The Design Phase:

Create an initial design using CRC card and function prototypes.

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| **Class name:** | BinaryTree |
| **Class Responsibilities (data and/or methods):** | **Detail of Data/Methods** |
| * **DATA** | * Store the current list to be iterated through * Store current index position * Store user input as Boolean value |
| * **Method**: Write the list to a file | * write string in the list to a file   pre: a function call from the AnimalGuesser  post: write questions and guesses to the file |
| * **Method**: Input the questions and answers file and convert it to a list | * This will open the inputted file, and convert it to string which will be stored as a list   pre: an object of class type binarytree  post: append the questions in the file as string into the self.list |
| * **Method**: Traverse the binary tree according to user input | * Go through the tree and check if the inputs are valid. Check where to go to next in the list. It store user input as boolean value.   pre: Need user input and current index  post: it will give new index position and store user input as boolean |
| * **Method**: Add new question and answer to the list | * If AI guessed wrong, this class method allows user to add new question. This adds the new   question into the file in the appropriate index position using the math from traverse\_tree.  pre: need current index  post: Adds question and answer to the list |
| * **Method**: Check whether the game is over | * Checks the AI guess correctly or not. This will keep calling going on until the AI either wins or loses.   pre: Take the current index (cur\_ind)  post: return 0 to end the game |