Product Design

Team number	43
Project Title	Tools for Speech Recognition
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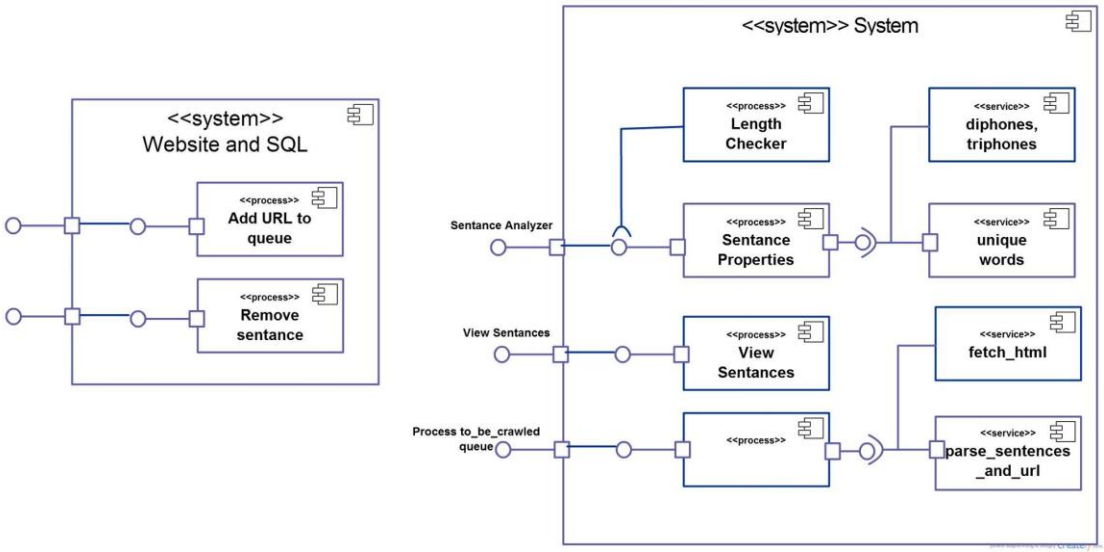
Architectural Model

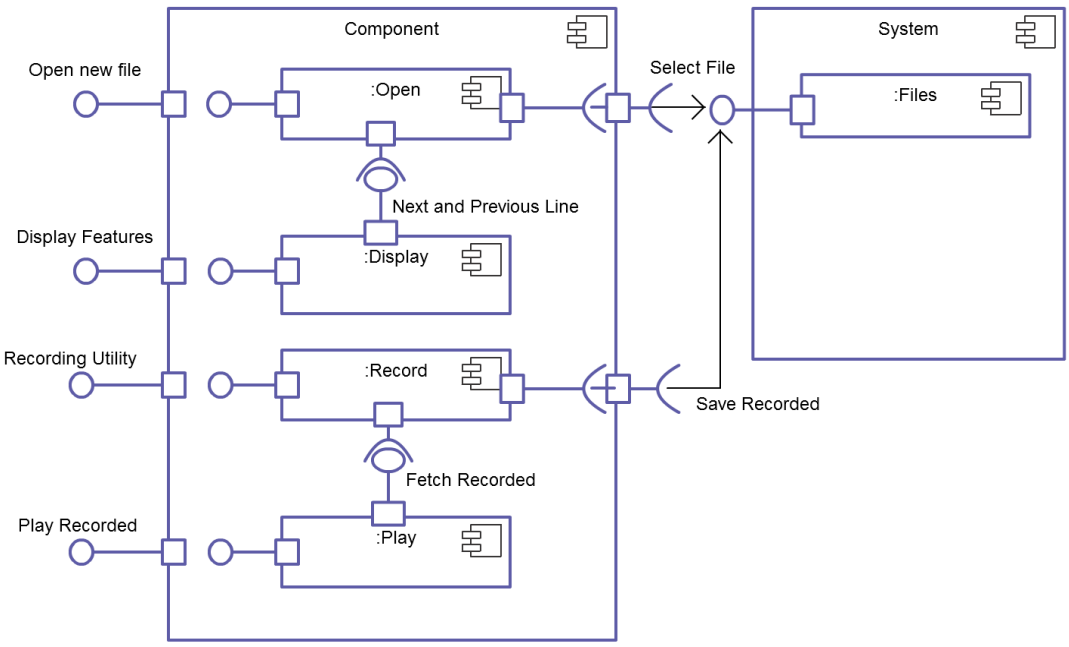
CRAWLER



Component No 1 Add URL to Queue	Component behavior • Takes input and stores the url to Database
Component 2 Remove Sentence	Component behavior • Takes unique id as input and deletes that row
Component 3 Length Checker	Component behavior • Finds Unique words/Different Nouns in a sentence

Component 4 View Sentences	Component behaviour • Gives list of sentences according to the search parameters given by user.
Component 5 Sentence Properties	Component state • Holds Sentence Component behavior • It finds the diphones-triphones and unique words in a sentence and saves it in the database
Component 6 Fetch_html	Component behaviour • Downloads the html content of the url passed
Component 7 Parse_sentences_and_URL	Component behaviour • Input : HTML Content • Output: Sentences and URLs present on that page

VOICE RECORDING

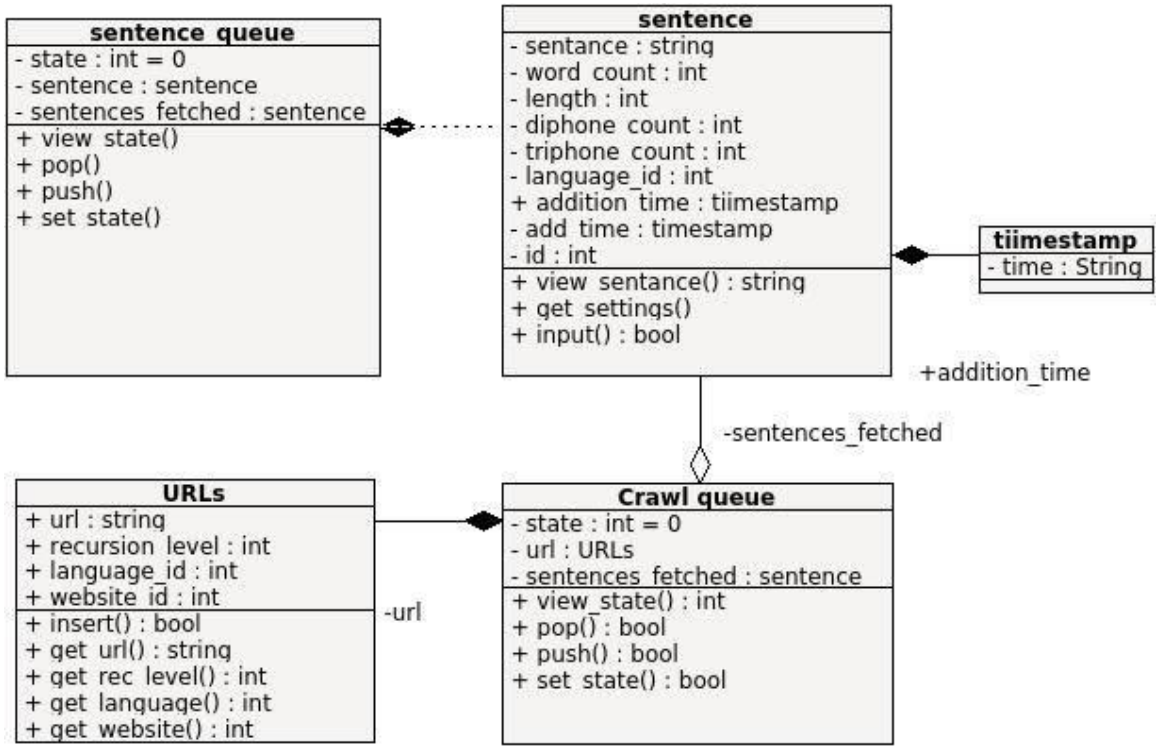


Component No 1 Open	Component behavior • The open component is used to open new files.
Component 2 Record	Component state • Record holds the max limit for silence and the rate of recording Component behavior • Record is used to record whatever the speaker says. • Record saves the recorded voice in a wav file.
Component 3 Play	Component behavior • Play is used to play the selected wav file.

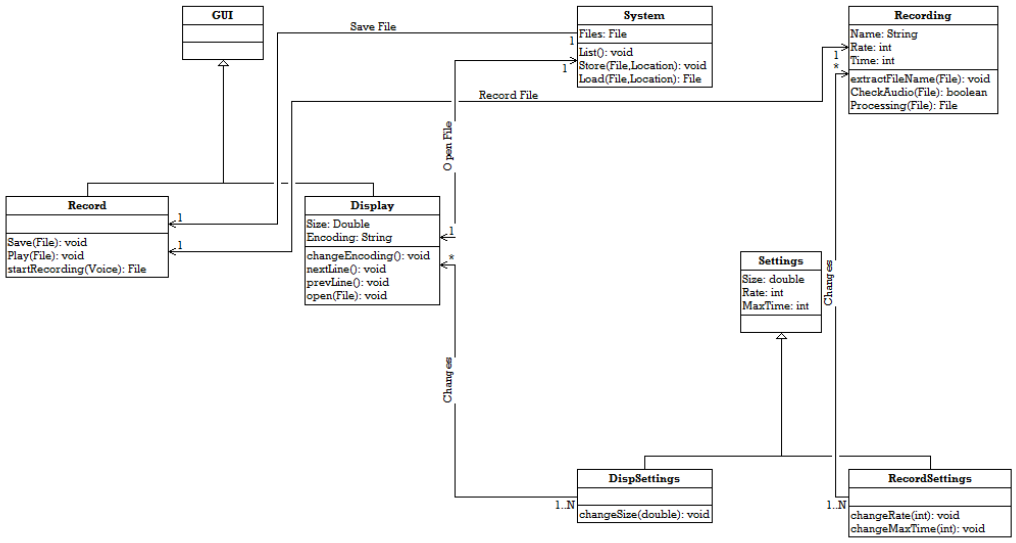
Component 4 Display	Component state • Display Holds a line of the input file. Component behavior • Display is used to fetch the next line of inut file. • Display is used to fetch the previous line. • Display is used to open a new file.

Class Diagram(s)

CRAWLER

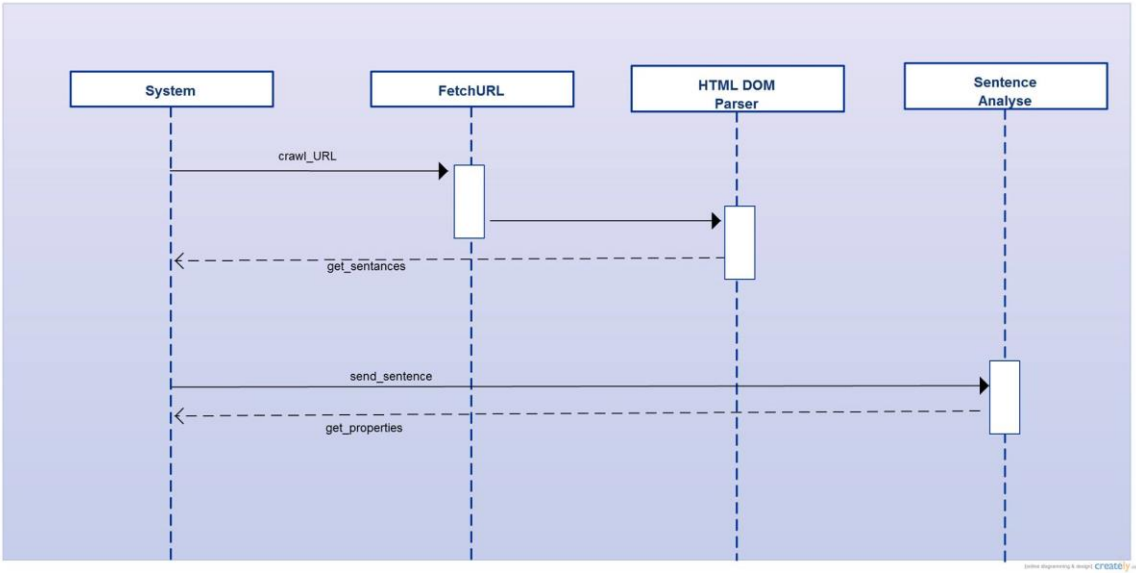


VOICE RECORDING

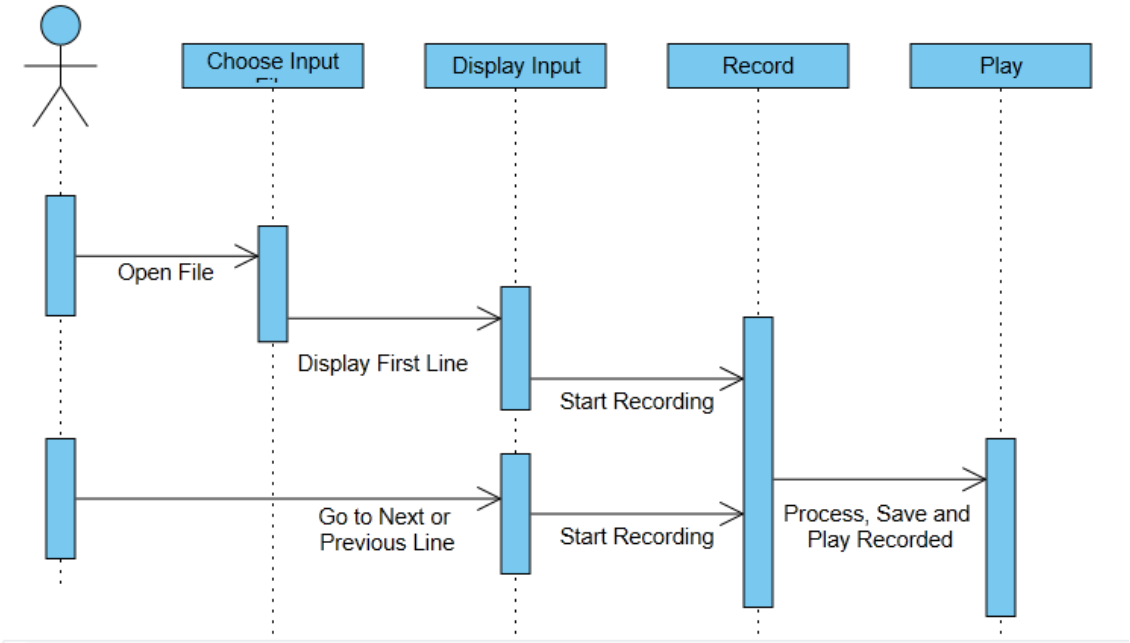


Sequence Diagram(s)

CRAWLER



VOICE RECORDING



Design Rationale

CRAWLER

Initially when the URL was added by the user, it automatically crawls and parse sentences after hitting Submit button. But the client needed Recursive Crawling, due to which Design was changed and the URLs are being added in a separate Queue and a CRON Job , now crawls the URL from Queue every 2 minutes. Thus we have decided the module to be divided into 2 separate modules, Add URL and Fetch URL.

VOICE RECORDING

Initially we were thinking of using a single thread for frontend and backend but we encountered that recording is done in an infinite loop and control is not transferred back to GUI. Hence the recording could not be stopped. Hence we switched to multiple threads were backend and frontend will be done in multiple threads.

VOICE ANALYSIS

We decided to implement the noise reduction part with the help of SOX Library and check for silences in the end and start through wave module in python.