### Name: put your name here Role: Put your role here.

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### This assignment is designed for you to create a program that learns about animals and also can guess what animal the user is thinking about by asking yes/no questions. This design document is intended to encourage you to come up with a design for your program before you start writing code.

#### Problem Definition

### Write a paragraph explaining what the problem is, and an outline of your solution (NOT CODE!) with enough details so that someone else can implement it for you in any language. Therefore, this design is not specific to Python and should use only ideas such as variables, conditional statements, loops, and assignment statements.

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| We have to input a file game.data that contains questions and answers. The question is a node and the answers are its children. The program will read this file and make a tree accordingly. The program will then traverse through the tree and behave accordingly. If the animal is guessed correctly then the program starts again, otherwise we learn.  Reading a file and making a tree.  Start by making the first question a root  go down and check is the next item is guess or a questions  if it is a guess then add to left children  if it is a question then go down and check if the next item is a guess or a question  writing tree back up |

#### Problem Decomposition

Once you have a good grasp of the problem, use CRC-cards to define the objects that will be needed in order for your program to work. Make sure that you define all the methods and instance variables that you need, and that you completely describe how the information is managed by the objects. You are welcome to make as many copies of the cards as required.

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| **Class Name: Guessing Game** | Read\_file |
| **Class Responsibilities (data and/or methods):** | **Class Collaborations (other classes):** |
| * Read\_file: reads the data file and creates tree * Traverse: plays one game * addq: adds questions * write file: writes to file * self.root is the root node * self.rootR is a copy of self.root | * Tree |

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| **Class name:** |  |
| **Class Responsibilities (data and/or methods):** | **Class Collaborations (other classes):** |
| * Self.root is the root node * self.left is the left node * self.right is the rightNode * addright: adds the right node * addleft adds the left node * getLeft(): gets the left node * getright: gets the right node * setValue(): set the value of the node * getValue(): gets the value of the node |  |

#### Final Reflection

What are your final thoughts about this assignment and what suggestions do you have for improving it?

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| This assignment was great. I really enjoyed. However it was a bit long. If I any semblance of a life I would not have finished. |