# SumOfSounds

https://sum-sounds.herokuapp.com/

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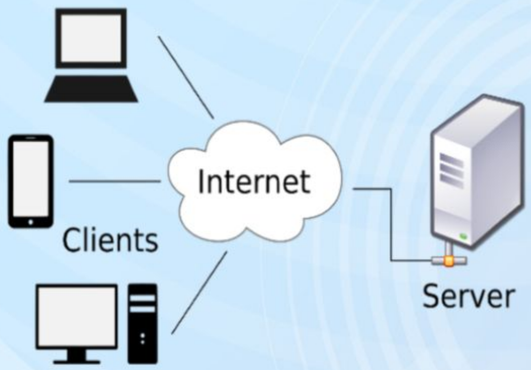
## Project Description

Nowadays speech synthesis technologies are very popular and there are lots of text-to-speech applications on the market that read books, articles, docs without any problems. But when there are mathematical formulas in the text almost all of such text-to-speech applications have trouble with voicing the formulas.
However, there are people with visual impairments who do research in mathematics and need to read scientific articles and books, which usually contain lots of formulas and cannot be read by these applications. This motivated our team to develop an application that could voice the mathematical formulas and equations. Such a project can be useful not only for people with vision problems but also for developers of text-to-speech applications, who can integrate our application to theirs.

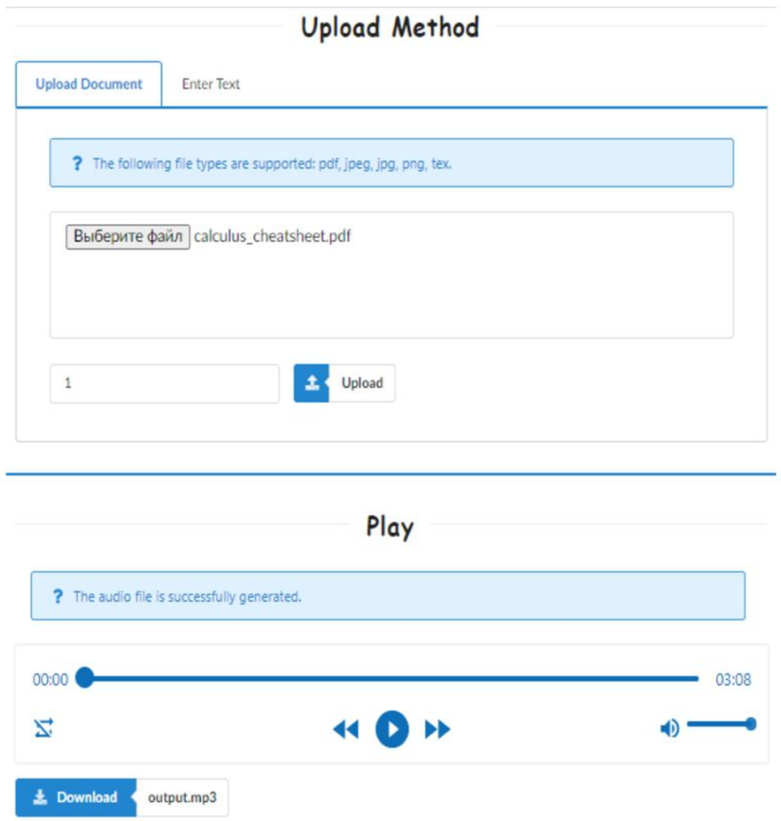
## Architecture

SumOfSounds follows a Client/Server software architecture style, in which the server delivers the data to be displayed by the client. So, by following this architecture, our program can support concurrent requests of many clients without having any conflicts.



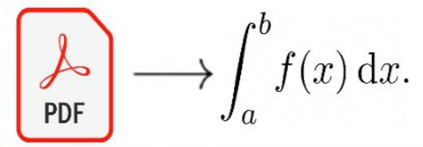

Server is responsible for generating mp3 files from the uploaded image, PDF, or LaTeX files.
Client is responsible for the graphical user interface and user experience.

## User Interface




## Algorithm

Step 1: pdf to image




Step 2: image to LaTeX

→ \int_a^b \! f(x) \, \mathrm{d}x.

Step 3: LaTeX to plain text

→ integral from a to b of f of x d x dot

Step 4: plain text to audio

→ MP3

## Technology Stack

Google Cloud Platform, HEROKU, React, JS, Node.js