 |
| Epoch 8/10 |
| 20/20 [==============================] - 17s 839ms/step - loss: 0.3872 - accuracy: 0.8629 - val\_loss: 0.4049 - val\_accuracy: 0.8549 |
| Epoch 9/10 |
| 20/20 [==============================] - 17s 836ms/step - loss: 0.3737 - accuracy: 0.8679 - val\_loss: 0.3951 - val\_accuracy: 0.8584 |
| Epoch 10/10 |
| 20/20 [==============================] - 17s 835ms/step - loss: 0.3667 - accuracy: 0.8703 - val\_loss: 0.3847 - val\_accuracy: 0.8644 |

**CASE-3) Batch size = 6000**

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| Epoch 1/10 |
| 10/10 [==============================] - 19s 2s/step - loss: 1.8370 - accuracy: 0.4509 - val\_loss: 1.1013 - val\_accuracy: 0.7117 |
| Epoch 2/10 |
| 10/10 [==============================] - 18s 2s/step - loss: 0.8391 - accuracy: 0.7294 - val\_loss: 0.7223 - val\_accuracy: 0.7445 |
| Epoch 3/10 |
| 10/10 [==============================] - 18s 2s/step - loss: 0.6497 - accuracy: 0.7670 - val\_loss: 0.6016 - val\_accuracy: 0.7773 |
| Epoch 4/10 |
| 10/10 [==============================] - 18s 2s/step - loss: 0.5500 - accuracy: 0.7992 - val\_loss: 0.5336 - val\_accuracy: 0.8133 |
| Epoch 5/10 |
| 10/10 [==============================] - 18s 2s/step - loss: 0.4992 - accuracy: 0.8242 - val\_loss: 0.4987 - val\_accuracy: 0.8187 |
| Epoch 6/10 |
| 10/10 [==============================] - 17s 2s/step - loss: 0.4684 - accuracy: 0.8351 - val\_loss: 0.4751 - val\_accuracy: 0.8292 |
| Epoch 7/10 |
| 10/10 [==============================] - 18s 2s/step - loss: 0.4476 - accuracy: 0.8431 - val\_loss: 0.4578 - val\_accuracy: 0.8377 |
| Epoch 8/10 |
| 10/10 [==============================] - 17s 2s/step - loss: 0.4314 - accuracy: 0.8496 - val\_loss: 0.4418 - val\_accuracy: 0.8430 |
| Epoch 9/10 |
| 10/10 [==============================] - 17s 2s/step - loss: 0.4206 - accuracy: 0.8521 - val\_loss: 0.4325 - val\_accuracy: 0.8458 |
| Epoch 10/10 |
| 10/10 [==============================] - 18s 2s/step - loss: 0.4088 - accuracy: 0.8574 - val\_loss: 0.4246 - val\_accuracy: 0.8481 |

**CASE-4) Batch size = 10,000**

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| Epoch 1/10 |
| 6/6 [==============================] - 18s 3s/step - loss: 1.9364 - accuracy: 0.4088 - val\_loss: 1.3866 - val\_accuracy: 0.6759 |
| Epoch 2/10 |
| 6/6 [==============================] - 17s 3s/step - loss: 1.0851 - accuracy: 0.7062 - val\_loss: 0.8259 - val\_accuracy: 0.7206 |
| Epoch 3/10 |
| 6/6 [==============================] - 17s 3s/step - loss: 0.7469 - accuracy: 0.7398 - val\_loss: 0.7078 - val\_accuracy: 0.7465 |
| Epoch 4/10 |
| 6/6 [==============================] - 17s 3s/step - loss: 0.6686 - accuracy: 0.7606 - val\_loss: 0.6526 - val\_accuracy: 0.7665 |
| Epoch 5/10 |
| 6/6 [==============================] - 17s 3s/step - loss: 0.6079 - accuracy: 0.7797 - val\_loss: 0.5936 - val\_accuracy: 0.7806 |
| Epoch 6/10 |
| 6/6 [==============================] - 17s 3s/step - loss: 0.5545 - accuracy: 0.7988 - val\_loss: 0.5545 - val\_accuracy: 0.7978 |
| Epoch 7/10 |
| 6/6 [==============================] - 17s 3s/step - loss: 0.5271 - accuracy: 0.8122 - val\_loss: 0.5323 - val\_accuracy: 0.8073 |
| Epoch 8/10 |
| 6/6 [==============================] - 17s 3s/step - loss: 0.5057 - accuracy: 0.8199 - val\_loss: 0.5132 - val\_accuracy: 0.8125 |
| Epoch 9/10 |
| 6/6 [==============================] - 17s 3s/step - loss: 0.4879 - accuracy: 0.8271 - val\_loss: 0.4995 - val\_accuracy: 0.8182 |
| Epoch 10/10 |
| 6/6 [==============================] - 17s 3s/step - loss: 0.4747 - accuracy: 0.8322 - val\_loss: 0.4873 - val\_accuracy: 0.8229 |