**Part 1.1-a:** How many levels are there in the decision tree?

In the decision tree there are three levels, which result from the initial state to three goal states which are down two levels from the initial state. With a middle decision state which is used.

**Part 1.1-b** What is the default class label associated with each vertex?

Level 1, Vertex 1: Default Class Label Setosa

Level 2, Vertex 1: Default Class Label Versicolor

Level 3, Vertex 1: Default Class Label Setosa

Level 3, Vertex 2: Default Class Label Versicolor

Level 3, Vertex 3: Default Class Label Virginica

**Part 1.1-c** What is the name of the first attribute used for a decision, and what are the split points?

Level 1, split on attribute Petal.Length

Split Points: < 2.5 left subtree, >= 2.5 right subtree

Level 2, split on attribute Petal.Width

Split Points: < 1.8 left subtree, >= 1.8 right subtree

**Part 1.1-d** Each vertex has three lines

**Part 1.1-d-i** At each vertex, what do the three numbers in the middle line signify?

At each vertex the middle three numbers signify the chances of it being one of the tree decisions, for instance the initial state has .33,.33,.33 as the middle meaning initially there is a ⅓ chance of it being any of the three types of species. However at the second level it is .00,.50,.50 meaning that at that level there is none of the first species and the rest has a ½ chance.

**Part 1.1-d-ii** At each vertex, what does the last line signify?

The last line signifies how much of the total data set is still left to be decided. The second level says 67% since 33% of the data has already been sorted and decided. Then this number gets smaller as more and more decisions are made.