Report

A) The architecture is divided into 7 main components and they are as follows:

   a. Scrapping the website.
   b. Storing the retrieved data into MongoDb database.
   c. API calls.
   d. Catalogue.
   e. UserNotes.
   f. Searchlog.
   g. UI

B) First and foremost part is getting the information from the website. The links are provided and essential data from it that is Author name and Name of the Book are needed to be extracted. The regular expression is used to extract that information and is store in the mongodb database. The database will be stored in one container. Second Container is of the catalogue which on the Api call in my case “main.py” will be used to handle the service of the front-end and the back-end. The catalogue on user query will fetch the results from the database and store it in catalogue which will be displayed to the user.

C) The second important module is the search log. The Keyword given by the user will be used to extract the results and also the number of times the keyword that is extracted its frequency count will be calculated and will be stored in the log file.

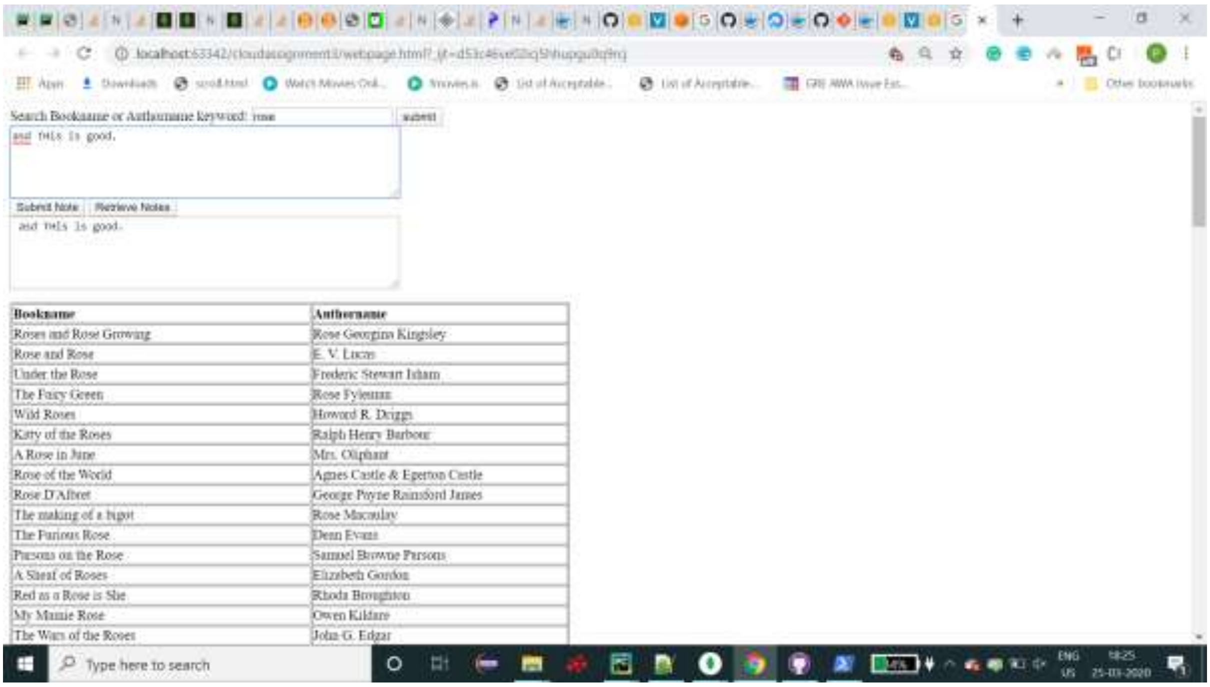
D) The user note is another module present in other container in which the user can give notes on the specific keyword and the notes related to that specific keyword on click of the Retrieve button . If no notes are present It will show to the user that none of them is present.

E) The API calls are done using python flask in my scenario and it will coordinate between the various modules and along with the User Interface. The User interface contains the functionalities such as Search Authorname or Bookname keyword, note-retreival and catalogue display to the user.

F) All of the modules are implemented in the Docker Container. Docker is Platform as a service product which make use of the Os-level virtualization to deliver software in the form of the packages which are called Containers. All of the Containers are isolated from each other and are bundled with their own software , libraries and configuration files ; which can communicate with each other through channels. All of the containers are runed through a single defined channels.

2) Do ensure that CORS extension is enabled in the browser in order for the flask to work. Its called the cross origin. The github link for the project is as follows:https://github.com/Punarvavyas/Cloud_doccer_implementation .

3) The url for running the file is as follows: http://3.82.157.77/webpage.html



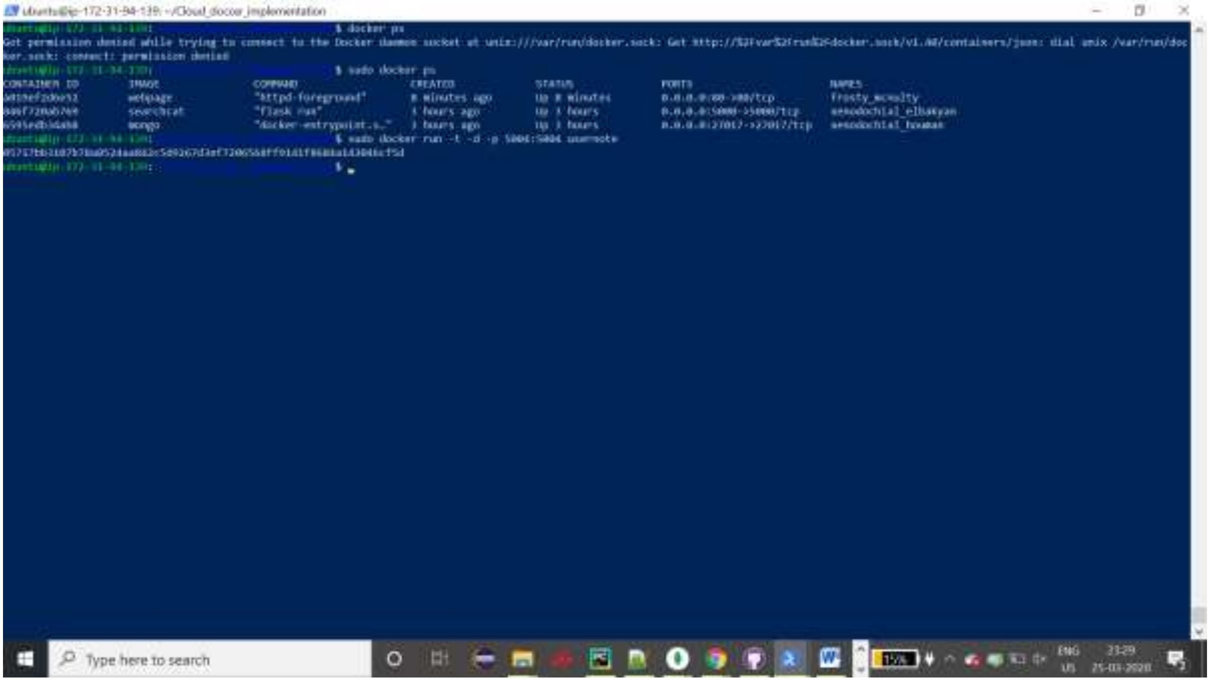
Search Bookname or Authorname keyword: rose submit

and this is good.

Submit Note | Retrieve Notes

and this is good.

Bookname	Authorname
Roses and Rose Growing	Rose Georgina Kingsley
Rose and Rose	E. V. Lucas
Under the Rose	Frederic Stewart Isham
The Fairy Green	Rose Fyleman
Wild Roses	Howard R. Driggs
Katy of the Roses	Ralph Henry Barbour
A Rose in June	Mrs. Oliphant
Rose of the World	Agnes Castle & Egerton Castle
Rose D'Albret	George Payne Rainsford James
The making of a bigot	Rose Macaulay
The Furious Rose	Dean Evans
Parsons on the Rose	Samuel Browne Parsons
A Sheaf of Roses	Elizabeth Gordon
Red as a Rose is She	Rhoda Broughton
My Mamie Rose	Owen Kildare
The Wars of the Roses	John G. Edgar



```
ubuntu@ip-172-31-94-139:~/Cloud_doccer_implementation$ docker ps
Got permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get http://%2Fvar%2Frun%2Fdocker.sock/v1.40/containers/json: dial unix /var/run/docker.sock: connect: permission denied
ubuntu@ip-172-31-94-139:~/Cloud_doccer_implementation$ sudo docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS              PORTS                      NAMES
[illegible]         webpage             "httpd-foreground"       8 minutes ago       Up 8 minutes        0.0.0.0:80->80/tcp         frosty_mcnulty
[illegible]         searchcat           "flask run"              3 hours ago         Up 3 hours          0.0.0.0:5000->5000/tcp     xenodochial_elbakyan
[illegible]         mongo               "docker-entrypoint.s…"   3 hours ago         Up 3 hours          0.0.0.0:27017->27017/tcp   xenodochial_houman
ubuntu@ip-172-31-94-139:~/Cloud_doccer_implementation$ sudo docker run -t -d -p 5004:5004 usernote
[illegible]
ubuntu@ip-172-31-94-139:~/Cloud_doccer_implementation$
```

This are the final figures of deployed 4 containers and final output of the running service.

4) Following test cases were performed in the assignment:

- To ensure concurrent execution of all the different services and containers.
- Note Retrieval Bug solution of improper retrieval of notes.
- Checked whether the frequency count of the keyword is done properly or not.
- All API calls were checked and are ensured that they are done properly.
- Catalogue solution of improper display of results.

References

1. “Docker (software),” *Wikipedia*, 19-Mar-2020. [Online]. Available: https://en.wikipedia.org/wiki/Docker_(software). [Accessed: 26-Mar-2020].
2. “Get started with Docker Compose,” *Docker Documentation*, 25-Mar-2020. [Online]. Available: https://docs.docker.com/compose/gettingstarted/. [Accessed: 26-Mar-2020].
3. “HTML Introduction,” *Introduction to HTML*. [Online]. Available: https://www.w3schools.com/html/html_intro.asp. [Accessed: 26-Mar-2020].
4. “Python 3.8.2 documentation,” *3.8.2 Documentation*. [Online]. Available: https://docs.python.org/3/. [Accessed: 26-Mar-2020].