1) An overview of the function of the code (i.e., what it does and what it can be used for).

For our application, users are able to access the lecture material of CS410 from week 1 through week 12. Users can also search for the content by the keywords that they are interested in in the search bar and get the relevant result from the lectures based on the query they enter. Our results are based on the keywords' frequency of outcome in the lecture videos. Overall, we implemented a search engine for the lecture videos of CS410.

2) Documentation of how the software is implemented with sufficient detail so that others can have a basic understanding of your code for future extension or any further improvement.

There are two main parts of our code. The first part is the storage of lecture videos and subtitles. We download all of them and create a website to show them. We use Google Cloud Platform for the database to store their videos and subtitles paths to optimize the loading step.
The second part is the search engine part. We use TF-IDF to manage all of the subtitle texts and give a ranking based on the keyword. And the results will show the top ranks of the videos which are corresponding to the subtitles. So users can get the videos that mention the keyword.

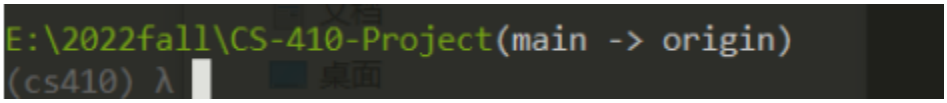
3) Documentation of the usage of the software including either documentation of usages of APIs or detailed instructions on how to install and run a software, whichever is applicable.

We use Flask API for our application. In order to run the application successfully, we provide a virtual environment that already installed most of the package that we used. Please follow the steps below to run the application:

Before you do the following steps, please contact us to add your IP address to the database in order to run the application successfully. The email address is yx35@illinois.edu

1. Open terminal.
2. Type "git clone https://github.com/YS-XU/CS-410-Project.git" in the terminal to the directory that you want. The folder is large, so you should check your disk before you clone.
3. After you clone, type "cd .\CS-410-Project\" to go into the folder.

4. Type “cs410/Scripts/activate” to activate the virtual environment.
5. If the virtual environment is activated, there should be a prefix in your terminal showing **(cs410).**



6. Type “pip install jieba” to download one of our packages that may not be included in the folder.
7. Type “flask run” or “python main.py” to run our application. It will show a localhost link. Copy that link and paste it in the browser.

This is our first time using a virtual environment. You may need to install more than one package if there are any errors. For instance, “pip install flask”, “pip install pymysql”, “pip install nltk”

4) Brief description of contribution of each team member in case of a multi-person team.

Yaosheng Xu: deals with the connection between frontend and backend.
Ji Wu: deals with the search engine part.