

Final Project Proposal Crossword Engine 5000

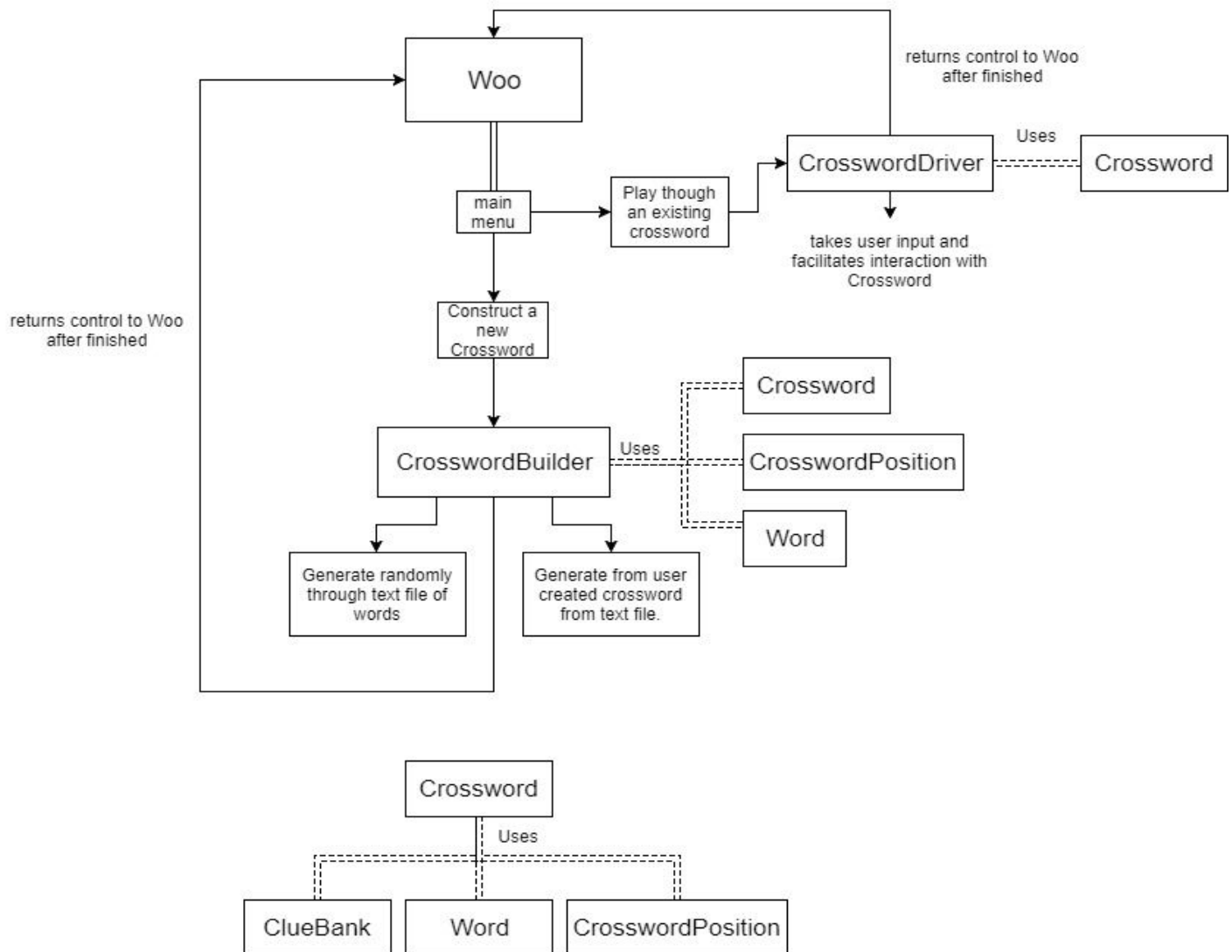
Our crossword engine will have the capability to create a crossword skeleton when provided a text file containing a list of words. The program will create a completed crossword from the given words, and give the user the option to create a blank interactive crossword from the completed crossword to be played on the commandline.

Outline of possible needed classes:

- Word
 - Will encapsulate a string of the actual word and will facilitate in incorporating words into the crossword grid by providing useful functions.
- CrosswordBuilder
 - This class will communicate with the text file and be responsible for providing functionality to insert Words into an instance of Crossword randomly.
 - Will provide methods to find suitable arrangements of words, as well as convert a text file with a user-created crossword in it into a working instance of Crossword.
 - Eg:
H
E
L O
L I N U X
O E
- CrosswordPosition
 - Small class that defines a point on the Crossword, a size (number of spaces) and a direction.
 - Will be mostly used by CrosswordBuilder
- Crossword
 - Will keep track of a two-dimensional array that contains the layout of words.
 - This is the class that most of the other classes will end up interacting with
 - Initialized to a blank grid
- CrosswordDriver
 - Will be passed a Crossword during construction
 - Will be used to actually play through a fully completed crossword
 - Will allow for the user to type in keywords such as “show clues” etc. and carry out corresponding actions
- ClueBank
 - Responsible for keeping track of a clues and their corresponding positions.
 - User will be able to supply a text file to turn into a ClueBank as well.

- An instance of this class will be kept by Crossword

Diagram of Relationships



Other Planned Functionality:

- A possible “easy mode”
 - The program only allows for correct answers to be inputted into the crossword
- Allow for the user to save the randomly generated crossword in a text file to be used later, or to be shared with friends.

Skeleton To Do:

- 1) Get a basic Crossword and class going
- 2) Create Word and CrosswordPoint
- 3) Create working algorithm which is able to find viable points to insert the words (will most likely take the most time to do) within CrosswordBuilder
- 4) Allow for user created crossword functionality
- 5) Create inviting text based user interface