

# CLAP

**WALKTHROUGH HIGHLIGHTING BACKEND AND FRONTEND  
INFRASTRUCTURE**

# BACKEND : USER SPECIFIC TABLES

**speechnotextbackend\_user** : User id(key referenced elsewhere) , password,email , mode (demo/random) and other user specific detail

**speechnotextbackend\_appuser** : references above , one to one correspondance – contains other user details like name, number of conversions, verifications ,scores

No of text verifications : updated when verify task allocated

No of conversions : updated when speak task allocated

**speechnotextbackend\_Loginlog** – Timestamp record of logins

# BACKEND : TEXT (TASK) TABLES

**speechtotextbackend\_textfile** : id , name, language, text , assigned , conversions, verified conversions, conversion passes

Stores generated text file **tasks** -details

Assigned : +1 when assigned to user/ -1 when user converts/passes the task

Conversions - +1 if user converts the text

Conversin\_passes - +1 if user doesn't convert/ clicks on pass

Example data :

65294 | Regular29 | Tamil | மின்புத்தகங்கள் எவ்வாறு  
அமைய வேண்டும் | 1 | 1 | 0 | 0 | 2019-04-15  
09:21:15.632059+05:30 |  
eruzhvali-short-stories-poems\_5nshNVP | freetamilebooks |  
Regular

**Speechtotextbackend\_textfileappuser** : References both textfile and user tables- i.e user-> task mapping details

This table adds data as soon as a user converts text to audio in the app, it contains user id , text file id, id of audio file recorded by user, verifications, audio length, verification passes (updated after another user verifies this task created),assigned (updated after this task is assigned for verification to another user)

# BACKEND : TEXT (TASK) TABLES

## Speechtotextbackend\_textfileappuserverify :

Contains id, text ,verificationStatus,  
verificationDateTime,t extFileAppUser\_id,  
verifyingAppUser\_id ,audio\_quality

Textfileappuser\_id references the task from  
textfileappuser table and verifyingappuser\_id is the user  
id . It creates the task according to the user verification  
details. Audio quality refers to comment by user eg  
“audio is fine”

## Example data :

28490 | थोड़ा इंतज़ार करो फिर तुम्हें एक अनोखा फल  
चखने को मिलेगा  
| 3 | 2019-08-19 22:43:59.580215+05:30 |  
2019-08-19 22:43:43.810465+05:30 | 100 |  
22270 | 445 | Inaudible;

# BACKEND :TEXT (TASKS) TABLES

## **Speechtotextbackend\_uploadtextfile:**

Two fields : id and textfile

Contains the list of text files uploaded

## **Others :**

No data recorded in any of these tables ( for audio files conversion )

Speechtotextbackend\_audiofile

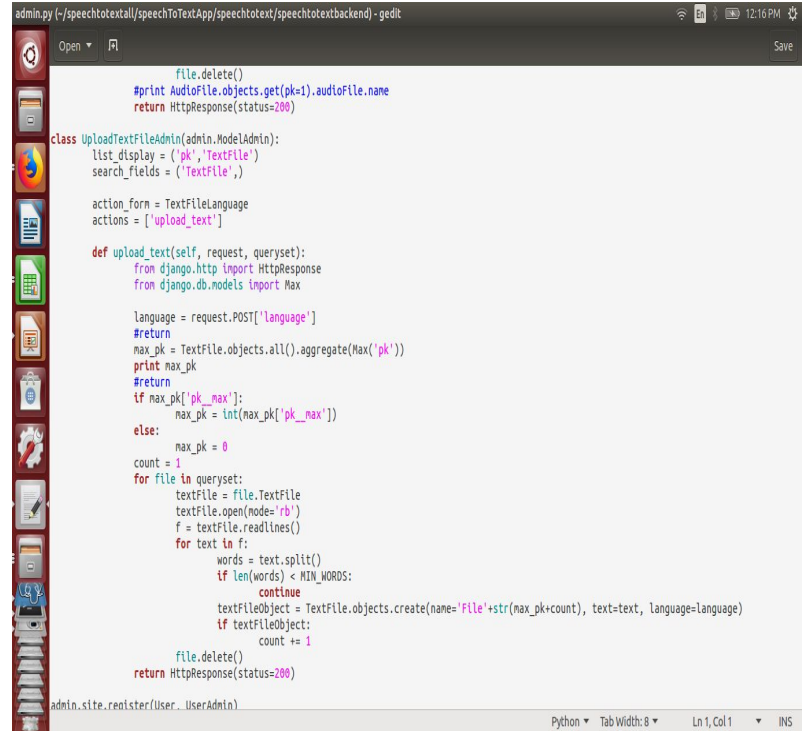
Speechtotextbackend\_audiofileappuser

Speechtotextbackend\_audiofileappuserverify

Speechtotextbackend\_uploadaudiofile

# TEXT CONVERSION WORKFLOW

- Text files exist under different sources (in different folders named Hindi, Marathi,Malyalam etc)
- Uploaded individually via dashboard (Admin interface)
- The code has been modified to filter sentences(remove special characters, filter by length -not included in this screenshot ) but task creation is done in the final stage and uploaded to table speechtotextbackend\_textfiles



```
admin.py (-/speechtotextall/speechToTextApp/speechtotext/speechtotextbackend) - gedit

file.delete()
#print AudioFile.objects.get(pk=1).audioFile.name
return HttpResponse(status=200)

class UploadTextFileAdmin(admin.ModelAdmin):
    list_display = ('pk', 'TextFile')
    search_fields = ('TextFile',)

    action_form = TextFileLanguage
    actions = ['upload_text']

    def upload_text(self, request, queryset):
        from django.http import HttpResponseRedirect
        from django.db.models import Max

        language = request.POST['language']
        #return
        max_pk = TextFile.objects.all().aggregate(Max('pk'))
        #print max_pk
        #return
        if max_pk['pk_max']:
            max_pk = int(max_pk['pk_max'])
        else:
            max_pk = 0
        count = 1
        for file in queryset:
            textFile = file.TextFile
            textFile.open(mode='rb')
            f = textFile.readlines()
            for text in f:
                words = text.split()
                if len(words) < MIN_WORDS:
                    continue
                textFileObject = TextFile.objects.create(name='File'+str(max_pk+count), text=text, language=language)
                if textFileObject:
                    count += 1
            file.delete()
        return HttpResponseRedirect(status=200)

admin.site.register(User, UserAdmin)
```

# TEXT CONVERSION WORKFLOW

Firefox Web Browser

Select upload text file to change | Django site admin - Mozilla Firefox

Google | Course: Software | Google Slides | CLAP Presentatio | Select upload text fil | To allow batch wi | Site administration |

speechtotext.cse.iitb.ac.in/admin/speechtotextbackend/uplo 67% Search

django WELCOME, SPEECHTOTEXTADMIN VIEW SITE / CHANGE PASSWORD / LOG OUT

DASHBOARD BOOKMARKS APPLICATIONS ADMINISTRATION

Home: Speechtotextbackend: Upload text files

Select upload text file to change

ADD UPLOAD TEXT FILE +

Search

Action: Upload text Language: Hindi Go 1 of 100 selected

☐ Delete selected uploaded files

☒ Upload text

931	text_files/20707-janvaron-ki-ginti.txt
<input type="checkbox"/> 930	text_files/15702-mujhe-abhi-batayien-gol-bus-gol.txt
<input type="checkbox"/> 929	text_files/15728-jhontsi.txt
<input type="checkbox"/> 928	text_files/21226-siyaar-ki-haart.txt
<input type="checkbox"/> 927	text_files/9392-pambaram-ek-shararati-lattu.txt
<input type="checkbox"/> 926	text_files/60140-pakshi-kanghee-kyon-nahin-karte.txt
<input type="checkbox"/> 925	text_files/7952-kaun-bola-boink.txt
<input type="checkbox"/> 924	text_files/935-kalku-ke-kissey-02-manch-par-khildadi.txt
<input type="checkbox"/> 923	text_files/61269-kite-of-chiku.txt
<input type="checkbox"/> 922	text_files/30074-mere-sambar-mein-chamgadad.txt
<input type="checkbox"/> 921	text_files/21132-marubumi-mein-maldhok.txt
<input type="checkbox"/> 920	text_files/1910-didi-ka-rang-biranga-khazaana.txt
<input type="checkbox"/> 919	text_files/42650-my-dreams.txt

# TASK CREATION

- After upload , file gets deleted and tasks created in textfiles db, can be seen in the dashboard as well from textfiles
- Each task assigned a unique id while creation
- This id currently generates duplicates when a bulk of text files are uploaded and converted at the same time due to key issues

Firefox Web Browser

Select TextFile to change | Django site admin - Mozilla Firefox

Google | Course: Software | Google Slides | CLAP Presentation | Select TextFile to change | To allow batch wi | Site administration |

speechtotext.cse.iitb.ac.in/admin/speechtotextbackend/text/ 67%

Search

django

WELCOME, SPEECHTEXTADMIN. NEW SITE / CHANGE PASSWORD / LOG OUT

Home: SpeechtotextBackend / TextFile

Select TextFile to change

ADD TEXTFILE

0 of 100 selected

<input type="checkbox"/>	PK	NAME	CREATED	LANGUAGE	BOOK NAME	TEXT	ASSIGNED	CONVERSIONS	VERIFIED CONVERSIONS	CONVERSION PROGRES
<input type="checkbox"/>	81283	Regular81782	Sept. 28, 2019, 4:54 p.m.	Hindi	37651-jadui-aam	जगुई आम जगुई आम	0	0	0	0
<input type="checkbox"/>	81282	Regular81781	Sept. 28, 2019, 4:54 p.m.	Hindi	37651-jadui-aam	बद अम खुई बकी को ललम पे	0	0	0	0
<input type="checkbox"/>	81281	Regular81780	Sept. 28, 2019, 4:54 p.m.	Hindi	37651-jadui-aam	गं अमी लम का ल जगुई आम बका है, ना ही लका है	0	0	0	0
<input type="checkbox"/>	81280	Regular81779	Sept. 28, 2019, 4:54 p.m.	Hindi	37651-jadui-aam	बहुई लम की जलमल नी लेम लकाई हो	0	0	0	0
<input type="checkbox"/>	81279	Regular81778	Sept. 28, 2019, 4:54 p.m.	Hindi	37651-jadui-aam	इले खुईलक लेमके डीलेल ललल ललललेल ललल के ललललल ले लेललल ले लेललल ललललल लेलल	0	0	0	0
<input type="checkbox"/>	81278	Regular81777	Sept. 28, 2019, 4:54 p.m.	Hindi	37651-jadui-aam	उलेले अलेले लेललल ले लेलल ललल के आम लेले लेल ललल है	0	0	0	0
<input type="checkbox"/>	81277	Regular81776	Sept. 28, 2019, 4:54 p.m.	Hindi	37651-jadui-aam	जगुई आम का लेल लेलल ललल ललल लेलल लेल ललल पे	0	0	0	0
<input type="checkbox"/>	81276	Regular81775	Sept. 28, 2019, 4:54 p.m.	Hindi	37651-jadui-aam	लेलल लेललल लेल लललल है	0	0	0	0
<input type="checkbox"/>	81275	Regular81774	Sept. 28, 2019, 4:54 p.m.	Hindi	37651-jadui-aam	उलेले जगुई आम का लेल लेलल लेलल ले लेलल लेल लललल लेल लेल	0	0	0	0
<input type="checkbox"/>	81274	Regular81773	Sept. 28, 2019, 4:54 p.m.	Hindi	37651-jadui-aam	उलेले का ल लेलल लललल लल ललल लललल लेलल	0	0	0	0
<input type="checkbox"/>	81273	Regular81772	Sept. 28, 2019, 4:54 p.m.	Hindi	37651-jadui-aam	उलेलेले लेले ललललल ले लेल लल	0	0	0	0
<input type="checkbox"/>	81272	Regular81771	Sept. 28, 2019, 4:54 p.m.	Hindi	37651-jadui-aam	लेललल ललल लेलल लेल लेलललल ले लेललल लेलल लेलल	0	0	0	0
<input type="checkbox"/>	81271	Regular81770	Sept. 28, 2019, 4:54 p.m.	Hindi	37651-jadui-aam	ललल लल ललल ले लेलेले लेलल लेलल लेलल लेलल लेलल लेल	0	0	0	0



# TASK ALLOCATION

MAX\_TEXT\_CONVERSIONS=2 -each text to speech task is given to two users atmost (constant can be changed)

MAX\_TEXT\_VERIFICATIONS = 3 each verification task is given to two users currently, if there is a mismatch in comments then it is given to third user

Allocation of these tasks are assigned in batches per user filtered by selected language, task completed or not , not already assigned and some other variables.

Picks up the tasks such that max tasks assigned per user does not exceed the constants assigned

Currently max conversion tasks per user at a time is set to 5 and max verification task per user at a time is set to 3

MAX\_ASSIGNED\_TEXT\_CONVERSION = 5

MAX\_ASSIGNED\_TEXT\_VERIFICATION = 3

Algo in utils.py

```
def get_new_text_conversion_list(appUser, language):
```

```
def get_new_text_verification_list(appUser, language):
```

# TASK ALLOCATION

TEXT TO SPEECH :

ASSIGNED BATCH SIZE = 10 Currently

The filtered files discussed previously are the valid files that can be assigned to users for conversion

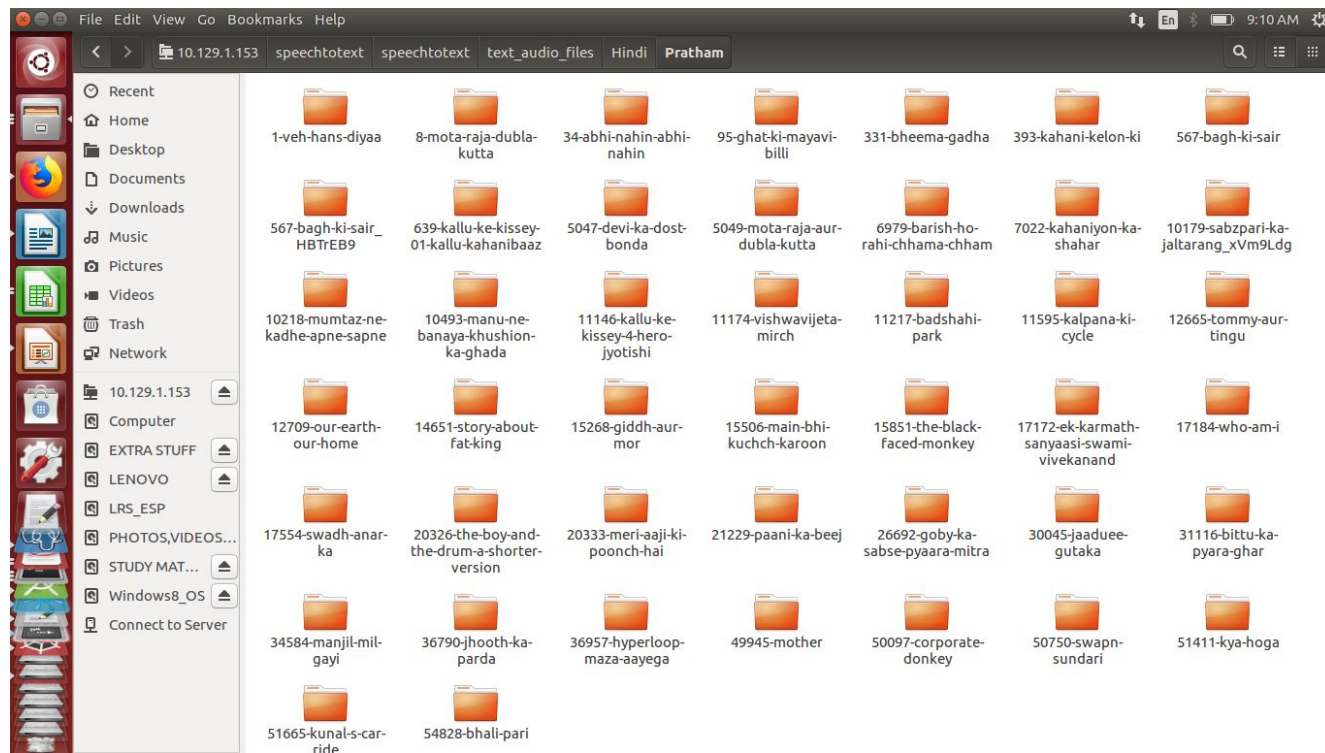
All the valid files are divided into different batches as per the Batch size allowed

All files in the batch should be assigned first and then only the next batch is assigned

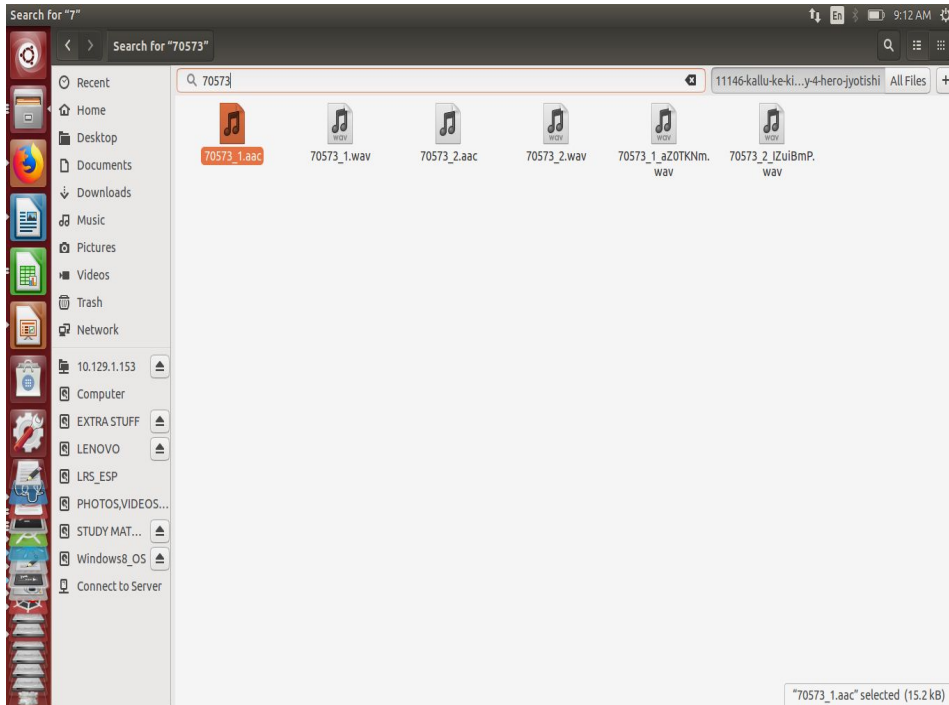
VERIFICATION :

Same algorithm followed

# AUDIO FILE STORAGE



# AUDIO FILE STORAGE



- 3 files created for each recording
- 1 original file, 1 faad generated aac converted file and 1 clean file
- 2 recordings for each task currently , so 6 files in total corresponding to each text file task
- Batch allocation followed so currently some tasks are in status complete (2 done) and in some tasks partially (1 done)
- Clean file picked up for validation

# OVERVIEW OF CODE STRUCTURE

Utils.py -> contains all the algorithms for user task allocation and storage for both verify and speech tasks.

Admin.py-> code for uploading text files, files-> task conversion algorithm, csv changes

Models.py -> contains database structures, initialisations

constants.py-> constants like batchsizes, no of tasks assigned, etc

Views.py -> code for dashboard modification