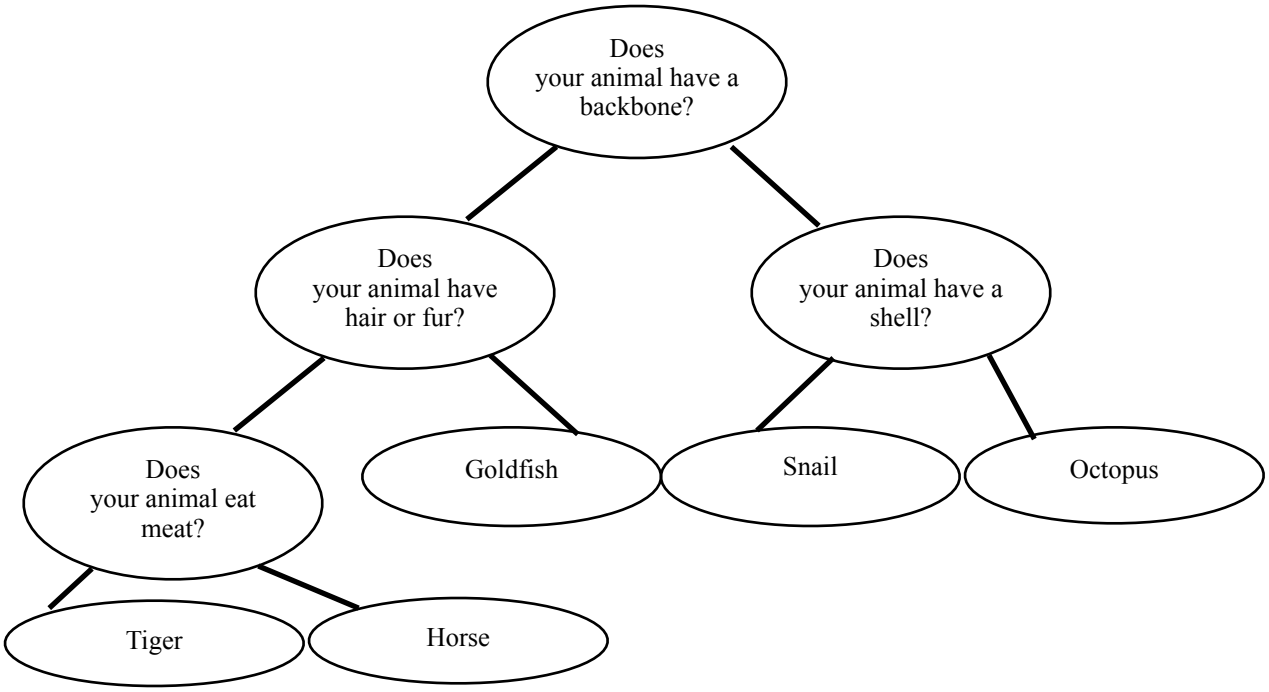
For this assignment, you will write a program "animal" that uses a binary tree to play an interactive, learning, guessing game with the user. As usual, you will design two tree representations – one memory-based, and one file-based. You will begin with a file called "knowledge", created manually, with a single animal (say, "Horse") in using your file-based representation of a single node tree. The game will ultimately grow the tree so that all internal nodes are yes/no questions, and all leaf nodes are animals. For example, after playing for some time, the tree may look like:



At this point, playing the game again, the interaction may proceed as follows:

```
% animal knowledge
Do you want to play? Yes
Does your animal have a backbone? Yes
Does your animal have hair or fur? No
Is it a Goldfish? No
I give up. What is your animal? Pigeon
Type a question that distinguishes Goldfish from Pigeon:
Does it have feathers?
What is the answer for Goldfish? No
Do you want to play? Yes
Does your animal have a backbone? Yes
Does your animal have hair or fur? No
Does it have feathers? Yes
Is it a Pigeon? No
I give up. What is your animal? Toucan
Type a question that distinguishes Pigeon from Toucan:
Is it colorful?
What is the answer for Pigeon? No
Do you want to play? No
%
```

At this point, the file "knowledge" is updated so that upon playing again, the game knows about Pigeons and Toucans in addition to the previous animals it had learned.