

design load: this takes in the port number of the mongodb server and the file you want to turn into a database, then it reads every line and puts each line into a list and converts the whole file into a database, it is called in main

design main: main takes in the port number as input, connects to the database then asks you what you want to do for choices.

design search\_articles: search articles takes a database as input and connects to the collection, it then takes in keywords to search which articles contain the keywords you type. it is called in main, and has the database as a parameter

design SearchAuthors: takes in a keyword which is matched against existing authors and their publications. Authors are listed in an enumerated order which can be selected from to show details of any one author such as the title, year and venue of all articles that author has worked on in order of most recent publications

design list venues: Taking input of number n which is the number of top index the user want to see which is sorted by the number of paper that referece that venue, listing the venue, the number of articles in that venue, and the number of articles that reference a paper in that venue.

design add article:the user will be be prompted to add the following details -1.Unique Id 2.Title 3.List of Authors 4.year. For add article firstly taking unique id from the user and chacking if we already have the id or not if not then taking futher information about the article user want to add. Then setting abstract, venue to null and refrences to an empty array and citations to zero. it is called in main, and has the database as a parameter.

Testing strategy: first testing with the small databases and using case senitive tests to see if the program is case insensitive, then moving on to larger databases to check the same thing.

user guide: type python3 load-json.py and fill out the information given, the port number and file you wish to turn into a database. After load-json is done you have to type python3 main.py and enter in the port number again. There will then be a prompt: press 1 to search for articles, 2 to search for authors, 3 to list venues, 4 to insert info into the database, press 5 to quit. When you press 1 you have to enter keywords and you will get results, press the number of the article you want to see or type ".search" to go back to searching, and if you enter an article type ".back" to go back to the list of searches, at search screen type ".quit" to go back to the main menu. type 2 to and type in a keyword and also follow the instructions printed, type 3 and enter a number to see the top venues follow the instructions to go back, type 4 to insert an article, follow the prompts and follow the instructions to return to the main menu, type 5 to quit and close the program.

group work break down: Matthew completed the load-json within the first few days and everyone was assigned parts. Matthew was search for articles, yimage was search for authors and list venues, and prahbjot was adding an articles.