LAB Logbook

Lab 4

Week 4

```
# Your code to build MLP neural network model.
model = keras.Sequential([
   keras.layers.Dense(187,activation='relu',input_shape=(X_train.shape[1],)),
    keras.layers.Dense(128, activation='relu'),    # hidden layer
    keras.layers.Dense(64, activation='relu'),     # hidden layer
    keras.layers.Dense(25, activation='relu'),     # hidden layer
    keras.layers.Dense(50, activation='relu'),     # hidden layer
    keras.layers.Dense(93, activation='relu'),     # hidden layer
    keras.layers.Dense(42, activation='relu'),     # hidden layer
    keras.layers.Dense(1)  # output layer (digits 0-9)
])
```

```
print(model.summary())
```

```
Model: "sequential_1"
```

Layer (type)	Output Shape	Param #
dense_7 (Dense)	(None, 187)	3,740
dense_8 (Dense)	(None, 128)	24,064
dense_9 (Dense)	(None, 64)	8,256
dense_10 (Dense)	(None, 25)	1,625
dense_11 (Dense)	(None, 50)	1,300
dense_12 (Dense)	(None, 93)	4,743
dense_13 (Dense)	(None, 42)	3,948
dense_14 (Dense)	(None, 1)	43

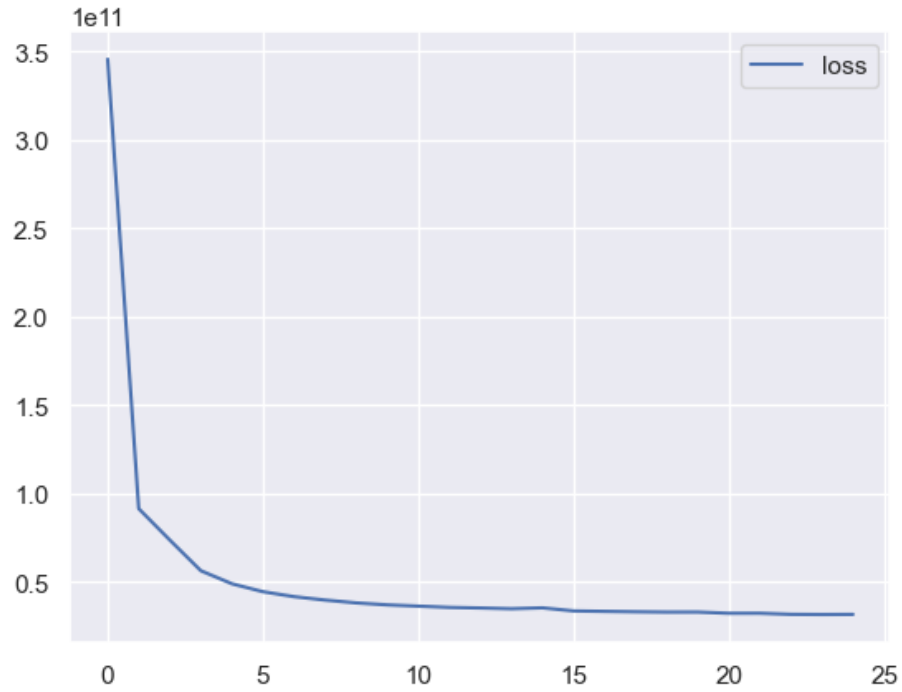
```
Total params: 47,719 (186.40 KB)

Trainable params: 47,719 (186.40 KB)

Non-trainable params: 0 (0.00 B)
```

```
losses = pd.DataFrame(model.history.history)
losses.plot()
```

```
<Axes: >
```




```
history_dict = history.history
Loss = losses['loss']
plt.figure(num=1, figsize=(15,7))
plt.plot(Loss, 'bo', label='Loss')
plt.xlabel('Epochs')
plt.ylabel('Loss')
plt.legend()
plt.show()
```