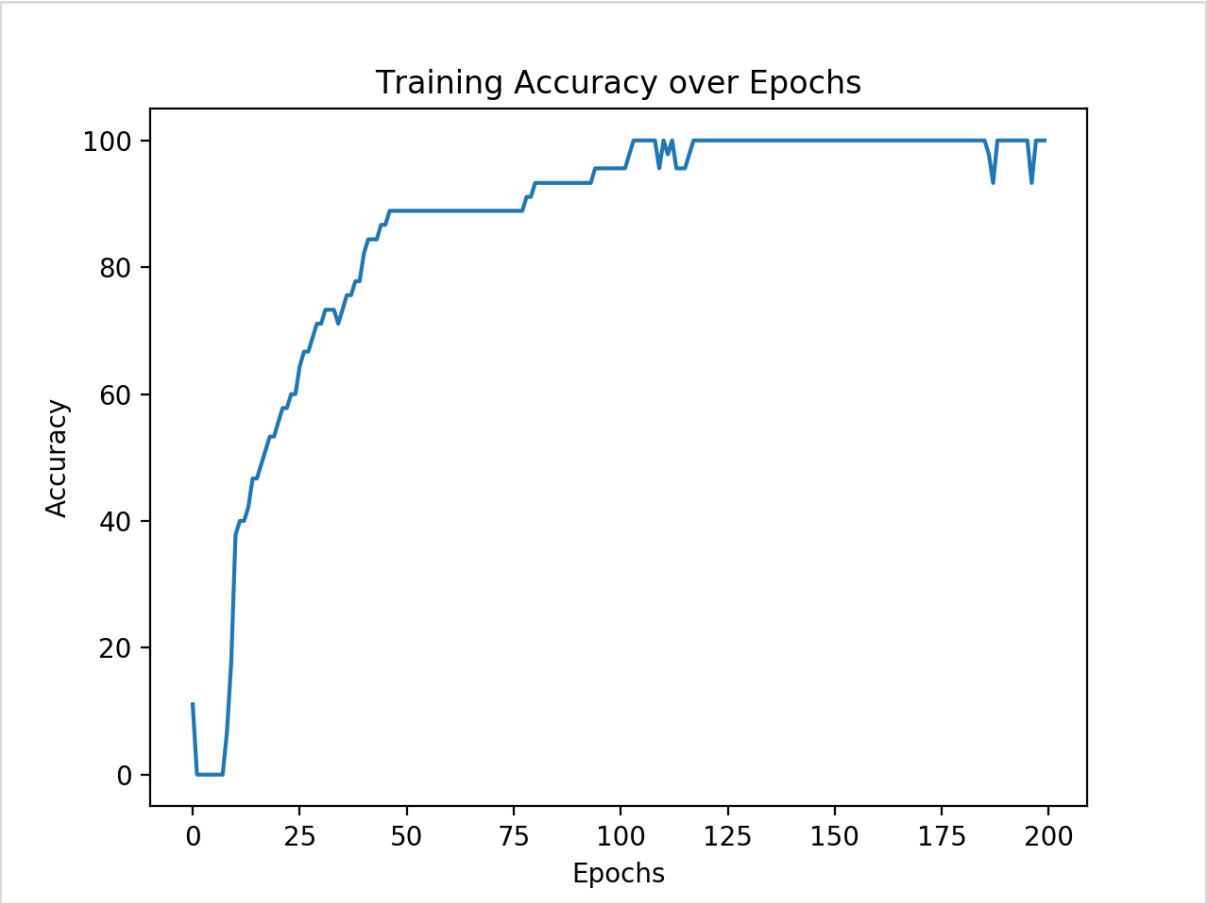
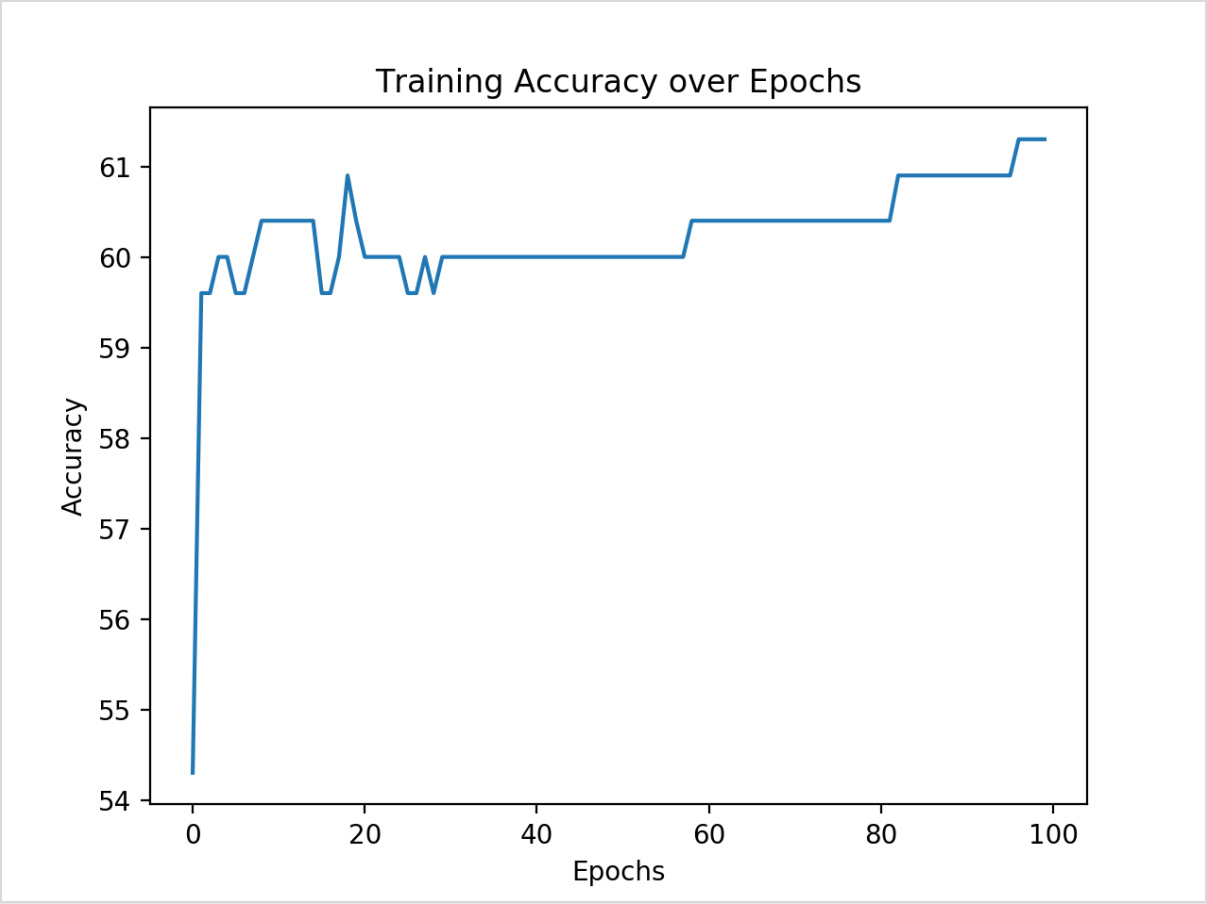
Neural Nets Conclusions

1. **Please submit a link to your GitHub repository for your class**
   https://github.com/exaudeus/Machine-Learning-and-Visualization
2. **Describe your overall approach to implementing the algorithm in code. How are your classes/data structures organized? How do you keep track of the necessary pieces for back-propagation.**
   Basically, we have a NeuralNet class that has a list of Layers (also a class), each layer has a list of Nodes (also a class). Each node contains the weights to its left, the activation value, and the error.
3. **Describe the part of the assignment that gave you the most trouble, and how you overcame it.**
   The part that gave us the most trouble was including some additional features such as other activation functions and other datasets. We just kept working at it until we made it work.
4. **Produce at least one graph to show the training progress for the Iris dataset.**



5. **Compare your results on the Iris dataset to those of an existing implementation.**
   Existing implementation: 65%
   Our implementation: 94.3%
6. **Produce at least one graph to show the training progress for the Diabetes dataset.**



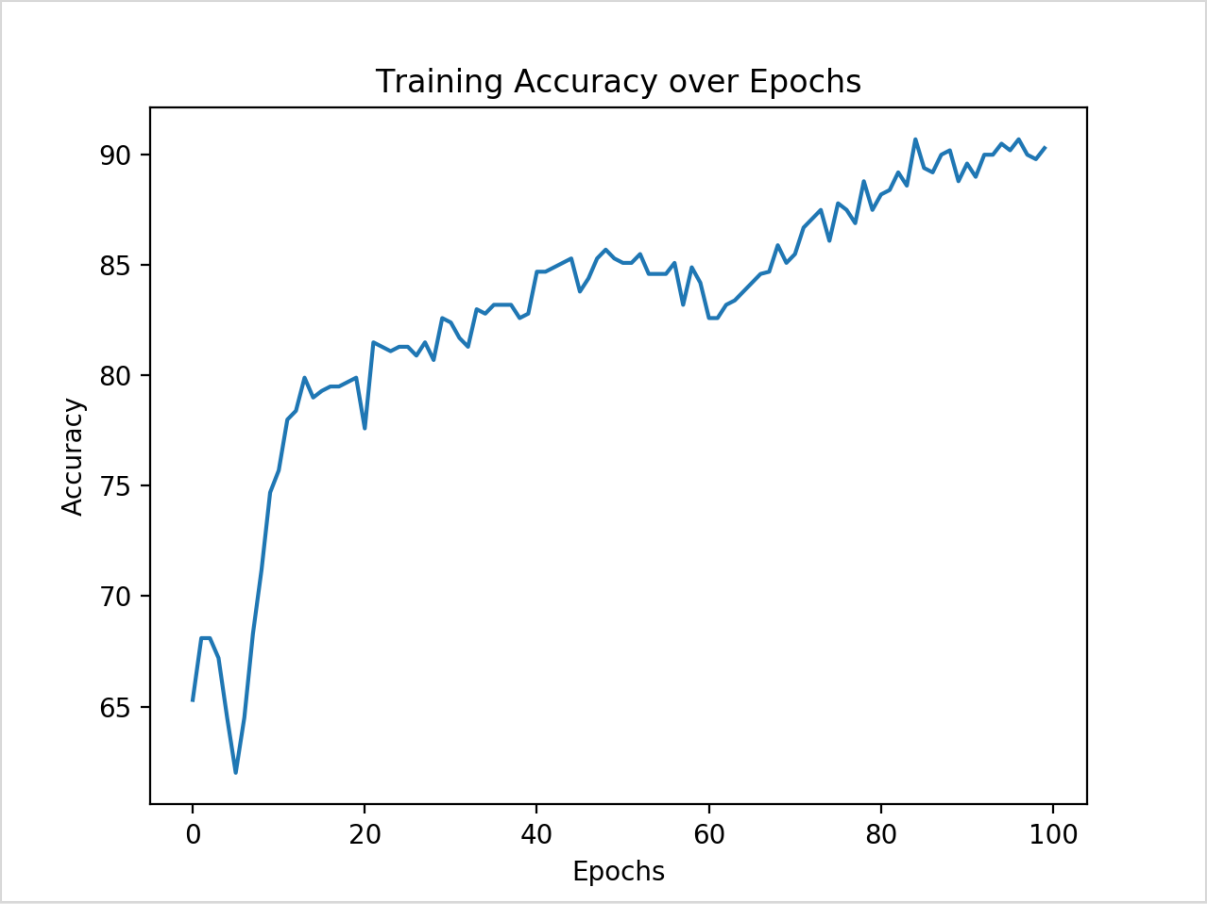
7. **Compare your results on the Diabetes dataset to those of an existing implementation.**

   Existing implementation: 63%

   Our implementation: 66%

8. **Describe any efforts you made to go above and beyond.**

- We added many parameters for customization
- We added two more activation function: tanh and softsign
- We also used the car dataset



Car existing implementation: 69%

Car our implementation: 86.2%

9. **Please state which category you feel best describes your assignment and give a 1-2 sentence justification for your choice: A) Some attempt was made, B) Developing, but significantly deficient, C) Slightly deficient, but still mostly adequate, D) Meets requirements, E) Shows creativity and excels above and beyond requirements.**

   I think category E) fits our work best because we showed in depth knowledge of our neural network by having multiple parameters for customization, implementing two extra activation functions, and preparing and running it on the car dataset.