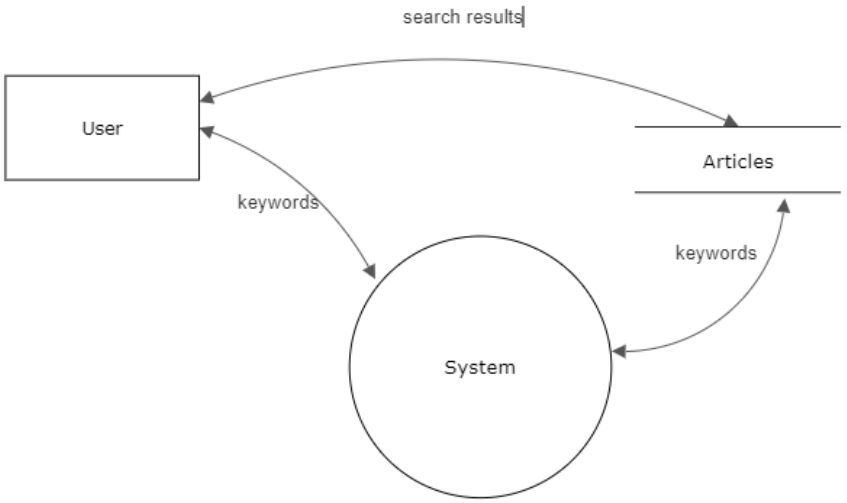
1. Overview & User Guide:
    a. The system is based on MongoDB which has a collection of article data including author, title, venue, year, and references.
    b. There are four functions in the system:
        i. Search the article: Enter one or more keywords then the system will show all articles that match the keywords. Furthermore, select one of the results by its order number; it will show more info about the selected article including the abstract and venue.
        ii. Search for authors: Enter a keyword then the system will show all authors that match the keywords including the number of publications. Furthermore, select one of the authors by his/her name; it will show info about all his/her articles.
        iii. List the venues: Enter a number N then the system will show the top N articles in that venue including the number of articles and the amount citations in that venue. The result will be sorted in descending order by the number of citations.
        iv. Add an article: Enter a unique id, a title, a list of authors, and a year then the system will add the article with this information into the collection. The fields abstract and venue would be set to null by default.



2. Design of software:
    a. connect(): connect to MongoDB and create a collection of all data
    b. 4 basic functions: search_for_article, search_for_author, list_venue, add_article
    c. print_article: this function prints out articles info in a perfect format
3. Test Strategy: We tested for exceptional cases like wrong type keyword input, articles with no venue or references, etc. We test the running time of each search with massive data set as well to make sure the system works effectively.
4. The group works breakdown strategy: Robbie came up with an excellent idea for the design of our program. I did the original version of three functions, and Robbie did

one of them. Then Robbie works more on fixing bugs, doing the perfect format of the output, and fixing efficiency problems. I finish the report the part.