# Assignment 3

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## Dataset

The dataset used is Iris which is get from [here](#) . We have four fields which we used in the program as input. The four field and the first field is min value second value is max value third value is mean and the last one is SD. Fifth field is deciding parameter either the plant is Iris-setosa or not if the plant is Iris-setosa then the fifth field has 1 otherwise it has 0.

## Problem

Our goal is to find out that the plant is Iris-setosa or not

## Architecture

| Input | Hidden | Layer |
|-------|--------|-------|
| 4     | 4      | 3     |
| 4     | 5      | 4     |
| 4     | 6      | 5     |

## Condition for Input

Iris dataset has been used which has 5 fields. The input has 4 fields which gives the information regarding the length of sepal, width of sepal, length of petal and width of petal. The fourth field provides the information regarding the information of class like Iris Setosa and Iris Virginia.

## Description to interpret the Output

The performance of the output actually depends upon the hidden layer if it is less then there is high possibility of achieving good result. The output will may reference between two classes of Iris Setosa and Iris Virginia

Outputs = data[0:4:5].astype(np.int32)

# Performance

| Architecture | True Positive | True Negative | False Positive | False Negative |
|---|---|---|---|---|
| 4,4,3 | 4 | 11 | 0 | 0 |
| 4,5,4 | 5 | 10 | 0 | 0 |
| 4,6,5 | 7 | 8 | 00 | 0 |
| 4,10,5,2 | 5 | 10 | 0 | 0 |

**Improve the result**

Try the other method to learn and check the result will improve quality and knowledge.

# Summary

Load data set then divide the data into train_valid and test with ratio 90:10 then divide the train_valid data into train and valid with ratio of 90:10. Classifier is used define the architectures like theanets.classifier(4,4,3). Then train the data set layer wise, classify the test data in the last we check Tp,TN,FP,FN