### Name: Rebeccah Hunter Role: Put your role here.

### 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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| Create a guessing game that builds on itself each time it interacts with a user. The program asks it’s already known questions, and then based on the answers, either “wins” the game, or learns for the next time it is called to play. |

#### 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: riddler** |  |
| **Class Responsibilities (data and/or methods):** | **Class Collaborations (other classes):** |
| * The Binary Tree implementation * Implement the “learning” for the next game. | * BinaryNodes |

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| **Class name:** BinaryNodes |  |
| **Class Responsibilities (data and/or methods):** | **Class Collaborations (other classes):** |
| * Keep track of all the nodes, parent and child, etc. * Associate particular nodes (i.e. answers) with particular questions. | * questions |

#### Final Reflection

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

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| I think it would be very helpful to do this in C++. In C++ you really have to understand what it is you want to implement it and how to implement it. It may take more time, but I think it would foster greater understanding. |