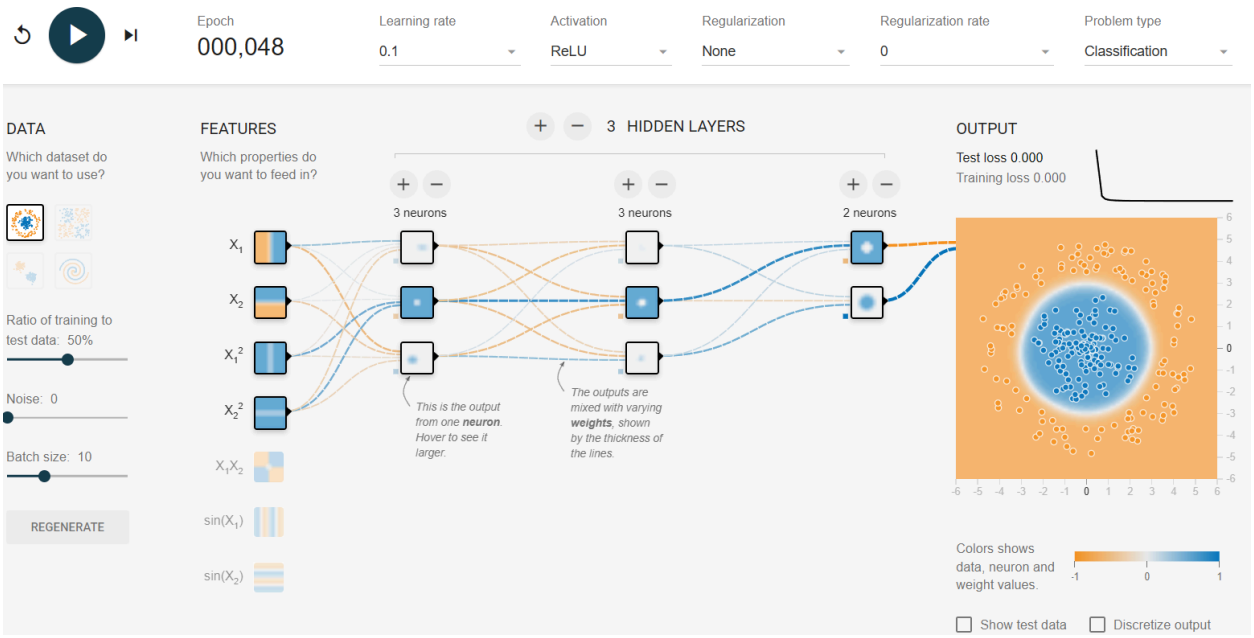
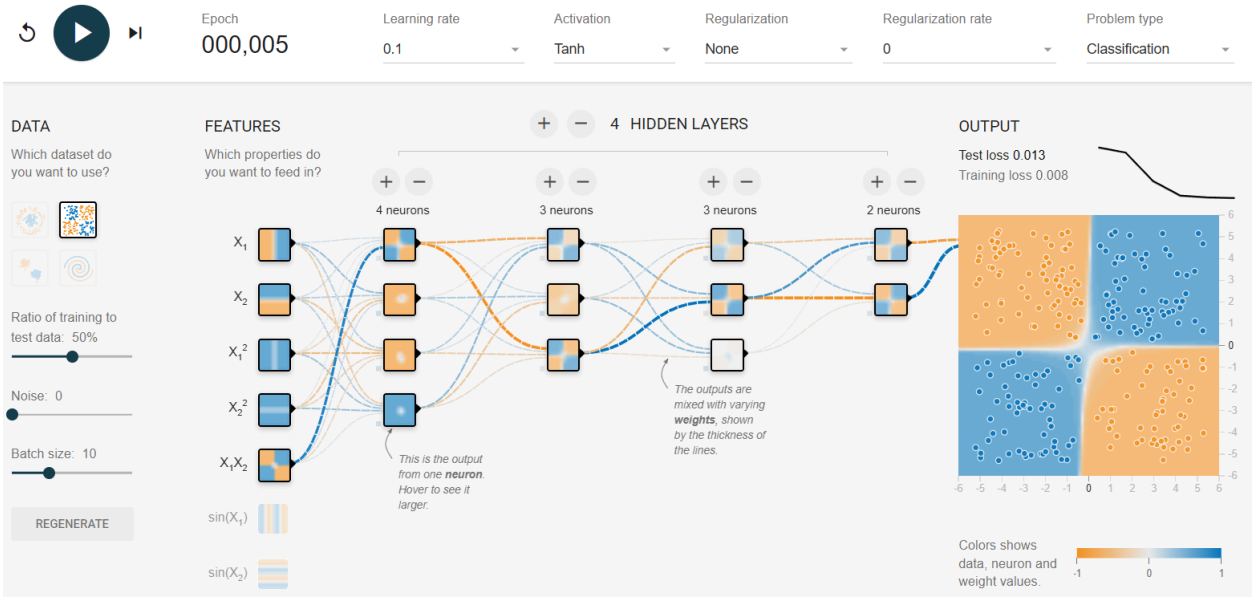
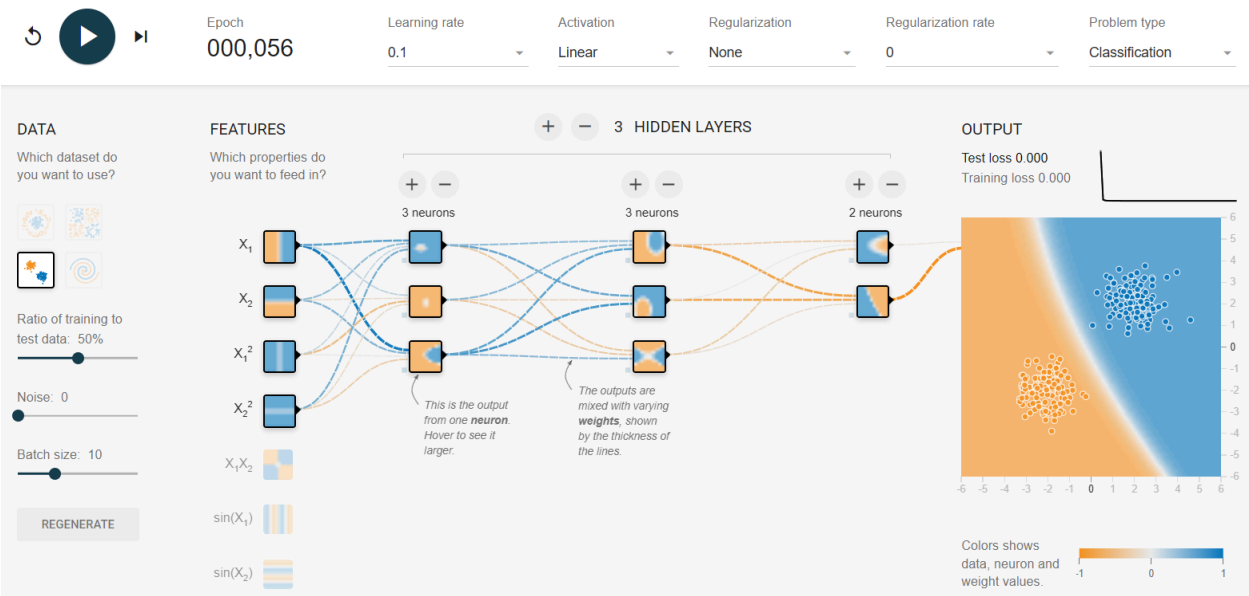
1.



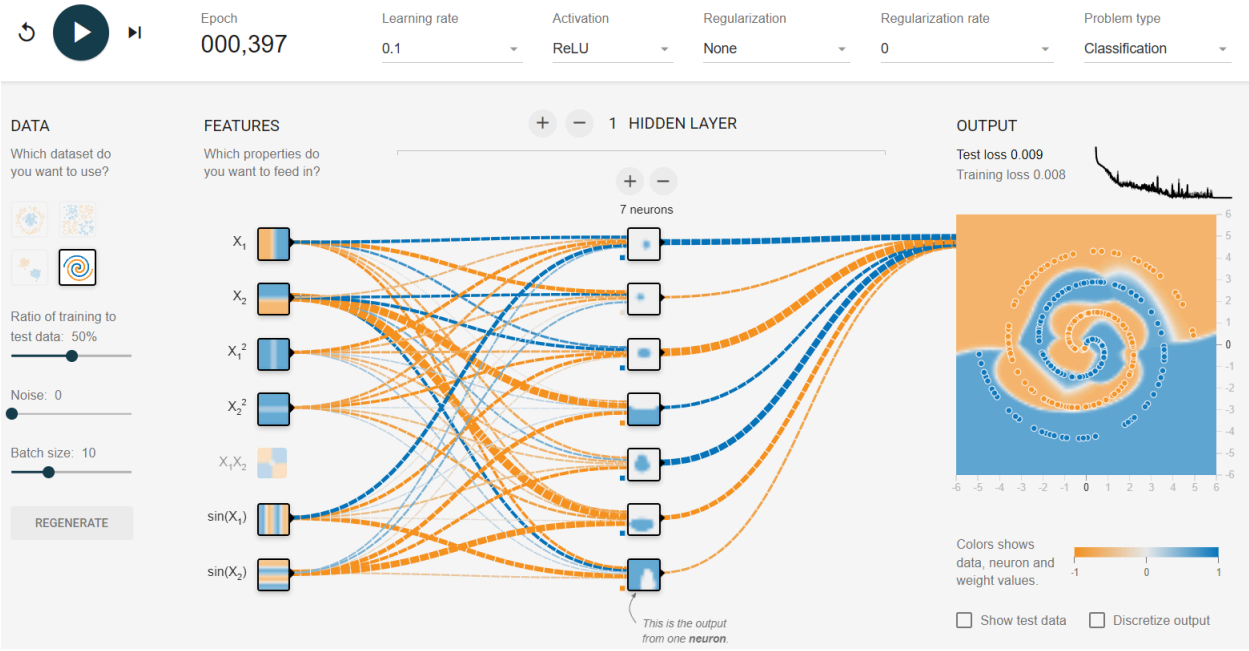
For Data Set 1, we used the ReLU activation function for a non-linear pattern and found test and train loss 0. We ran the model for 48 epochs and found the class boundary. Here 4 features are taken as input and 3 hidden layers have been used. Ratio for training and test data is 50%



For Data Set 2, we used the tanh activation function for a non-linear pattern and found test and training loss of 0.013 and 0.008 respectively. We ran the model only for 5 epochs and found the class boundary. Here 5 features are taken as input and a total of 4 hidden layers have been used. Ratio for training and test data is 50%



For Data Set 3, we used the linear activation function for linear pattern and found a test and training loss of 0. We ran the model only for 56 epochs and found the class boundary. Here 4 features are taken as input and a total of 3 hidden layers have been used. The ratio for training and test data is 50%.



For Dataset 4, we have an input layer with 6 features, a single hidden layer with seven neurons, and an output layer for classification. We used ReLU activation for non-linear patterns and found test and training loss of 0.009 and 0.008 respectively. We ran the model for 397 epochs and found the class boundary. Here 6 features are taken as input and a total of 1 hidden layer has been used. The ratio for training and test data is 50%.