```
IDLE Shell 3.13.5
File  Edit  Shell  Debug  Options  Window  Help
Epoch 256/300, Train Loss: 0.6882, Val Loss: 0.6680
Epoch 257/300, Train Loss: 0.6861, Val Loss: 0.6673
Epoch 258/300, Train Loss: 0.6818, Val Loss: 0.6673
Epoch 259/300, Train Loss: 0.6833, Val Loss: 0.6664
Epoch 260/300, Train Loss: 0.6838, Val Loss: 0.6660
Epoch 261/300, Train Loss: 0.6864, Val Loss: 0.6668
Epoch 262/300, Train Loss: 0.6793, Val Loss: 0.6648
Epoch 263/300, Train Loss: 0.6841, Val Loss: 0.6652
Epoch 264/300, Train Loss: 0.6832, Val Loss: 0.6638
Epoch 265/300, Train Loss: 0.6824, Val Loss: 0.6635
Epoch 266/300, Train Loss: 0.6807, Val Loss: 0.6634
Epoch 267/300, Train Loss: 0.6844, Val Loss: 0.6650
Epoch 268/300, Train Loss: 0.6835, Val Loss: 0.6656
Epoch 269/300, Train Loss: 0.6791, Val Loss: 0.6625
Epoch 270/300, Train Loss: 0.6836, Val Loss: 0.6626
Epoch 271/300, Train Loss: 0.6813, Val Loss: 0.6614
Epoch 272/300, Train Loss: 0.6788, Val Loss: 0.6624
Epoch 273/300, Train Loss: 0.6802, Val Loss: 0.6612
Epoch 274/300, Train Loss: 0.6819, Val Loss: 0.6600
Epoch 275/300, Train Loss: 0.6800, Val Loss: 0.6609
Epoch 276/300, Train Loss: 0.6774, Val Loss: 0.6608
Epoch 277/300, Train Loss: 0.6787, Val Loss: 0.6606
Epoch 278/300, Train Loss: 0.6779, Val Loss: 0.6598
Epoch 279/300, Train Loss: 0.6777, Val Loss: 0.6598
Epoch 280/300, Train Loss: 0.6823, Val Loss: 0.6615
Epoch 281/300, Train Loss: 0.6774, Val Loss: 0.6626
Epoch 282/300, Train Loss: 0.6797, Val Loss: 0.6602
Epoch 283/300, Train Loss: 0.6813, Val Loss: 0.6605
Epoch 284/300, Train Loss: 0.6787, Val Loss: 0.6607
Epoch 285/300, Train Loss: 0.6788, Val Loss: 0.6600
Epoch 286/300, Train Loss: 0.6798, Val Loss: 0.6609
Epoch 287/300, Train Loss: 0.6779, Val Loss: 0.6622
Epoch 288/300, Train Loss: 0.6789, Val Loss: 0.6610
Epoch 289/300, Train Loss: 0.6748, Val Loss: 0.6606
Epoch 290/300, Train Loss: 0.6769, Val Loss: 0.6609
Epoch 291/300, Train Loss: 0.6754, Val Loss: 0.6586
Epoch 292/300, Train Loss: 0.6775, Val Loss: 0.6594
Epoch 293/300, Train Loss: 0.6775, Val Loss: 0.6594
Epoch 294/300, Train Loss: 0.6742, Val Loss: 0.6575
Epoch 295/300, Train Loss: 0.6781, Val Loss: 0.6589
Epoch 296/300, Train Loss: 0.6751, Val Loss: 0.6569
Epoch 297/300, Train Loss: 0.6783, Val Loss: 0.6579
Epoch 298/300, Train Loss: 0.6758, Val Loss: 0.6567
Epoch 299/300, Train Loss: 0.6782, Val Loss: 0.6564
Epoch 300/300, Train Loss: 0.6740, Val Loss: 0.6561
Final Test Accuracy: 0.7812
```
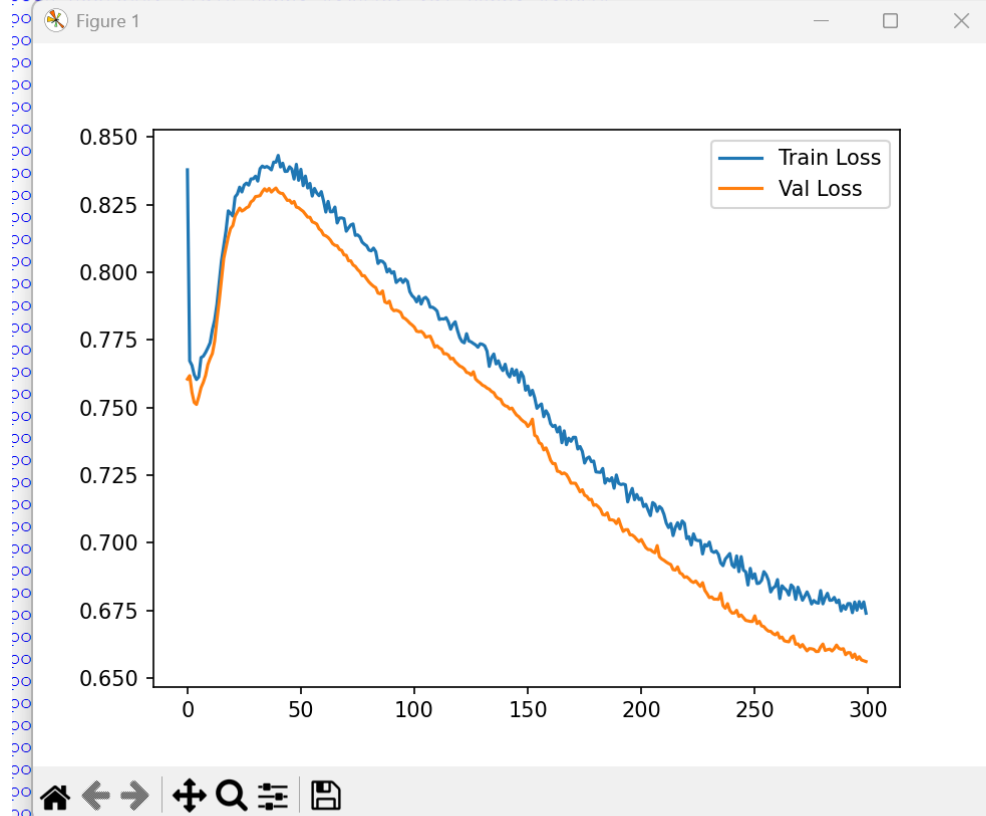
Final test Accuracy: 78.12%

Used: 2hidden layers to optimise the accuracy of the model. (256 neurons in first hidden layer and 128 in second hidden Layer).

Graph: (output)

Figure 1