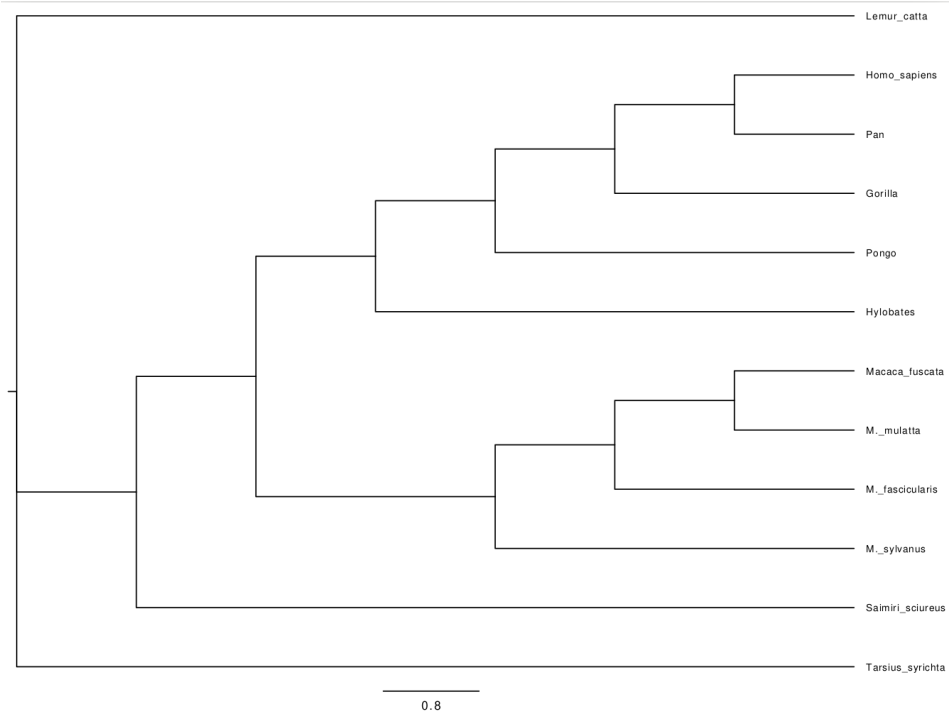
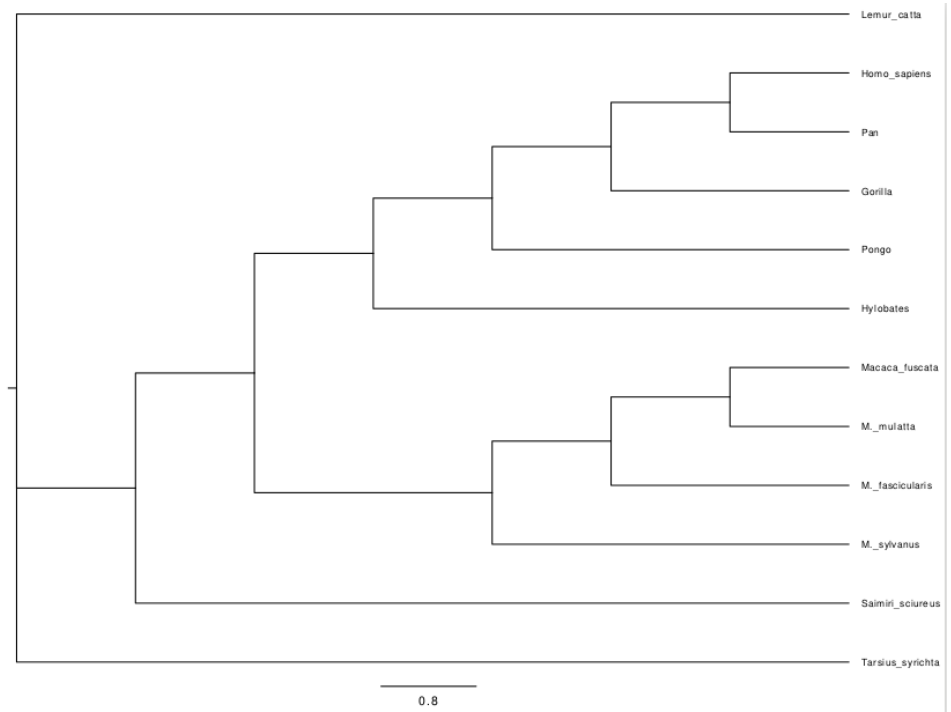
Abelardo Riojas ISC 5317
Assignment 5 Bootstrap

First tree (using parsimony)



Second tree (using likelihood)



Is this second majority consensus tree the same as the first one?

In both cases the second majority consensus tree was the same as the first one.

Write up a short document discussing the differences of the two bootstrap trees; what could cause the difference?

The differences in the trees could most likely be explained by the differences in distance criterion that we use to evaluate the best tree. With parsimony, the greedier approach, we say that the best tree is the one with the least amount of evolutionary changes. When we use likelihood, we evaluate the probability of each tree being the tree that actually represents the population. This leads us to find more nuanced trees, at the expense of the computational speed that parsimony has. Both trees use bootstrap to ‘resample’ possible trees to estimate either the tree with the least changes (parsimony) or highest likelihood (likelihood).