VOICE COMPARER

A PROJECT REPORT

Submitted by

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in fulfillment of the Mini Project of

OPEN SOURCE TECHNOLOGIES LAB

in

COMPUTER SCIENCE & ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY AND SCIENCES

(Affiliated to Andhra University)

SANGIVALASA, VISAKHAPATNAM - 531162

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BONAFIDE CERTIFICATE

This is to certify that this project report "**VOICE COMPARER**" is the bonafide work of **A.B.Venkatesh (317126510001)** of **III/IV CSE** carried out the project work under my supervision.

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TABLE OF CONTENTS:

• INTRODUCTION

- This Voice Comparer is designed purely for HOD to comare voices of parents and recorded voices and could be used for information retrieval.

• OVERALL DESCRIPTION:

As mentioned earlier, this voice comparer is a one solution to compare the voices of parents and recorded voice .This system's access is granted to the Administrator only who has the access to view the data only and this system provides the users a very friendly user interface.

Administrator's functionalities are to add the students data , original recorded files compaare the files and delete the records of certain student if requested by the user and modify database.

2.SYSTEM ANALYSIS

System Analysis is the description of a system into its component pieces to study how the component pieces are study and work.

2.1 Software Requirement Specifications:

Software Requirement Specification is the starting point of software developing activity.

As system grew more complex it became evident that the goal of the entire system cannot be easily comprehended. Hence the needs for the requirements phase are use. The software project is initiated by the client needs, the SRS is the means of translating the ideas of the minds of clients (he input) into a formal document. The purpose of the software requirement specification is to reduce the communication gap between the clients and developers. Software Requirement Specification is the medium through which the client and user needs are accurately specified. It forms the basis of software development. A good SRS should satisfy all the parties of involved in the system.

2.1.1 Purpose:

The main purpose of voice comparer is to compare the voice files of the parents and newly recorded files.

2.1.2 Scope:

The scope of this system is to make the maintainance of the data and comaring file easy and to ease the retrieval of information. As our System supports both desktop mode only it is Compatible. Internet Connection is no need to access this System.

2.1.3 Objective:

The main objective of the system is to provide easy way for comparing voice files and retrieve data .

2.1.4 Existing System:

Existing system is purely OFFLINE based i.e., Admin has to add the data of student with recorded files of parent. If he/she has any issues, they have to report to the admin. Time Management is the major issue, taking actions regarding issues must be as quick as possible.

2.1.5 Proposed System:

The Proposed System is a newly created system , which is purely Offline-based. The Access to this System is granted to Administrator only.

2.1.6 Functional Requirements:

- Administrator only has the ability to Login.
- Admin can add newly appointed students information.

- Admin has the ability to update the Database.
- Admin has the ability to modify the details students if requested by them.
- Admin can view the details of students and voice files.

2.1.7 Non Functional Requirements:

- User Interface should be compatible to python , KIVY Software should support the OS and Database of the User.
- **Availability**: The application is available to all the intended users, all the time based on the Network Availability.
- **Maintainability**: Issues that have been solved can be deleted from the database so as to maintain less complexity.
- **Implementation:** This System can be easily implemented and has scope for making future changes easily, since the system is developed by using the feature of Modularity.

2.1.8 Software Requirements:

- PYTHON
- KIVY
- TENSORFLOW
- MYSQL
- LIBROSA.
- SCIPY
- PYTTSX3

2.1.9 Hardware Requirements:

- Desktop Computers
- Keyboard.
- Mouse.
- Minimum 4GB RAM.
- Intel processor and above.
- Minimum 256GB Hard Disk.

3.SYSTEM DESIGN

Object Oriented Design is concerned with developing an object oriented model of a software system to implement the identified requirements. It is the process of defining the components, interfaces, objects, classes, Attributes and operations that will satisfy the requirements.

The designer's goal is how the outputs to be produced and in what format samples of output are also presented. The processing phases are handled through the program construction and testing.

The importance of software design can be stated in a single word "QUALITY". Design provides us with representations of software that can be accessed for quality. Design is the only way that can be able to accurately translate a customer's requirements into finished software product or system without design risk.

Object oriented design can yield the following benefits:

- **MAINTAINABILITY:** Through simplified mapping to the problem domain, which provides for less analysis effort, less complexity in system design, easier verification by the user.
- **REUSABILITY:** Of the design artifacts, which saves time and cost
- **PRODUCTIVITY:** Gains through direct mapping of features of Object Oriented Programming Languages.

3.1.1 PROBLEM ARCHITECTURE:

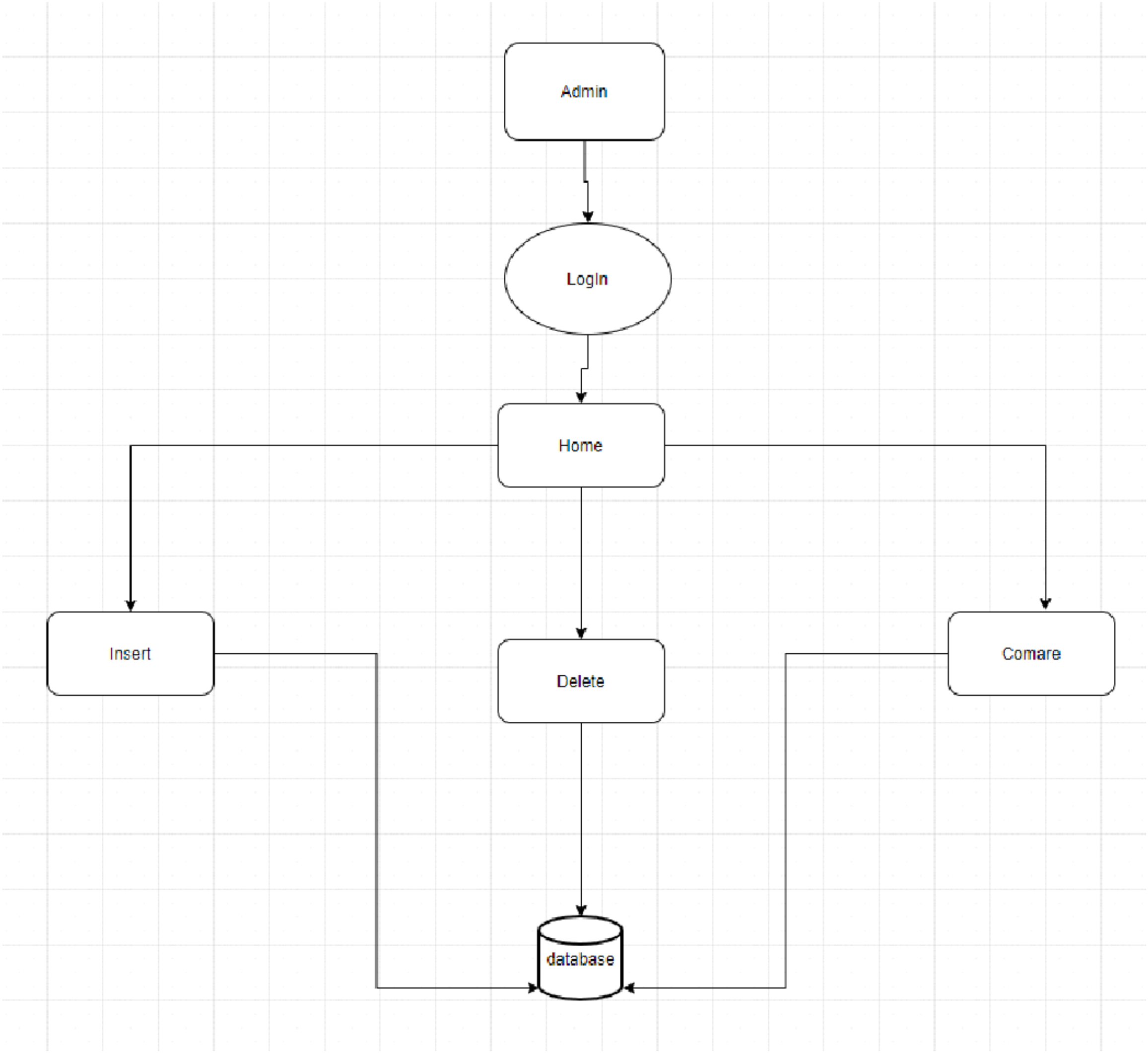


Fig 3.1.1.1 Problem Architecture for Voice Comparer

3.2 UML DESIGN:

3.2.1 DATA FLOW DIAGRAM:

The DFD is also called as bubble chart. It is a simple graphical formalism that can be used to represent a system in terms of the input data to the system, various processing carried out on these data, and the output data is generated by the system. It maps out the flow of the information for any process or system, how data is processed in terms of inputs and outputs. It uses defined symbols like rectangles, circles and arrows to show data inputs, outputs, storage points and the routes between each destination. They can be used to analyze an existing system or model a new one. A DFD can often visually "say" things that would be hard to explain in words and they work for both technical and non-technical.

There are four components in DFD: 1. External Entity
2. Process
3. Data Flow
4. Data Store

1. External Entity:

It is an outside system that sends or receives data, communicating with the system. They are the sources destinations of the information entering and leaving the system. They might be an outside organization or person, a computer system or a business system. They are known as terminators, sources and sinks or actors. They are typically drawn on the edges of the diagram. These are sources and destinations of the system's input and output.

Representation:

Entity

2. Process:

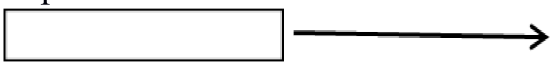
It is just like a function that changes the data, producing an output. It might perform computations or sort data based on logic or direct the dataflow based on business rules.

Representation:

3.Data Flow:

A dataflow represents a package of information flowing between two objects in the data-flow diagram. Data flows are used to model the flow of information into the system, out of the system and between the elements within the system.

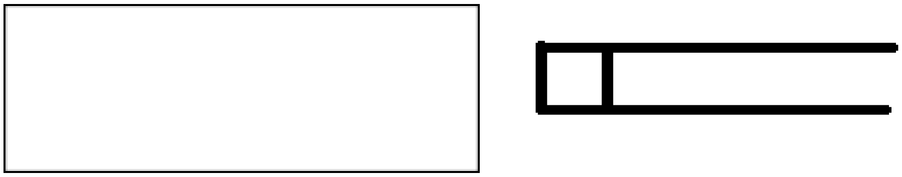
Representation:



4. Data Store:

These are the files or repositories that hold information for later use, such as a database table or a membership form. Each data store receives a simple label.

Representation:



DFD Levels:

A data flow diagram can drive into progressively more detail by using levels. DFD levels are numbered as 0, 1 or 2 and occasionally go to even level 3 or beyond. The necessary level of the detail depends on the scope of the task.

- **DFD Level 0:**

  It is also called as context diagram. It’s a basic overview of the whole system or process being analyzed or modeled. It’s designed to be an at-a-glance view, showing the system as a single high-level process, with its relationship to external entities. It should be easily understood.

- **DFD Level 1:**

  It provides a more detailed breakout of pieces of the Context Level Diagram. The main functions carried out by the system, break-down of the high-level process of the context diagram into its sub-process.

- **DFD Level 2:**

This goes one step deeper into parts of level 1. It may require more text to reach the necessary level of detail about the system’s functioning.

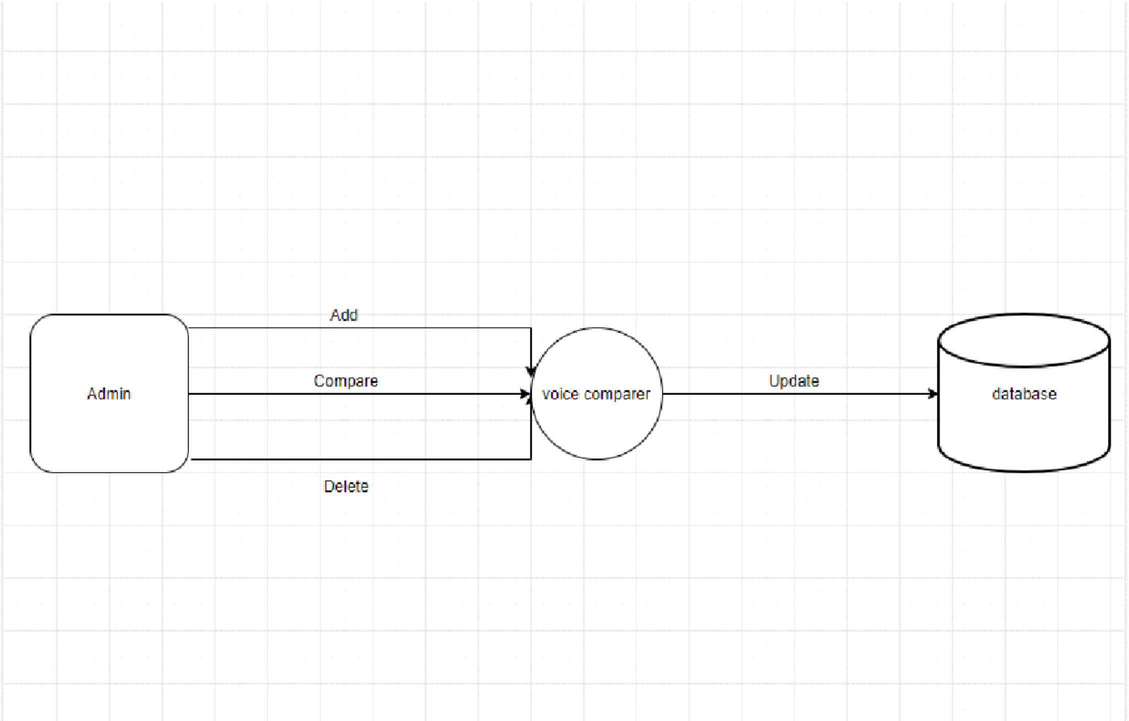


Fig 3.2.1.1 Data Flow Diagram(level-0) for Voice Comparer

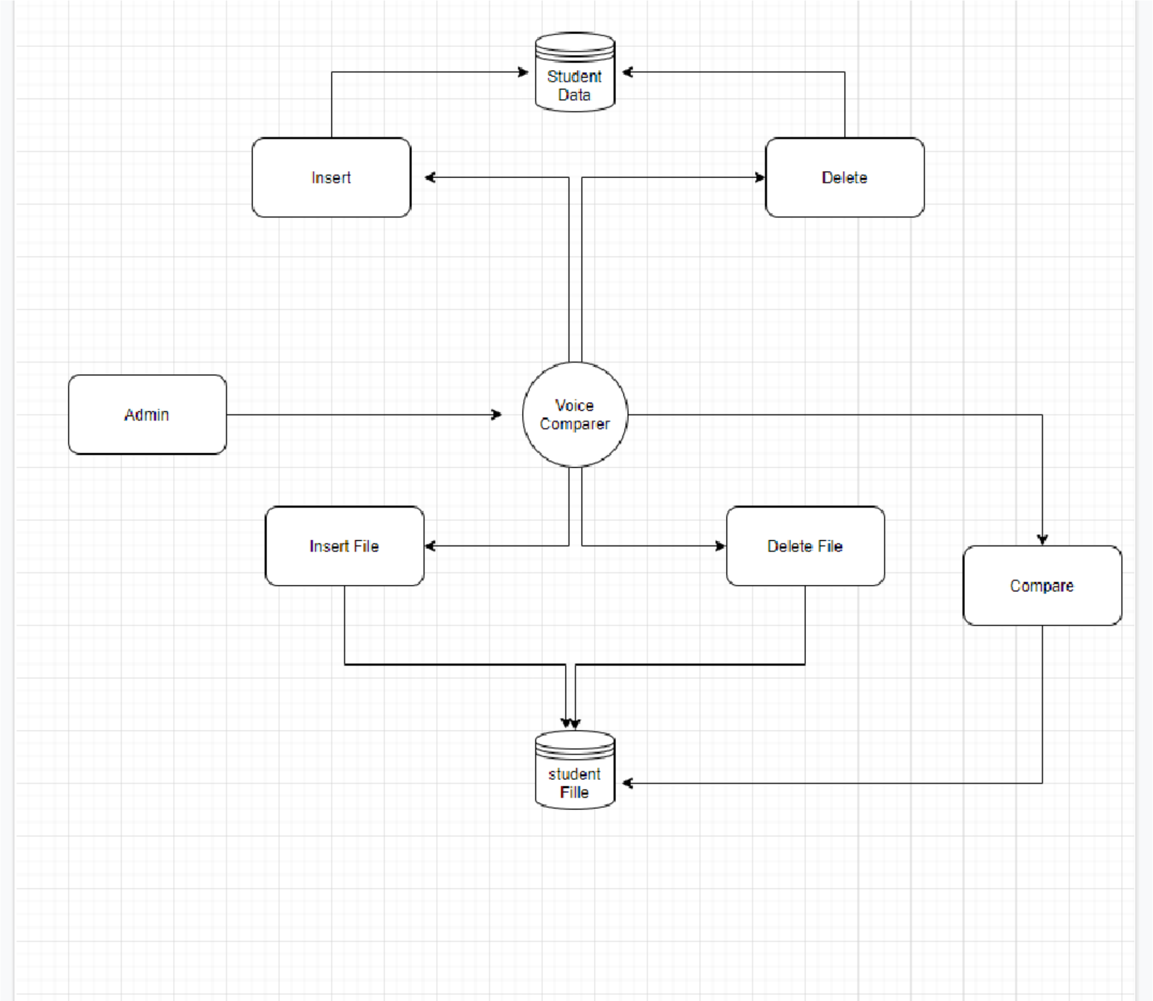


Fig 3.2.1.1 Data Flow Diagram(level-1) for Voice Comparer Achievements and Participation.

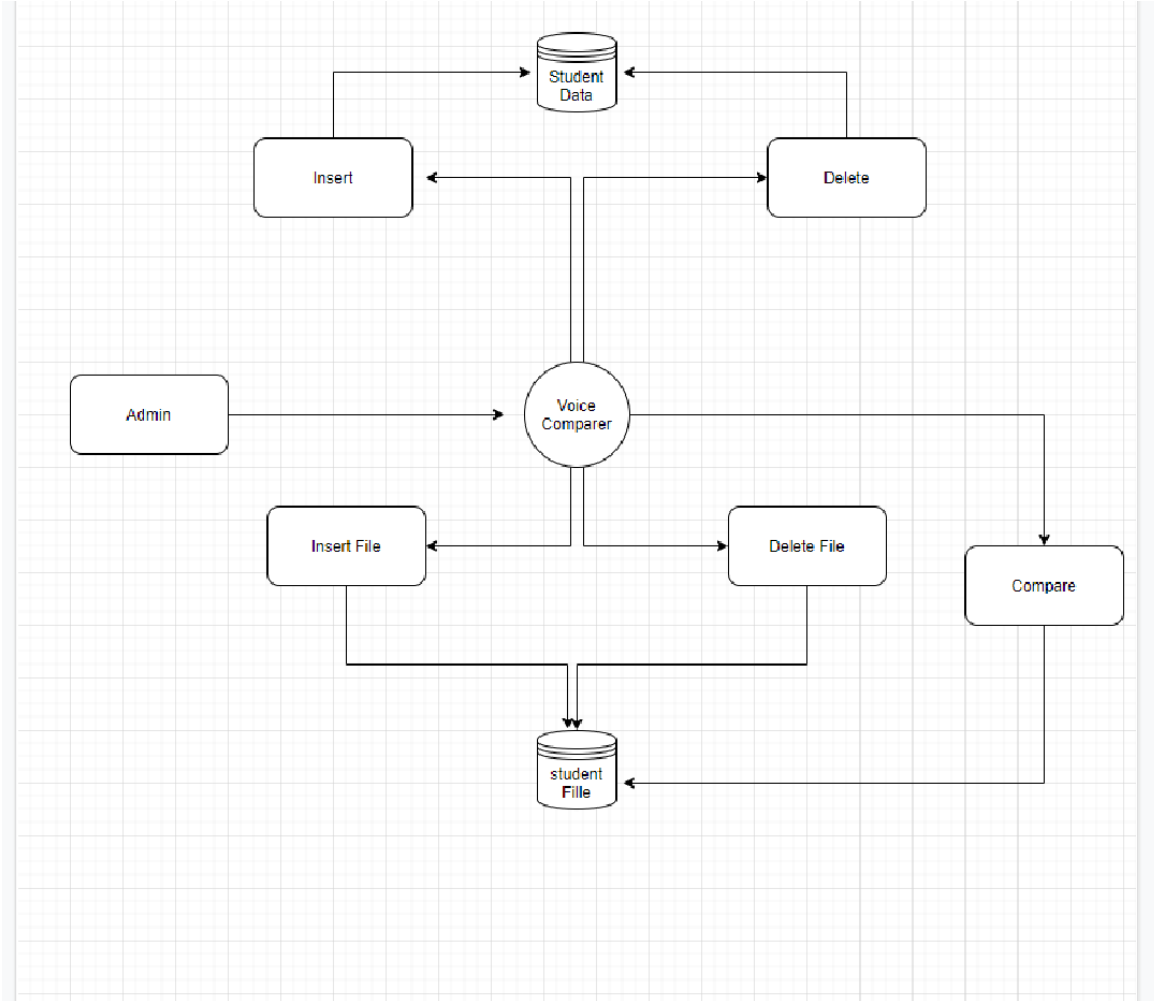


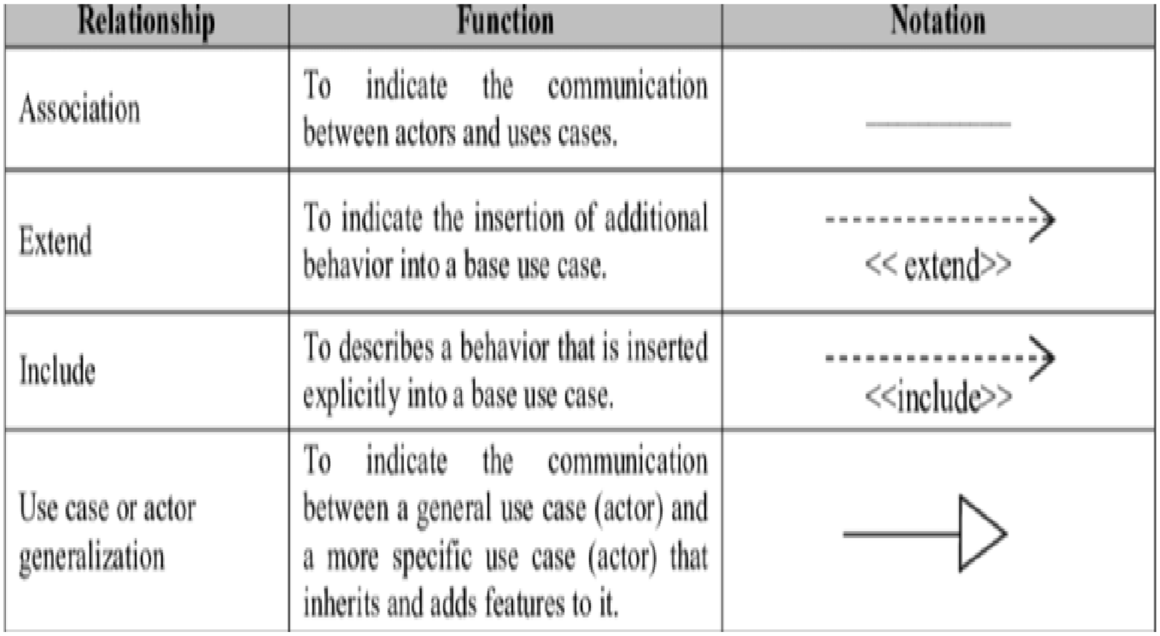
Fig 3.2.1.1 Data Flow Diagram(level-2) for Voice Comparer Achievements and Participation.

3.2.2 Use Case Diagram:

Use Cases are used during Requirement Elicitation and Analysis Phase to represent the functionality of the system. The different roles that the people can fill, when they interact with a system are known as Actors. Use Case describes a function provided by the system that yields a visible result for an Actor.

The identification of Actor and Use Case result in the definition of the boundary of the system, i.e., differentiating the tasks accomplished by the system and the tasks accomplished by its environment. The Actors are outside the boundary of the system, where as the Use Cases are inside the boundary of the system. Use Cases describe the behavior of the system, as seen from Actor’s point of view.

A Use Case can participate in several Relationships as mentioned below:



Relationship	Function	Notation
Association	To indicate the communication between actors and uses cases.	———
Extend	To indicate the insertion of additional behavior into a base use case.	- - - - - - - -> << extend>>
Include	To describes a behavior that is inserted explicitly into a base use case.	- - - - - - - -> <<include>>
Use case or actor generalization	To indicate the communication between a general use case (actor) and a more specific use case (actor) that inherits and adds features to it.	——▷

Table 3.2.2.1 Relationships and their Notation in Use Case Diagrams

Use Case Digrams for Project:

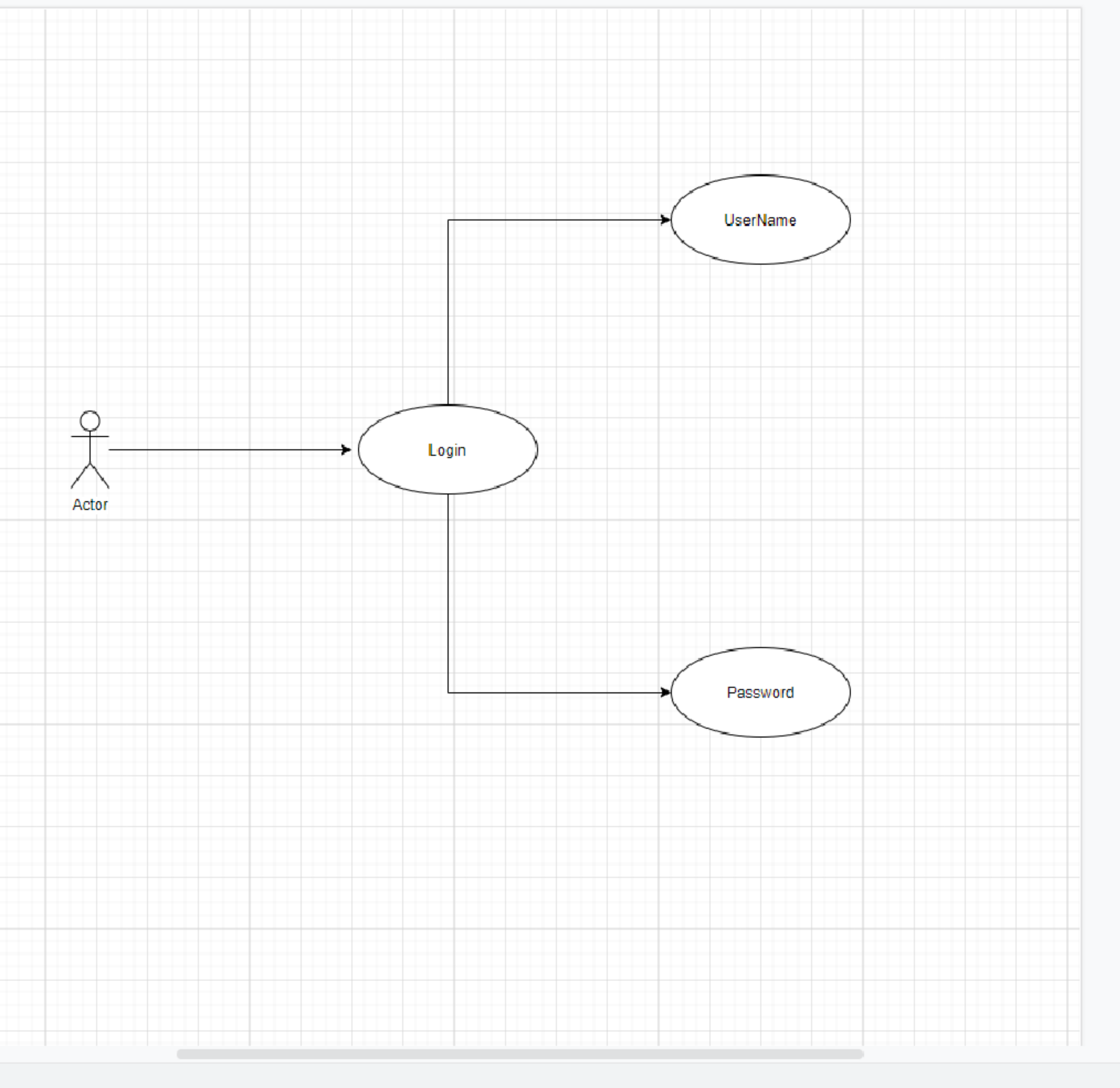


Fig 3.2.2.1 Use Case Diagram for Login

Use Case Name	Login
Participating Actors	Voice Comparer, Admin
Flow of Events	• Login • Select Voice Comparer • Enter Username • Enter Password

	• Select Admin • Enter Username • Enter Password
Entry Condition	Username, Password
Exit Condition	Username
Quality Requirements	-

Fig 3.2.2.2 Use Case Diagram for Voice Comparer Functionalities

Use Case Name	Voice Comparer Functionalities
Participating Actors	Voice Comparer
Flow of Events	• Voice Comparer • Select View Profile • View Details • Select Achievements and Participation • Add details • Upload documents • Select Search Option • Select Year, Dept & Section • Update H-index • Enter value
Entry Condition	Username, Password
Exit Condition	Username
Quality Requirements	-

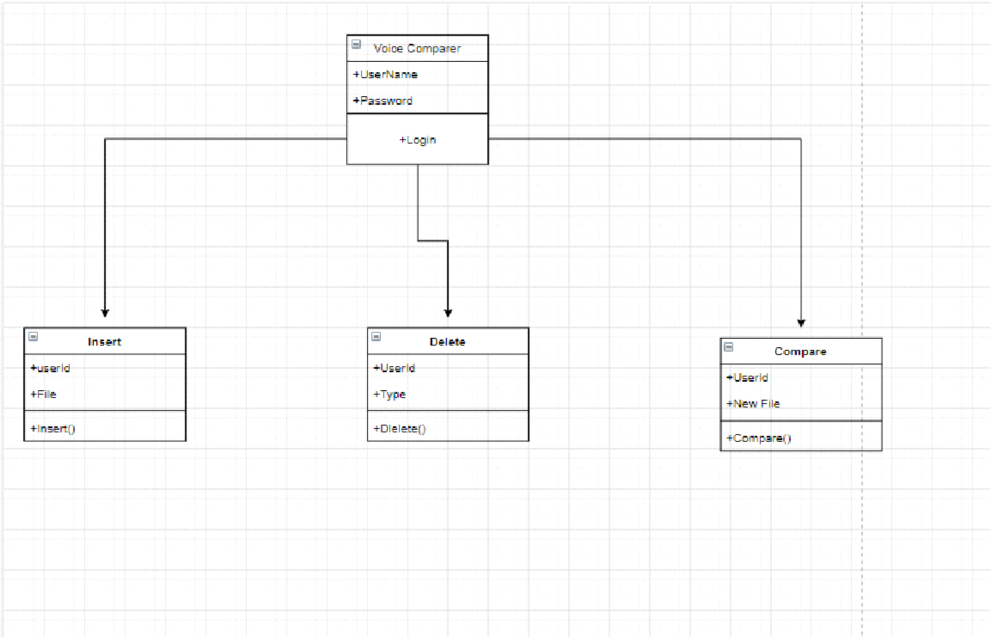


Fig 3.2.2.3 Use Case Diagram for Admin Functionalities

Use Case Name	Administrator Functionalities
Participating Actors	Admin
Flow of Events	• Admin • Select View Details

	• View Details • Select Pending Requests • Examine the Requests • Grant the access accordingly • Approve the uploaded documents • Add new Voice Comparer • Enter their details • Update Database • Remove Voice Comparer
Entry Condition	Username, Password
Exit Condition	Username
Quality Requirements	-

3.2.3 CLASS DIAGRAM:

Class diagram model class structure and contents using design elements such as classes, packages and objects. Class diagram describes 3 perspectives when designing a system-Conceptual, Specification, Implementation. Classes are composed of three things: name, attributes and operations. Class diagrams also display relations such as containment, inheritance, associations etc. The association relationship is most common relationship in a class diagram. The association shows the relationship between instances of classes.

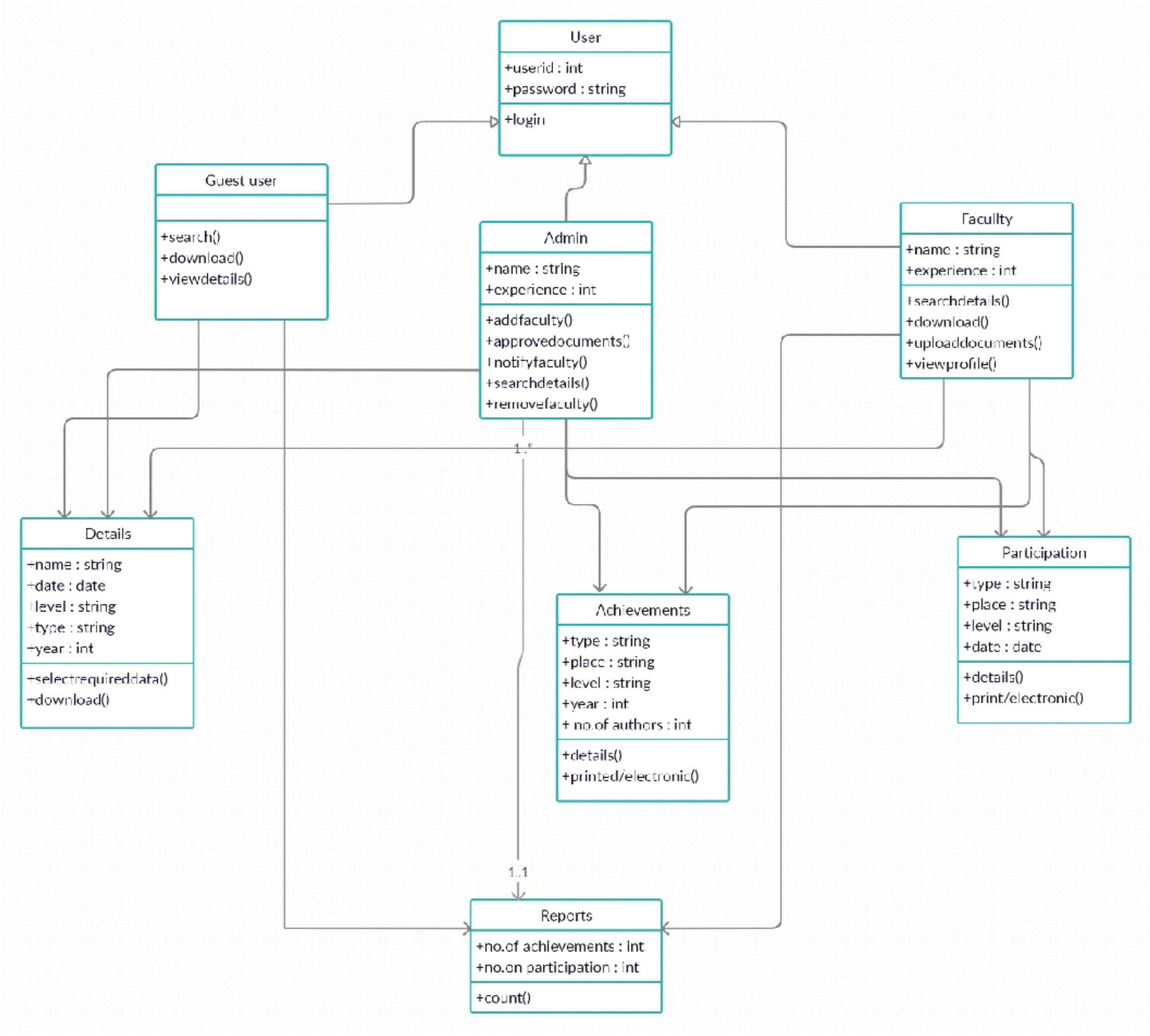


Fig 3.2.3.1 Class Diagram for Voice Comparer Achievements and Participations

3.2.4 COMPONENT DIAGRAM:

Component Diagram describes the organization and wiring of the Physical Components in a system. It can be presented to key project state holders and implementation staff.

Component Diagram can be used:

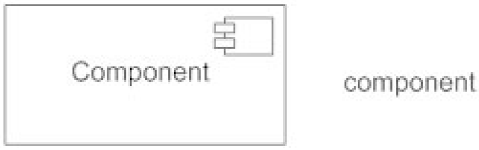
- To model the components of a system.

- To model the database schema.
- To model the executability of an application.
- To model the system source code.

Component Diagram Symbols and Notations are as follows:

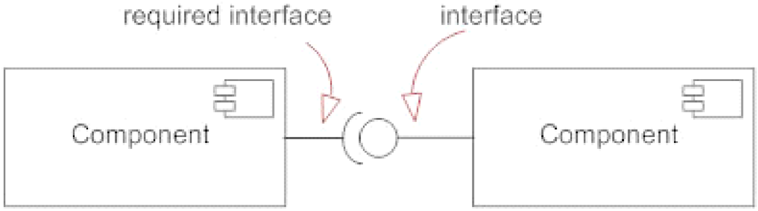
Component:

A component is a logical unit block of the system, a slightly higher abstraction than classes. It is represented as a rectangle with a smaller rectangle in the upper right corner with tabs or the word written above the name of the component to help distinguish it from a class.



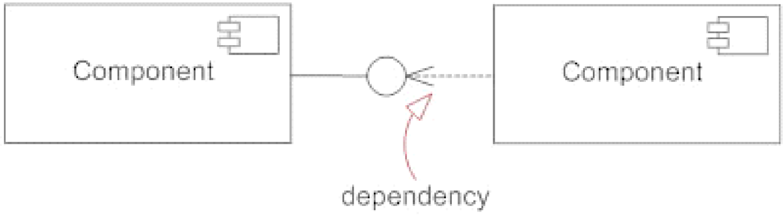
Interface:

An interface (small circle or semi-circle on a stick) describes a group of operations used (required) or created (provided) by components. A full circle represents an interface created or provided by the component. A semi-circle represents a required interface, like a person's input.



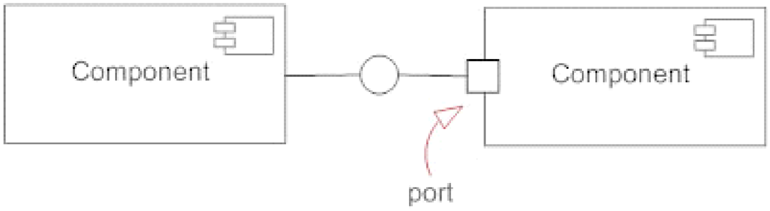
Dependencies:

Draw dependencies among components using dashed arrows.



Port:

Ports are represented using a square along the edge of the system or a component. A port is often used to help expose required and provided interfaces of a component.



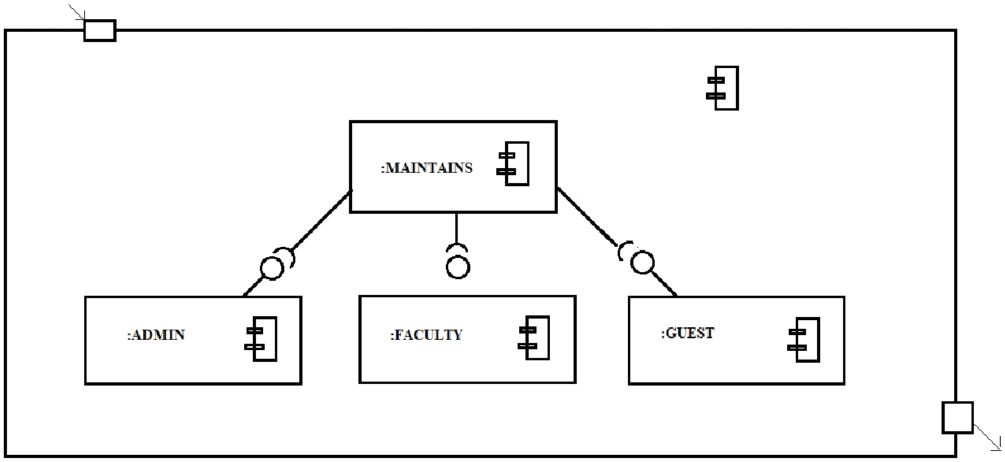


Fig 3.2.4.1 Component Diagram for Voice Comparer Achievements and Participations.

3.2.5 DEPLOYMENT DIAGRAM:

Deployment Diagram is used to visualize the Topology of the physical component of a system, where the software components are deployed.

A Deployment Diagram consists of Nodes and their relationships. Deployment Diagram is used to show how they are deployed in hardware.

These are useful for System Engineers. An efficient Deployment Diagram is necessary as it controls the performance, maintainability and portability.

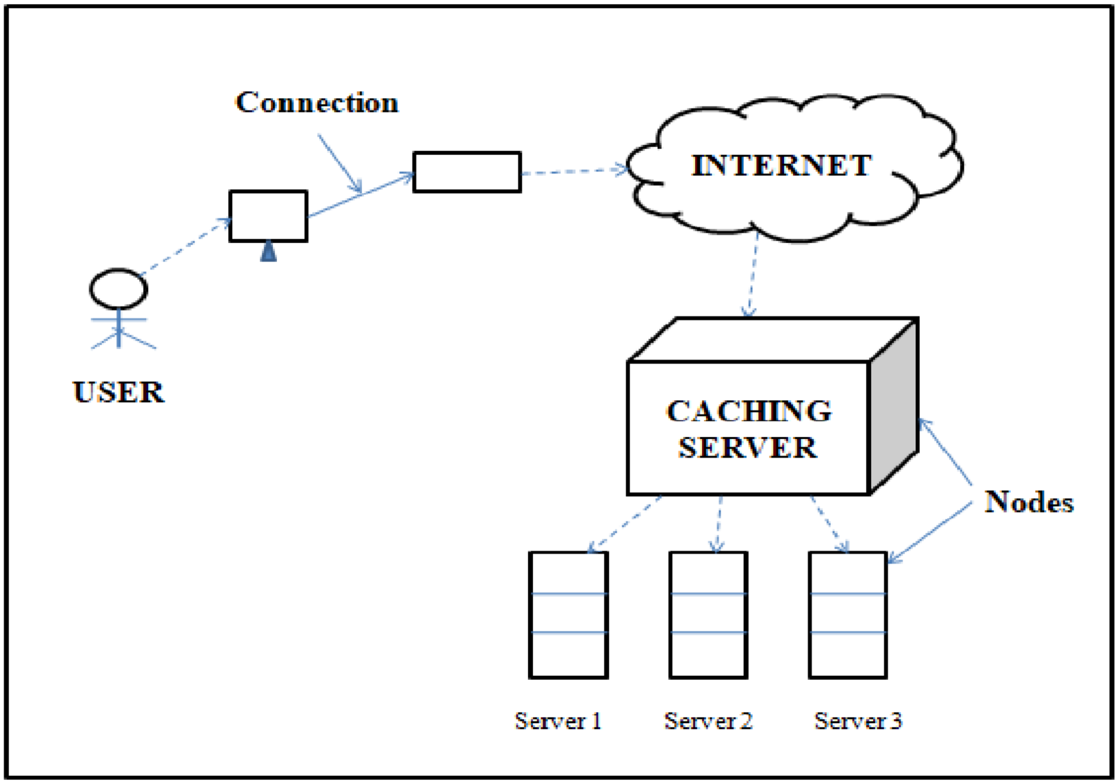

Connection
INTERNET
USER
CACHING SERVER
Nodes
Server 1
Server 2
Server 3

Fig 3.2.9.1 Deployment Diagram for Voice Comparer Achievements and Participaton.

• DATABASE DESIGN

4.1 Database:

A database is an organized collection of data, generally stored and accessed electronically from a computer system. Where databases are more complex they are often developed using formal design and modeling techniques.

The database management system(DBMS) is the software that interacts with end users, applications, and the database itself to capture and analyze the data. The DBMS software additionally encompasses the core facilities provided to administer the database. The sum total of the database, the DBMS and the associated applications can be referred to as a "database system". Often the term "database" is also used to loosely refer to any of the DBMS, the database system or an application associated with the database.

4.2 ER Diagram:

An Entity Relationship Diagram (ERD) is a visual representation of different entities within a system and how they relate to each other.ER-modeling is a data modeling technique used in software engineering to produce a conceptual data model of an information system. Diagrams created using this ER-modeling technique are called Entity-Relationship Diagrams, or ER diagrams or ERDs. So you can say that Entity Relationship Diagrams illustrate the logical structure of databases.

ERDs show entities in a database and relationships between tables within that database. It is essential to have ER-Diagrams if you want to create a good database design. The diagrams help focus on how the database actually works.

ER modeling is one of the most cited papers in the computer software field. Currently the ER model serves as the foundation of many system analysis and design methodologies, computer-aided software engineering (CASE) tools, and repository system.

4.2.1 Elements in ER diagram:

Entity relationship diagrams are used in software engineering during the planning stages of the software project. They help to identify different system elements and their relationships with each other. It is often used as the basis for data flow diagrams or DFD’s as they are commonly known.

The basic elements in ER-Diagrams:

- **Entity:**
  Entities are the "things" for which we want to store information. An entity is a person, place, thing or event. Entity can be represented with Rectangles.

- **Attributes:** Attributes are the data we want to collect for an entity. An attribute is a property, trait, or characteristic of an entity, relationship, or another attribute. Attributes are represented by Oval shapes.

- **Relationships:**

Relationships describe the relations between the entities. ERDs show entities in a database and relationships between tables within that database. It is essential to have ER-Diagrams if you want to create a good database design. The diagrams help focus on how the database actually works.

- **Weak Entity:** A weak entity is an entity that depends on the existence of another entity. In more technical terms it can be defined as an entity that cannot be identified by its own attributes. It uses a foreign key combined with its attributed to form the primary key.

- **Multi-valued Attribute:** If an attribute can have more than one value it is called a multi-valued attribute. It is important to note that this is different from an attribute having its own attributes.

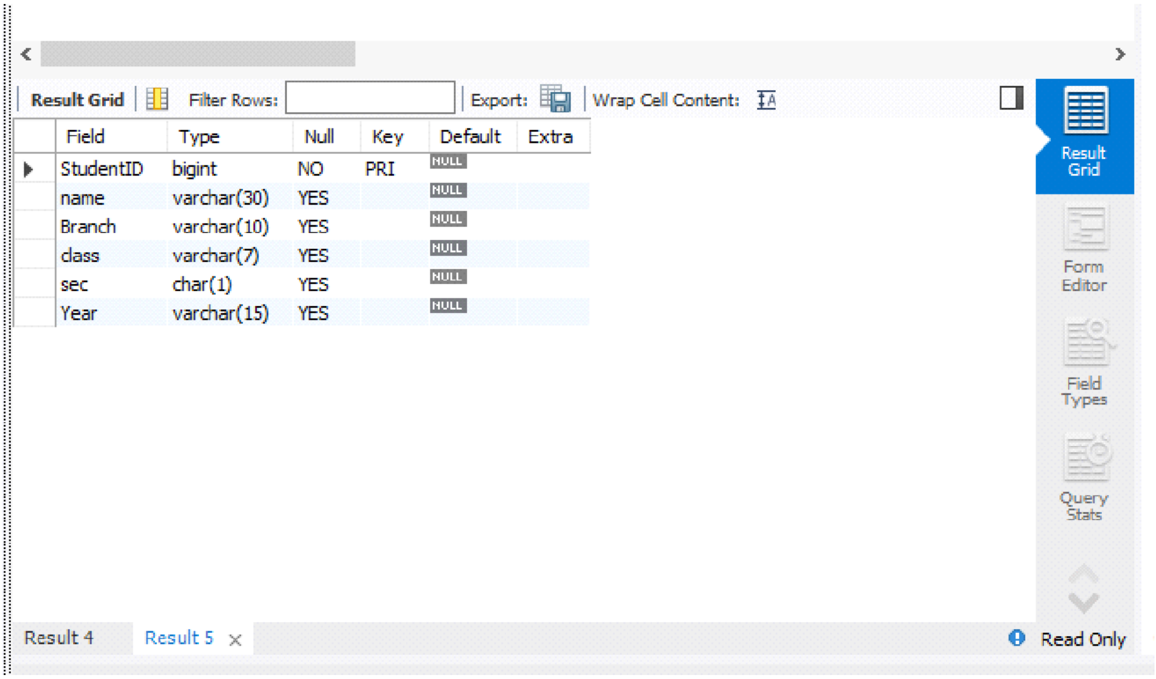
4.2.2 How to Draw ER Diagrams:

Below points show how to go about creating an ER diagram.

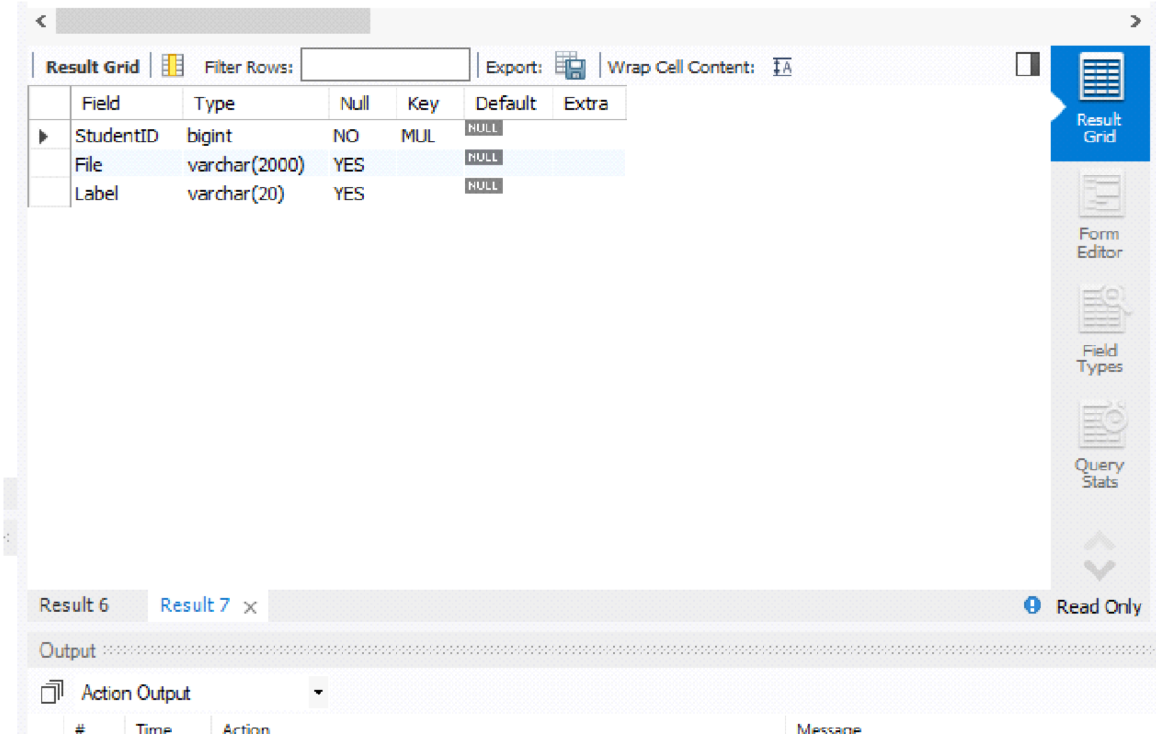
- Identify all the entities in the system. An entity should appear only once in a particular diagram. Create rectangles for all entities and name them properly.

- Identify relationships between entities. Connect them using a line and add a diamond in the middle describing the relationship.
- Add attributes for entities. Give meaningful attribute names so they can be understood easily.

4.3 DATABASE TABLES:



Field	Type	Null	Key	Default	Extra
StudentID	bigint	NO	PRI	NULL	
name	varchar(30)	YES		NULL	
Branch	varchar(10)	YES		NULL	
class	varchar(7)	YES		NULL	
sec	char(1)	YES		NULL	
Year	varchar(15)	YES		NULL	



Field	Type	Null	Key	Default	Extra
StudentID	bigint	NO	MUL	NULL	
File	varchar(2000)	YES		NULL	
Label	varchar(20)	YES		NULL	

- **IMPLEMENTATION**

Implementation is the stage where the theoretical design is turned into a working system. The most crucial stage in achieving a new successful system and in giving confidence on the system for the users that will work efficiently and effectively. The system will be implemented only after through testing and if its found to work according to the specification.

5.1 Overview of Software Used:

Python :

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. ... Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse.

KIVY :

We ship a simple gesture recognizer that you can use to detect various kinds of strokes, such as circles or rectangles. You can train it to detect your own strokes. Kivy Language. The kivy language is used to easily and efficiently describe user interfaces.

MYSQL:

MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed and supported by MySQL AB, which is a Swedish company. MySQL is becoming so popular because of many good reasons –

- MySQL is released under an open-source license. So you have nothing to pay to use it.
- MySQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages.
- MySQL uses a standard form of the well-known SQL data language.

- MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.
- MySQL works very quickly and works well even with large data sets.
- MySQL is very friendly to PHP, the most appreciated language for web development.
- MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB).
- MySQL is customizable. The open-source GPL license allows programmers to modify the MySQL software to fit their own specific environments.

5.2 Coding:

5.2.1 Front End Code:

```
### KIVY libraries
# kivy version - '1.11.1'
# kivy MD version - '2019.0910'
from kivy.config import Config
Config.set('input', 'mouse', 'mouse,multitouch_on_demand')

from kivy.app import App
from kivy.lang import Builder
from kivy.factory import Factory
from kivymd.bottomsheet import MDListBottomSheet, MDGridBottomSheet
from kivymd.button import MDIconButton
from kivymd.dialog import MDDialog
from kivymd.label import MDLabel
from kivymd.list import ILeftBody, ILeftBodyTouch, IRightBodyTouch,
BaseListItem
from kivymd.material_resources import DEVICE_TYPE
from kivymd.navigationdrawer import MDNavigationDrawer,
NavigationDrawerHeaderBase
from kivymd.selectioncontrols import MDCheckbox
from kivymd.snackbar import Snackbar
from kivymd.theming import ThemeManager
from kivymd.spinner import MDSpinner
from kivy.uix.screenmanager import ScreenManager, Screen, FadeTransition
from kivy.core.window import Window
from kivy.properties import ObjectProperty, StringProperty , ListProperty
from kivy.uix.popup import Popup
from kivy.uix.label import Label
from kivy.uix.relativelayout import RelativeLayout
from kivy.uix.gridlayout import GridLayout
from kivy.uix.boxlayout import BoxLayout
from kivy.uix.widget import Widget
from kivy.uix.dropdown import DropDown
from kivy.uix.button import Button
from kivy.uix.checkbox import CheckBox
from kivy.uix.scrollview import ScrollView
from kivy.metrics import dp
### ML Model libraries
import os
import mysql.connector
import csv
import python_speech_features as mfcc
from sklearn import preprocessing
import warnings
import librosa
from keras.optimizers import SGD
warnings.filterwarnings("ignore")
import matplotlib.pyplot as plt
import numpy as np
from keras import layers
from keras import models
from keras import optimizers
from keras import regularizers
from keras import losses
from keras.callbacks import ModelCheckpoint,EarlyStopping
import librosa
import librosa.display
from scipy.fftpack import fft,fftfreq
import tensorflow as tf
from tensorflow.keras.models import Sequential , load_model
from tensorflow.keras.layers import Flatten
from tensorflow.keras.layers import Dense
from tensorflow.keras.layers import Conv2D
from tensorflow.keras.layers import MaxPooling2D
from tensorflow.keras.callbacks import TensorBoard
import IPython.display as ipd
from keras.models import Sequential
from keras.layers import Dense, Dropout, Activation, Flatten
from keras.layers import Convolution2D, MaxPooling2D
from keras.optimizers import Adam
from keras.utils import np_utils
from sklearn import metrics
import pyttsx3
engine = pyttsx3.init()

main_widget_kv = '''
#:import Toolbar kivymd.toolbar.Toolbar
#:import ThemeManager kivymd.theming.ThemeManager
#:import MDNavigationDrawer kivymd.navigationdrawer.MDNavigationDrawer
#:import NavigationLayout kivymd.navigationdrawer.NavigationLayout
#:import NavigationDrawerDivider
kivymd.navigationdrawer.NavigationDrawerDivider
#:import NavigationDrawerToolbar
kivymd.navigationdrawer.NavigationDrawerToolbar
#:import NavigationDrawerSubheader
kivymd.navigationdrawer.NavigationDrawerSubheader
#:import MDCheckbox kivymd.selectioncontrols.MDCheckbox
#:import MDSwitch kivymd.selectioncontrols.MDSwitch
#:import MDList kivymd.list.MDList
#:import OneLineListItem kivymd.list.OneLineListItem
#:import TwoLineListItem kivymd.list.TwoLineListItem
#:import ThreeLineListItem kivymd.list.ThreeLineListItem
#:import OneLineAvatarListItem kivymd.list.OneLineAvatarListItem
#:import OneLineIconListItem kivymd.list.OneLineIconListItem
#:import OneLineAvatarIconListItem kivymd.list.OneLineAvatarIconListItem
#:import MDTextField kivymd.textfields.MDTextField
#:import MDCard kivymd.card.MDCard
#:import MDSeparator kivymd.card.MDSeparator
#:import get_color_from_hex kivy.utils.get_color_from_hex
#:import colors kivymd.color_definitions.colors
#:import SmartTile kivymd.grid.SmartTile
#:import MDSlider kivymd.slider.MDSlider
#:import MDTabbedPanel kivymd.tabs.MDTabbedPanel
#:import MDTab kivymd.tabs.MDTab
#:import MDProgressBar kivymd.progressbar.MDProgressBar
#:import MDAccordion kivymd.accordion.MDAccordion
#:import MDAccordionItem kivymd.accordion.MDAccordionItem
```

```
#:import MDAccordionSubItem kivymd.accordion.MDAccordionSubItem
#:import MDThemePicker kivymd.theme_picker.MDThemePicker
#:import MDBottomNavigation kivymd.tabs.MDBottomNavigation
#:import MDBottomNavigationItem kivymd.tabs.MDBottomNavigationItem

NavigationLayout:
    id: nav_layout
    MDNavigationDrawer:
        id: nav_drawer
        disabled : True
        NavigationDrawerToolbar:
            title: "Navigation Drawer"
        NavigationDrawerIconButton:
            icon: 'checkbox-blank-circle'
            id : logged
            text: "LogIn"
            on_press : app.Present_Screen('LogIn')
            on_release: app.root.ids.scr_mngr.current = 'LogIn_Screen'
        NavigationDrawerIconButton:
            icon: 'checkbox-blank-circle'
            text: "Home"
            on_press : app.Present_Screen('Home')
            on_release: app.root.ids.scr_mngr.current = 'Home_Screen'
        NavigationDrawerIconButton:
            icon: 'checkbox-blank-circle'
            text: "Insert"
            on_press : app.Present_Screen('Insert')
            on_release: app.root.ids.scr_mngr.current = 'Inserting_Screen'
        NavigationDrawerIconButton:
            icon: 'checkbox-blank-circle'
            text: "Delete"
            on_press : app.Present_Screen('Delete')
            on_release: app.root.ids.scr_mngr.current = 'Delete_Screen'
        NavigationDrawerIconButton:
            icon: 'checkbox-blank-circle'
            text: "Compare"
            on_press : app.Present_Screen('Compare')
            on_release: app.root.ids.scr_mngr.current = 'Compare_Screen'
        NavigationDrawerIconButton:
            icon: 'checkbox-blank-circle'
            text: "Add Student"
            on_press : app.Present_Screen('Add Student')
            on_release: app.root.ids.scr_mngr.current = 'Add_Student'
        NavigationDrawerIconButton:
            icon: 'checkbox-blank-circle'
            text: "Delete Student"
            on_press : app.Present_Screen('Delete Student')
            on_release: app.root.ids.scr_mngr.current = 'Del_Student'
        NavigationDrawerIconButton:
            icon: 'checkbox-blank-circle'
            text: "Themes"
            on_release: app.root.ids.scr_mngr.current = 'Theme'
    BoxLayout:
        orientation: 'vertical'
        sm : scr_mngr
        Toolbar:
            id: toolbar
            title: 'Voice Comparer'
            md_bg_color: app.theme_cls.primary_color
            background_palette: 'Primary'
            background_hue: '500'
            left_action_items: [['menu', lambda x: app.root.toggle_nav_drawer()]]
            right_action_items: [['dots-vertical', lambda x:
app.root.toggle_nav_drawer()]]
        ScreenManager:
            id: scr_mngr
            Screen :
                name : 'LogIn_Screen'
                BoxLayout :
                    padding : 20
                    orientation : 'vertical'
                    RelativeLayout :
                        size_hint : 1 , 0.3
                        MDLabel:
                            font_style: 'Title'
                            theme_text_color: 'Primary'
                            text: "Voice Comparer"
                            halign: 'center'
                    RelativeLayout :
                        size_hint : 1 , 0.5
                        BoxLayout:
                            orientation: 'vertical'
                            size_hint_y: None
                            height: self.minimum_height
                            padding: dp(48)
                            spacing: 10
                            MDTextField:
                                id : User
                                hint_text: "Enter UserName"

                            MDTextField:
                                id : Passw
                                hint_text: "Enter Password"
                                password : True

                    RelativeLayout :
                        size_hint : 1 , 0.2
                        AnchorLayout :
                            anchor_x : 'center'
                            anchor_y : 'center'
                            MDRaisedButton:
                                text: "LOG IN"
                                on_release : app.LogInCheck(User.text , Passw.text)


            Screen :
                name : 'Home_Screen'
                ScrollView:
                    do_scroll_x: False
                    BoxLayout:
                        orientation: 'vertical'
                        size_hint_y: None
                        height: dp(1500)
                        padding : dp(20)
                        spacing : dp(10)
                        BoxLayout:
                            MDCard :
                                MDLabel :
                                    bold : True
                                    text: "Voice Comparer"
```

```
                                    halign: 'center'
                                    theme_text_color : 'Primary'
                        BoxLayout:
                            MDCard :
                                BoxLayout :
                                    orientation : 'vertical'
                                    padding: dp(8)
                                    MDLabel :
                                        text: "Insert"
                                        halign: 'center'
                                        theme_text_color : 'Primary'
                                    MDSeparator :
                                        height : dp(1)
                                    MDLabel :
                                        text : " • Enter Student ID "
                                        theme_text_color : 'Primary'
                                    MDLabel :
                                        text : " • Specify how the speaker related to the attached
file"
                                        theme_text_color : 'Primary'
                                    MDLabel :
                                        text : " • Attach File ( *only .wav files )"
                                        theme_text_color : 'Primary'
                        BoxLayout:
                            MDCard :
                                BoxLayout :
                                    orientation : 'vertical'
                                    padding: dp(8)
                                    MDLabel :
                                        bold : True
                                        text: "Delete"
                                        halign: 'center'
                                        theme_text_color : 'Primary'
                                    MDSeparator :
                                        height : dp(1)
                                    MDLabel :
                                        text : " • Enter Student ID and select files that are to be
deleted"
                                        theme_text_color : 'Primary'
                        BoxLayout:
```

```
    MDCard :
        BoxLayout :
            orientation : 'vertical'
            padding: dp(8)
            MDLabel :
                bold : True
                text: "Compare"
                halign: 'center'
                theme_text_color : 'Primary'
            MDSeparator :
                height : dp(1)
            MDLabel :
                text : " • Enter Student ID "
                theme_text_color : 'Primary'
            MDLabel :
                text : " • Attach audio file which is to compare "
                theme_text_color : 'Primary'
            MDLabel :
                text : " • Attached audio file ( *only .wav files) "
                theme_text_color : 'Primary'
BoxLayout:
    MDCard :
        BoxLayout :
            orientation : 'vertical'
            padding: dp(8)
            MDLabel :
                bold : True
                text: "Add Student"
                halign: 'center'
                theme_text_color : 'Primary'
            MDSeparator :
                height : dp(1)
            MDLabel :
                text : " • Attach file ( *only .csv accepted) "
                theme_text_color : 'Primary'
            MDLabel :
                text : " The file have to follow this order "
                theme_text_color : 'Primary'
            MDLabel :
```

```
                                        text : "    • (StudentID , Name , Branch , class , section ,
year of joining- year of ending) "
                                        theme_text_color : 'Primary'
                                    MDLabel :
                                        text : "    • Ex :
317126510001,ABC,CSE,III/IV,A,2017-2021 "
                                        theme_text_color : 'Primary'
                        BoxLayout:
                            MDCard :
                                BoxLayout :
                                    orientation : 'vertical'
                                    padding: dp(8)
                                    MDLabel :
                                        bold : True
                                        text: "Delete Student"
                                        halign: 'center'
                                        theme_text_color : 'Primary'
                                    MDSeparator :
                                        height : dp(1)
                                    MDLabel :
                                        text : " • Enter Student ID / Name / class / Branch /
Section / Year of joining and ending "
                                        theme_text_color : 'Primary'
                                    MDLabel :
                                        text : " • search and activate the Student checkbox which
you want to remove "
                                        theme_text_color : 'Primary'

            Screen :
                name : 'Inserting_Screen'
                BoxLayout :
                    padding : dp(48)
                    orientation : 'vertical'
                    RelativeLayout :
                        size_hint : 1 , 0.7
                        AnchorLayout :
                            anchor_x : 'center'
                            anchor_y : 'center'
                            BoxLayout :
                                orientation : 'vertical'
                                padding : dp(48)
                                spacing : 10
                                MDTextField :
                                    id : StudId_Insert
                                    hint_text : 'Enter Student ID'

                                MDTextField :
                                    id : show_label
                                    hint_text : 'Enter Label ( Father / Mother / Guardian )'
                                BoxLayout :
                                    orientation : 'horizontal'
                                    spacing : 10
                                    MDTextField :
                                        id : Insert_File
                                        hint_text : 'Attach recorded File'
                                        size_hint : .8 , None
                                    MDIconButton :
                                        id : Attach
                                        icon : 'sd'
                                        size_hint : .2 , None
                                        on_release : app.open_FileManager('Inserting_Screen')
                    RelativeLayout :
                        size_hint : 1 , 0.3
                        AnchorLayout :
                            anchor_x : 'center'
                            anchor_y : 'center'
                            MDRaisedButton :
                                text : 'Insert'
                                on_release :
app.Insert_DB(StudId_Insert.text,Insert_File.text,show_label.text)

            Screen :
                name : 'Delete_Screen'
                BoxLayout :
                    padding : dp(48)
                    orientation : 'vertical'
                    RelativeLayout :
                        size_hint : 1 , 0.3
                        AnchorLayout :
                            anchor_x : 'center'
                            anchor_y : 'center'
                            BoxLayout :
                                orientation : 'horizontal'
                                padding : dp(48)
                                spacing : 10
                                MDTextField :
                                    id : SID
                                    hint_text : 'Enter Student ID'
                                    size_hint : .8 , None
                                    required : True
                                MDRaisedButton :
                                    text : 'search'
                                    on_release : app.Del_Sel_Files(SID.text)

                    RelativeLayout :
                        id : rel
                        size_hint : 1 , .5

                    RelativeLayout :
                        size_hint : 1 , 0.2
                        AnchorLayout :
                            anchor_x : 'center'
                            anchor_y : 'center'
                            MDRaisedButton :
                                text : 'Delete'
                                on_release : app.Delete_DB(SID.text)

            Screen :
                name : 'Compare_Screen'
                BoxLayout :
                    padding : dp(48)
                    orientation : 'vertical'
                    RelativeLayout :
                        size_hint : 1 , 0.7
                        AnchorLayout :
                            anchor_x : 'center'
                            anchor_y : 'center'
                            BoxLayout :
                                orientation : 'vertical'
                                padding : dp(48)
```

```
                                spacing : 10
                                MDTextField :
                                    id : StudId_Compare
                                    hint_text : 'Enter Student ID'
                                    required : True
                                BoxLayout :
                                    orientation : 'horizontal'
                                    spacing : 10
                                    MDTextField :
                                        id : Insert_File_Compare
                                        hint_text : 'Attach recorded File'
                                        size_hint : .8 , None
                                    MDIconButton :
                                        id : Attach
                                        icon : 'sd'
                                        size_hint : .2 , None
                                        on_release : app.open_FileManager('Compare_Screen')
                    RelativeLayout :
                        size_hint : 1 , 0.3
                        AnchorLayout :
                            anchor_x : 'center'
                            anchor_y : 'center'
                            MDRaisedButton :
                                text : 'Compare'
                                on_release : app.Compare_DB(StudId_Compare.text ,
Insert_File_Compare.text)

            Screen :
                name : 'Add_Student'
                BoxLayout :
                    orientation : 'vertical'
                    padding : 10
                    RelativeLayout :
                        size_hint : 1 , 0.4
                        AnchorLayout :
                            anchor_x : 'center'
                            anchor_y : 'center'
                            BoxLayout :
                                padding : 10
                                orientation : 'horizontal'
                    spacing : 10
                    MDTextField :
                        id : Insert_Stud
                        hint_text : 'Attach File'
                        size_hint : .8 , None
                    MDIconButton :
                        id : Attach
                        icon : 'sd'
                        size_hint : .2 , None
                        on_release : app.open_FileManager('Add_Student')

        RelativeLayout :
            size_hint : 1 , 0.3

        RelativeLayout :
            size_hint : 1 , 0.3
            AnchorLayout :
                anchor_x : 'center'
                anchor_y : 'center'
                MDRaisedButton :
                    text : 'ADD'
                    on_release : app.Add_to_DB(Insert_Stud.text)


Screen :
    name : 'Del_Student'
    BoxLayout :
        padding : dp(48)
        orientation : 'vertical'
        RelativeLayout :
            size_hint : 1 , 0.3
            AnchorLayout :
                anchor_x : 'center'
                anchor_y : 'center'
                BoxLayout :
                    orientation : 'horizontal'
                    padding : dp(48)
                    spacing : 10
                    MDTextField :
                        id : Stu_Det
```

```
                                    hint_text : 'Enter student ID / Name /sec / Branch / class /
year '
                                    size_hint : .8 , None
                                    required : True
                                MDRaisedButton :
                                    text : 'search'
                                    on_release : app.Del_Stud_DB(Stu_Det.text)

                    RelativeLayout :
                        id : rel
                        size_hint : 1 , .5

                    RelativeLayout :
                        size_hint : 1 , 0.2
                        AnchorLayout :
                            anchor_x : 'center'
                            anchor_y : 'center'
                            MDRaisedButton :
                                text : 'Delete'
                                on_release : app.Delete_Student(Stu_Det.text)

            Screen :
                name : 'FileManager'
                BoxLayout :
                    orientation : 'vertical'
                    RelativeLayout :
                        size_hint : 1 , .8
                        FileChooserIconView :
                            id : filechooser
                            multiselect: True


                    BoxLayout :
                        size_hint : 1 , .2
                        orientation : 'horizontal'
                        MDRaisedButton :
                            text : 'Cancel'
                            on_release : app.cancel()
                        MDRaisedButton :
                            id : Load
                            text : 'Load'
                            on_release: app.Load(filechooser.selection)

            Screen:
                name: 'Theme'
                BoxLayout:
                    orientation: 'vertical'
                    size_hint_y: None
                    height: dp(80)
                    center_y: self.parent.center_y
                    MDRaisedButton:
                        size_hint: None, None
                        size: 3 * dp(48), dp(48)
                        center_x: self.parent.center_x
                        text: 'Change theme'
                        on_release: MDThemePicker().open()
                        opposite_colors: True
                        pos_hint: {'center_x': 0.5}
                    MDLabel:
                        text: "Current: " + app.theme_cls.theme_style + ", " +
app.theme_cls.primary_palette
                        theme_text_color: 'Primary'
                        pos_hint: {'center_x': 0.5}
                        halign: 'center'

'''

class KitchenSink(App):
    theme_cls = ThemeManager()
    sm = ObjectProperty(None)
    title = "Voice Comparer"
    previous_screen = ''
    current_screen = ''
    text = ''
    te = ''
    chkref = {}
    Select_Files_To_Del = []
    Selected_Students = []

    def build(self):
        main_widget = Builder.load_string(main_widget_kv)
        self.theme_cls.theme_style = 'Dark'
        print('Build')
        engine.say('Welcome to voice Comparer!!!')
        engine.runAndWait()
        return main_widget

    def Present_Screen(self,text) :
        self.current_screen = text
        print(self.current_screen)
        self.te = ''
        self.chkref = {}
        self.Select_Files_To_Del = []
        self.Selected_Students = []
        pass

    def LogInCheck(self , _user_ , _pass_) :
        if _user_ == 'a' and _pass_ == '' :
            Snackbar(text="You're LogIn successfully!!!" ).show()
            engine.say("You're LogIn successfully!!!")
            engine.runAndWait()
            self.root.ids.scr_mngr.current = 'Home_Screen'
            self.root.ids.nav_drawer.disabled = False
            self.root.ids.logged.disabled = True
        else :
            Snackbar(text="userName or password may be wrong !!!" ).show()
            engine.say("userName or password may be wrong !!!")
            engine.runAndWait()
        pass

    def open_FileManager(self , cur) :
        if cur == 'Inserting_Screen' :
            self.root.ids.filechooser.filters = ['*.wav']
            #self.root.ids.Load.disabled = True
            self.root.ids.filechooser.multiselect = True

        elif cur == 'Compare_Screen' :
            self.root.ids.filechooser.filters = ['*.wav']
            #self.root.ids.Load.disabled = True
            self.root.ids.filechooser.multiselect = False
        else :
            self.root.ids.filechooser.filters = ['*.csv']
            #self.root.ids.Load.disabled = True
        self.root.ids.scr_mngr.current = 'FileManager'
        self.previous_screen = cur
        pass

    def Load(self , selection) :
        String = ''
        print(selection)
        print(len(selection))
        j = 0
        for i in selection :
            String += i
            print(i)
            if j == len(selection) - 1 :
                pass
            else :
                String += ','
                j += 1
        if self.previous_screen == 'Inserting_Screen' :
            print(self.previous_screen)
            self.root.ids.scr_mngr.current = self.previous_screen
            self.root.ids.Insert_File.text = String
            print(' Files to Insert ' + String)
            selection = ''
            String = ''
        elif self.previous_screen == 'Compare_Screen' :
            print(self.previous_screen)
            self.root.ids.scr_mngr.current = self.previous_screen
            self.root.ids.Insert_File_Compare.text = String
            print(' Files to Compare ' + String)
            selection = ''
            String = ''
        else :
            print(self.previous_screen)
            self.root.ids.scr_mngr.current = self.previous_screen
            self.root.ids.Insert_Stud.text = String
            print(' Files to Insert ' + String)
            selection = ''
            String = ''
        pass

    def cancel(self):
        self.root.ids.scr_mngr.current = self.previous_screen
        self.root.ids.Load.disabled = True
        pass

    def Add_to_DB(self,text) :
        filename = text
        db = mysql.connector.connect(host = 'localhost' , user = 'root' , passwd =
'root')
        my = db.cursor()
        #my.execute('create database Voice_Comparer')
        my.execute('use Voice_Comparer')
        try :
            with open(filename) as csvfile:
                ader = csv.reader(csvfile)
                a = 0
                for row in ader:
                    # Inserting into database
                    sql = 'Insert into student values (%s , %s , %s , %s , %s , %s)'
                    values = (row[0] , row[1] , row[2] , row[3] , row[4] , row[5],)
                    sql_ = 'select * from student where StudentID = %s'
                    k = 1
                    my.execute(sql_ , (row[0] ,))
                    myresult = my.fetchall()
                    a += 1
                    if len(myresult) > 0 :
                        k = 0
                    else:
                        k = 1
                    if k == 1 :
                        my.execute(sql , values)
                        print('This record %d is inserted' % a)
                        db.commit()
                    else :
                        print('This record %d is already inserted' % a)
                    print(my.rowcount, "record inserted.")
                    my.execute('select count(*) from student')
                    res = my.fetchone()
                Snackbar(text='Data Added to DataBase').show()
                print('%d rows Presented in The student table ' % res)
        except Exception as e:
            Snackbar(text='File Not Found').show()
            print(e)
        pass

    def get_MFCC(self,i,sr,audio):
        mfccs = librosa.feature.mfcc(y=audio, sr=sr, n_mfcc=40)
        mfccs_processed = np.mean(mfccs.T,axis=0)
        print(i,' - ',mfccs)
        return mfccs_processed

    def Checking(self,chkbox,value) :
        if self.current_screen == 'Delete' :
            if value :
                self.te += str(self.chkref[chkbox])
                self.Select_Files_To_Del.append(self.te)
            else :
                self.Select_Files_To_Del.remove(str(self.chkref[chkbox]))
            print(self.Select_Files_To_Del, ' selected')

        elif self.current_screen == 'Delete Student' :
            if value :
                self.te += str(self.chkref[chkbox])
                self.Selected_Students.append(self.te)
            else :
                self.Selected_Students.remove(str(self.chkref[chkbox]))
            print(self.Selected_Students, ' selected')
        self.te = ''

    def Del_Sel_Files(self , StudId) :
        self.te = ''
        self.chkref = {}
        self.Select_Files_To_Del = []
        db = mysql.connector.connect(host = 'localhost' , user = 'root' , passwd =
'root')
        my = db.cursor()
        my.execute('use Voice_Comparer')
        sql = 'select * from Student_Data_By_Path where StudentId = %s'
        val = (StudId,)
        my.execute(sql,val)
        res = my.fetchall()
        print(len(res))
        inner = ScrollView(size_hint=(1, 1),pos_hint={'center_x': 0, 'center_y': .5})
        grid = GridLayout(cols=1, spacing=10, size_hint_y=None,padding=dp(10))
        grid.bind(minimum_height=grid.setter('height'))
        if len(res) > 0 :
            for row in res :
                print(row[1])
                b = BoxLayout(orientation='horizontal', size_hint=(1,None))
                checkbox = MDCheckbox()
                checkbox.bind(active = self.Checking)
                self.chkref[checkbox] = row[1]
                label = MDLabel(text = row[1])
                b.add_widget(label)
                b.add_widget(checkbox)
                grid.add_widget(b)
            inner.add_widget(grid)
        else :
            inner.add_widget(MDLabel(text='There is no files Here!!!'))
            pass
        popup = Popup(  title='Select Files',
                        size_hint=(1,.8),
                        content=inner,
                        auto_dismiss=True)
        popup.open()

    def Insert_DB(self,StudId,File,show_label):
        db = mysql.connector.connect(host = 'localhost' , user = 'root' , passwd =
'root')
        my = db.cursor()
        my.execute('use Voice_Comparer')
        sql = 'select count(*) from student where StudentId = %s'
        val = (StudId,)
        my.execute(sql,val)
        res = my.fetchall()
        print(File)
```

```
if res[0][0] == 1 :
    Files = list(File.split(","))
    for i in Files :
        if i.endswith('.wav') :
            sql = 'Insert into Student_Data_By_Path values (%s , %s , %s)'
            val = (StudId,i,show_label,)
            my.execute(sql,val,)
            db.commit()
            print(i + ' Inserted')
        else :
            print('Sorry!!! only .wav files accepted')
    Snackbar('Inserted ').show()
    self.root.ids.scr_mngr.current = 'Inserting_Screen'
else :
    Snackbar('student not exist').show()
sql = 'select * from Student_Data_By_Path where StudentID = %s'
val = (StudId,)
path = []
Label = []
my.execute(sql,val,)
res = my.fetchall()
for i in res :
    for rep in range(5) :
        path.append(i[1])
        Label.append(i[2])
set_Labels = set(Label)
set_Labels = list(set_Labels)
Train_audio = []
Train_label = []
epochs = 50
num_labels = len(set_Labels)
if num_labels > 1 :
    for i in path :
        data , sr = librosa.load(i,res_type='kaiser_best')
        Train_audio.append(self.get_MFCC(i,sr,data))
    for i in Label :
        index = set_Labels.index(i)
        Train_label.append(index)
    self.num_labels = len(set_Labels)
    Train_audio = np.array(Train_audio,)
```

```
            Train_audio = Train_audio
            Train_label = np.array(Train_label,dtype=np.int)
            print('Model Preparing : =====>>>>>')
            model = Sequential()
            activation_fn = 'glorot_normal'

model.add(layers.Dense(256,input_shape=Train_audio[0].shape,activation='tanh'))
            model.add(Dropout(.3))
            #model.add(layers.Dense(64,activation='tanh'))
            #model.add(Dropout(.3))
            model.add(layers.Dense(num_labels,init=activation_fn))
            model.add(Activation('softmax'))
            sgd = SGD(lr=0.01, decay=1e-6, momentum=0.9, nesterov=True)
            model.compile(loss='sparse_categorical_crossentropy',
                          optimizer=sgd,
                          metrics=['accuracy'])
            model.summary()
            model.fit(Train_audio,Train_label,epochs=epochs,validation_split=.1)
            model.save(f"{StudId}_.h5")
            for i in res :
                print(i[0])
                print(i[1])
                print(i[2])
            pass

    def Delete_DB(self,StudId):
        db = mysql.connector.connect(host = 'localhost' , user = 'root' , passwd =
'root')
        my = db.cursor()
        my.execute('use Voice_Comparer')
        print(self.Select_Files_To_Del)
        for i in self.Select_Files_To_Del :
            sql = 'delete from Student_Data_By_Path where File = %s '
            val = (i,)
            my.execute(sql,val,)
            db.commit()
            Snackbar(text='Files Deleted').show()
            print(i+' Deleted')
        pass
    def Del_Stud_DB(self,text) :
        self.te = ''
        self.chkref = {}
        self.Selected_Students = []
        db = mysql.connector.connect(host = 'localhost' , user = 'root' , passwd =
'root')
        my = db.cursor()
        my.execute('use Voice_Comparer')
        sql = 'select * from student where StudentId = %s or name = %s or Branch =
%s or class = %s or sec = %s or year = %s'
        print(type(text))
        val = (text,text,text,text,text,text,)
        my.execute(sql,val,)
        res = my.fetchall()
        print(len(res))
        inner = ScrollView(size_hint=(1, 1),pos_hint={'center_x': 0, 'center_y': .5})
        grid = GridLayout(cols=1, spacing=10, size_hint_y=None,padding=dp(10))
        grid.bind(minimum_height=grid.setter('height'))
        if len(res) > 0 :
            for row in res :
                string = str(row[0]) + ' ' + row[1] + ' ' + row[2]+ ' ' + row[3]+ ' ' +
row[4]+ ' ' + str(row[5])
                print(string)
                b = BoxLayout(orientation='horizontal',size_hint=(1,None))
                checkbox = MDCheckbox()
                checkbox.bind(active = self.Checking)
                self.chkref[checkbox] = row[0]
                label = MDLabel(text = string)
                b.add_widget(label)
                b.add_widget(checkbox)
                grid.add_widget(b)
            inner.add_widget(grid)
        else :
            inner.add_widget(MDLabel(text='There is no Students Here!!!'))
            pass
        popup = Popup(  title='Select Files',
                        size_hint=(1,.8),
                        content=inner,
                        auto_dismiss=True)
        popup.open()
    def Delete_Student(self,text) :
        db = mysql.connector.connect(host = 'localhost' , user = 'root' , passwd =
'root')
        my = db.cursor()
        my.execute('use Voice_Comparer')
        print(self.Selected_Students)
        for i in self.Selected_Students :
            sql = 'delete from Student_Data_By_Path where StudentID = %s '
            val = (i,)
            my.execute(sql,val,)
            db.commit()
            sql = 'delete from student where StudentID = %s '
            val = (i,)
            my.execute(sql,val,)
            db.commit()
            sql = 'select * from student '
            my.execute(sql,)
            res = my.fetchall()
            for j in res :
                print(j)
        pass

    def Compare_DB(self,StudId,File) :
        db = mysql.connector.connect(host = 'localhost' , user = 'root' , passwd =
'root')
        my = db.cursor()
        my.execute('use Voice_Comparer')
        sql = 'select * from Student_Data_By_Path where StudentId = %s'
        val = (StudId,)
        my.execute(sql,val,)
        res = my.fetchall()
        if len(res) > 0 :
            self.Compare_Res(StudId,File)
        else :
            print('Please Enter the Student ID correctly...')
            inner = ScrollView(size_hint=(1, 1),pos_hint={'center_x': 0, 'center_y': .5})
            inner.add_widget(MDLabel(text='There is No Files here!!!'))
            popup = Popup(  title='Select Files',
                            size_hint=(.8,.8),
                            content=inner,
                            auto_dismiss=True)
        pass

    def Compare_Res(self,StudId,Test_File) :
        db = mysql.connector.connect(host = 'localhost' , user = 'root' , passwd =
'root')
        my = db.cursor()
        my.execute('use Voice_Comparer')
        sql = 'select * from Student_Data_By_Path where StudentID = %s'
        val = (StudId,)
        Label = []
        my.execute(sql,val,)
        res = my.fetchall()
        for i in res :
            for rep in range(5) :
                Label.append(i[2])
        set_Labels = set(Label)
        set_Labels = list(set_Labels)
        content = BoxLayout(orientation='vertical',padding=20,size_hint=(1,1))
        model = load_model(f"{StudId}_.h5")
        audio = []
        Files = list(Test_File.split(","))
        Test_File = Files[0]
        print(Test_File)
        try :
            Match_Perc = 95
            data , sr = librosa.core.load(Test_File,res_type='kaiser_best')
            audio.append(self.get_MFCC(Test_File,sr,data))
            audio = np.array(audio)
            pred = model.predict(audio)
            print("Predicted Result : ")
            print(" ==>> " + str(pred) , ' - ' , str(pred.argmax(-1)) ,
set_Labels[pred.argmax(axis=-1)[0]] )
            c = 0
            res = 1
            res_Label = ''
            for i in pred[0] :
                string = set_Labels[c] + "'s Mataching - " + str(i*100) + '%'
                print(string)
                if i*100 > res :
                    res = i*100
                    res_Label = set_Labels[c]
                c += 1
                content.add_widget(MDLabel(text=string , theme_text_color='Primary'))
            if res > Match_Perc :
                content.add_widget(MDLabel(text=' • It is not a fake call It Matches with
' + res_Label + ' voice', theme_text_color='Primary'))
            else :
                content.add_widget(MDLabel(text=' • It is a fake call It is not matching
with any voice', theme_text_color='Primary'))
        except Exception as e :
            if Test_File.endswith('.wav') :
                content.add_widget(MDLabel(text="+e))
            else :
                content.add_widget(MDLabel(text=' • The File format is not acceptable
.wav only acceptable '))
        popup = Popup(  title='Percentage of matching ',
                        size_hint=(.8,.5),
                        content=content)
        popup.open()

if __name__ == '__main__':
    KitchenSink().run()
```

BackEnd Code :

```
import mysql.connector
import librosa

import base64

db = mysql.connector.connect(host = 'localhost' , user = 'root' , passwd = 'root')

my = db.cursor()

#my.execute('create database Voice_Comparer')

#my.execute('show databases')

my.execute('use Voice_Comparer')
```

```
try :

    my.execute('create table Student (StudentID BIGINT NOT NULL , name varchar(30) , Branch varchar(10) ,class varchar(7) , sec char(1) , Year varchar(15) , PRIMARY KEY (StudentID) )')
except Exception as e:
    print('already Created')

try:
    my.execute('create table Student_Data_By_Path (StudentID BIGINT NOT NULL , File varchar(2000) , Label varchar(20) , FOREIGN KEY (StudentID) references Student(StudentID))')
    print('created')
except Exception as e:
    print('already Created')
```

6. TESTING

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a product. It provides a way to check the functionality of components, sub assemblies, assemblies and/or a finished product. It is the process of exercising software with the intent of ensuring that the software system meets its requirements and user expectations and does not fail in an unacceptable manner.

Software testing is an important element of the software quality assurance and represents the ultimate review of specification, design and coding. The increasing feasibility of software as a system and the cost associated with the software failures are motivated forces for well planned through testing.

Testing Objectives:

These are several rules that can save as testing objectives they are:

- Testing is a process of executing program with the intent of finding an error.
- A good test case is one that has a high probability of finding an undiscovered error.

6.1 Types of Testing

In order to make sure that the system does not have errors, the different levels of testing strategies that are applied at differing phases of software development are:

6.1.1 Unit Testing

Unit Testing is done on individual modules as they are completed and become executable. It is confined only to the designer's requirements. Unit testing is different from and should be preceded by other techniques, including:

- Inform debugging
- Code debugging

Each module can be tested using the following two strategies:

Black Box Testing

In this strategy some test cases are generated as input conditions that fully execute all functional requirements for the program. This testing has been used to find error in the following categories:

- Incorrect or missing functions.
- Interface errors.
- Errors in data structure or external database access.
- Performance Error.
- Initialization and termination errors.
- In this testing only the output is checked for correctness.
- The logical flow of the data is not checked.

White Box Testing

In this the test cases are generated on the logic of each module by drawing flow graphs of that module and logical decisions are tested on all cases. It has been used to generate the test cases in the following cases:

- Guarantee that all independent paths have been executed.
- Execute all loops at their boundaries and within their operational bounds.
- Execute internal data structures to ensure their validity.

6.1.2 Integration Testing

Integration testing ensures that software and subsystems work together a whole. It tests the interface of all the modules to make sure that the modules behave properly when integrated together. It is typically performed by developers, especially at lower, module-to-module level. Testers become involved at the higher levels.

6.1.3 System Testing

Involves in house testing of entire system before delivery to the user. The aim is to satisfy the user, the meets all the requirements of the client's

specifications. It is conducted by the testing organization if a company has one. Test data may range from hand generated to production.
Requires test scheduling to plan and organize:

- Inclusion of changes/fixes.
- Test data to use.

One common approach is graduated testing: as system testing progresses and (hopefully) fewer and fewer defects are found, the code is frozen for testing for increasingly longer time periods.

6.1.4 Acceptance Test

It is a pre-delivery testing in which entire system is tested at client's site on real world data to find errors.

User Acceptance Test (UAT)

"**Beta Testing**": Acceptance testing in the customer environment.

Requirements traceability:

- Match requirements to test cases.
- Every requirement ha to be cleared by at least one test case.
- Display in a matrix of requirements vs. test case

- **Test Cases**

In general, a test case is a set of test data and test program and their expected results. A test case in software engineering normally consists of unique identifier, requirement references from a design specification, preconditions, events, a series of steps (also known as actions) to follow, input, output and it validates one or more system requirements and generates a pass or fail.

TEST CASES FOR PROJECT:

In general a test case is a set of test data and test programs and their expected results. A test case in software engineering normally consists of a unique identifier, requirement references from a design specification, pre conditions, events, a series of steps (also known as actions) to follow input, output and it validates one or more system requirements and generates a pass or fail.

• ERROR REPORT:

TEST
CASE
ID
OBJECTIVE
STEPS
INPUT DATA
EXPECTED OUTPUT
ACTUAL OUTPUT
STATUS
TC-1
LOGIN With
Invalid credentials
1.Enter InValid credentials
2.click on LogIn
UN : admin
Pass : admin
Snackbar shows
‘You’re logged in successfully!!!’
Snackbar shows
‘Username or password may be wrong’
PASS
TC-2
LOGIN With
valid credentials
1.Enter valid credentials
2.click on LogIn
UN : admin
Pass : anits

Snackbar shows

‘You’re logged in successfully!!!’

Snackbar shows

‘Username or password may be wrong’

PASS

TC-3

Add New Student

Insert File

Attach File Location

Snackbar shows ‘Data Inserted’

Snackbar shows ‘Data Inserted’

PASS

TEST

CASE

ID

OBJECTIVE

STEPS

INPUT DATA

EXPECTED OUTPUT

ACTUAL OUTPUT

STATUS

TC-4

Delete Student

Enter ID / Name / Class / Sec / year

Enter ID / Name / Class / Sec / year

Snackbar shows

‘Deleted’

Snackbar shows

‘Deleted’

PASS

TC-5

Insert File

Insert File

File Location

Snackbar shows

‘Inserted’

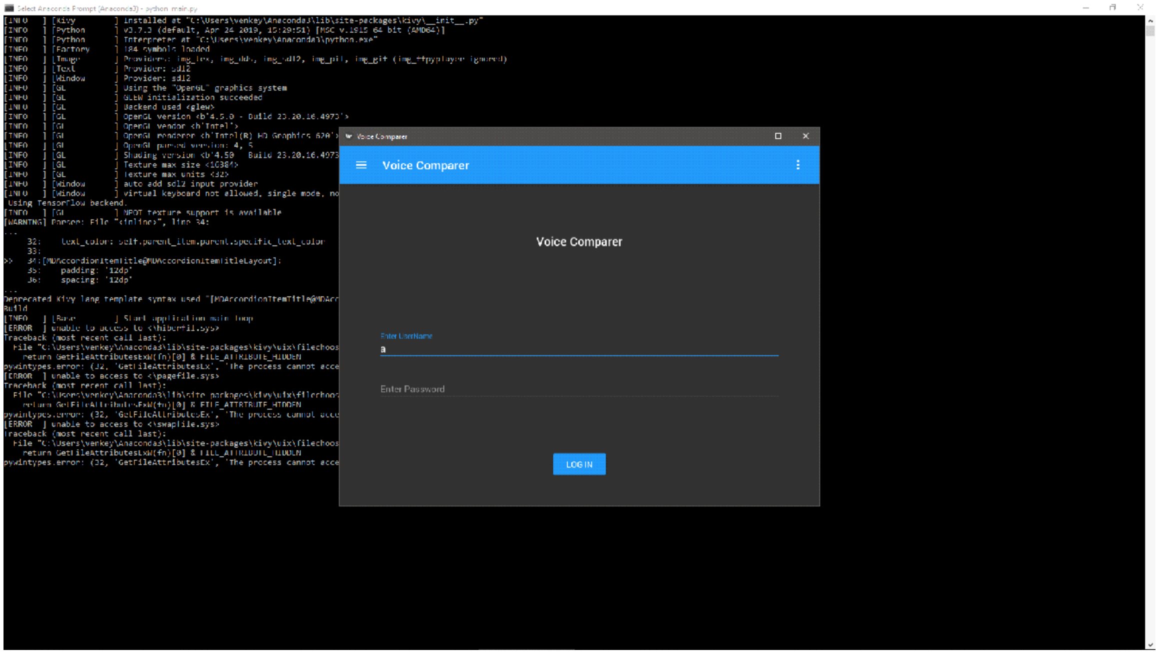
Snackbar shows

‘Inserted’
PASS
TC-6
Delete File
Enter ID
Enter StudentID
Snackbar shows ‘Deleted’
Snackbar shows ‘Deleted’
PASS

7. RESULTS

7.1 Input/Output Design:

LogIn:



Select Anaconda Prompt (Anaconda3) - python main.py

```
[INFO   ] [Kivy        ] Installed at "C:\Users\venkey\Anaconda3\lib\site-packages\kivy\__init__.py"
[INFO   ] [Python      ] v3.7.3 (default, Apr 24 2019, 15:29:51) [MSC v.1915 64 bit (AMD64)]
[INFO   ] [Python      ] Interpreter at "C:\Users\venkey\Anaconda3\python.exe"
[INFO   ] [Factory     ] 184 symbols loaded
[INFO   ] [Image       ] Providers: img_tex, img_dds, img_sdl2, img_pil, img_gif (img_ffpyplayer ignored)
[INFO   ] [Text        ] Provider: sdl2
[INFO   ] [Window      ] Provider: sdl2
[INFO   ] [GL          ] Using the "OpenGL" graphics system
[INFO   ] [GL          ] GLEW initialization succeeded
[INFO   ] [GL          ] Backend used <glew>
[INFO   ] [GL          ] OpenGL version <b'4.5.0 - Build 23.20.16.4973'>
[INFO   ] [GL          ] OpenGL vendor <b'Intel'>
[INFO   ] [GL          ] OpenGL renderer <b'Intel(R) HD Graphics 620'>
[INFO   ] [GL          ] OpenGL parsed version: 4, 5
[INFO   ] [GL          ] Shading version <b'4.50 - Build 23.20.16.4973
[INFO   ] [GL          ] Texture max size <16384>
[INFO   ] [GL          ] Texture max units <32>
[INFO   ] [Window      ] auto add sdl2 input provider
[INFO   ] [Window      ] virtual keyboard not allowed, single mode, no
 Using TensorFlow backend.
[INFO   ] [GL          ] NPOT texture support is available
[WARNING] Parser: File "<inline>", line 34:
...
     32:    text_color: self.parent_item.parent.specific_text_color
     33:
>>   34:[MDAccordionItemTitle@MDAccordionItemTitleLayout]:
     35:    padding: '12dp'
     36:    spacing: '12dp'
...
Deprecated Kivy lang template syntax used "[MDAccordionItemTitle@MDAcc
Build
[INFO   ] [Base        ] Start application main loop
[ERROR  ] unable to access to <\hiberfil.sys>
Traceback (most recent call last):
  File "C:\Users\venkey\Anaconda3\lib\site-packages\kivy\uix\filechoos
    return GetFileAttributesExW(fn)[0] & FILE_ATTRIBUTE_HIDDEN
pywintypes.error: (32, 'GetFileAttributesEx', 'The process cannot acce
[ERROR  ] unable to access to <\pagefile.sys>
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    return GetFileAttributesExW(fn)[0] & FILE_ATTRIBUTE_HIDDEN
pywintypes.error: (32, 'GetFileAttributesEx', 'The process cannot acce
```

Voice Comparer

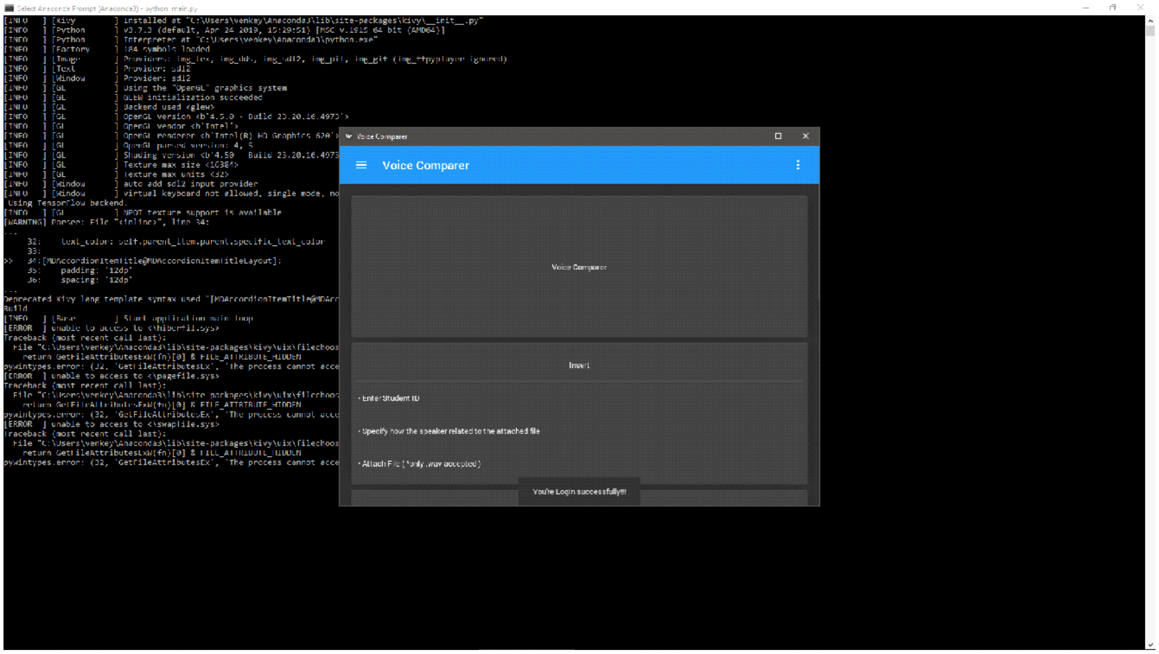
Voice Comparer

Voice Comparer

Enter UserName: a

Enter Password

Home Page :



Select Anaconda Prompt (Anaconda3) - python main.py

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[INFO   ] [GL          ] OpenGL vendor <b'Intel'>
[INFO   ] [GL          ] OpenGL renderer <b'Intel(R) HD Graphics 620'>
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    return GetFileAttributesExW(fn)[0] & FILE_ATTRIBUTE_HIDDEN
pywintypes.error: (32, 'GetFileAttributesEx', 'The process cannot acce
```

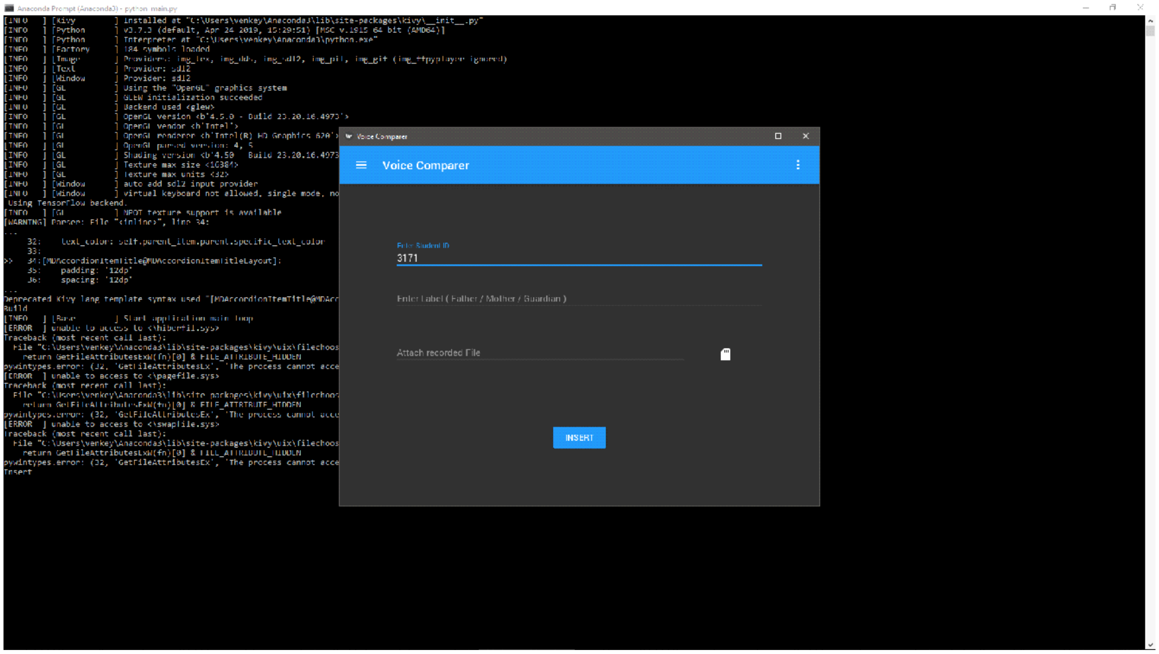
• Enter Student ID

• Specify how the speaker related to the attached file

• Attach File (*only .wav accepted)

You're Login successfully!!!

Insert :



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[INFO   ] [Window      ] Provider: sdl2
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[INFO   ] [GL          ] OpenGL vendor <b'Intel'>
[INFO   ] [GL          ] OpenGL renderer <b'Intel(R) HD Graphics 620'>
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[INFO   ] [GL          ] Shading version <b'4.50 - Build 23.20.16.4973
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[INFO   ] [GL          ] Texture max units <32>
[INFO   ] [Window      ] auto add sdl2 input provider
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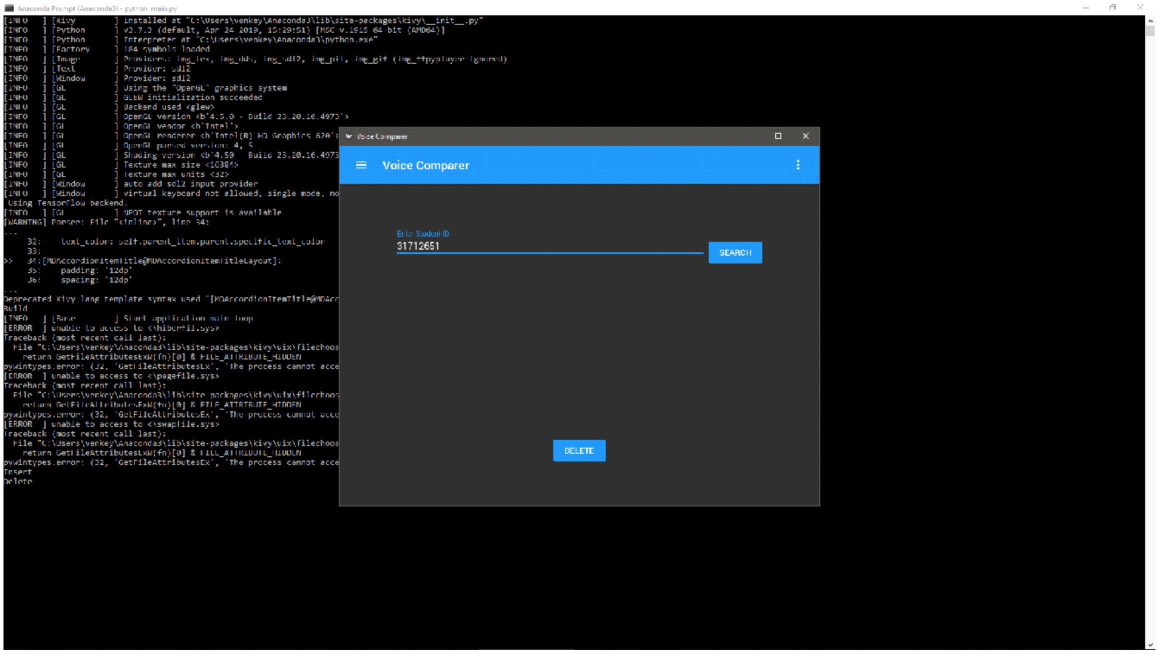
    return GetFileAttributesExW(fn)[0] & FILE_ATTRIBUTE_HIDDEN
pywintypes.error: (32, 'GetFileAttributesEx', 'The process cannot acce
Insert
```

Enter Student ID
3171

Enter Label (Father / Mother / Guardian)

Attach recorded File

Delete :



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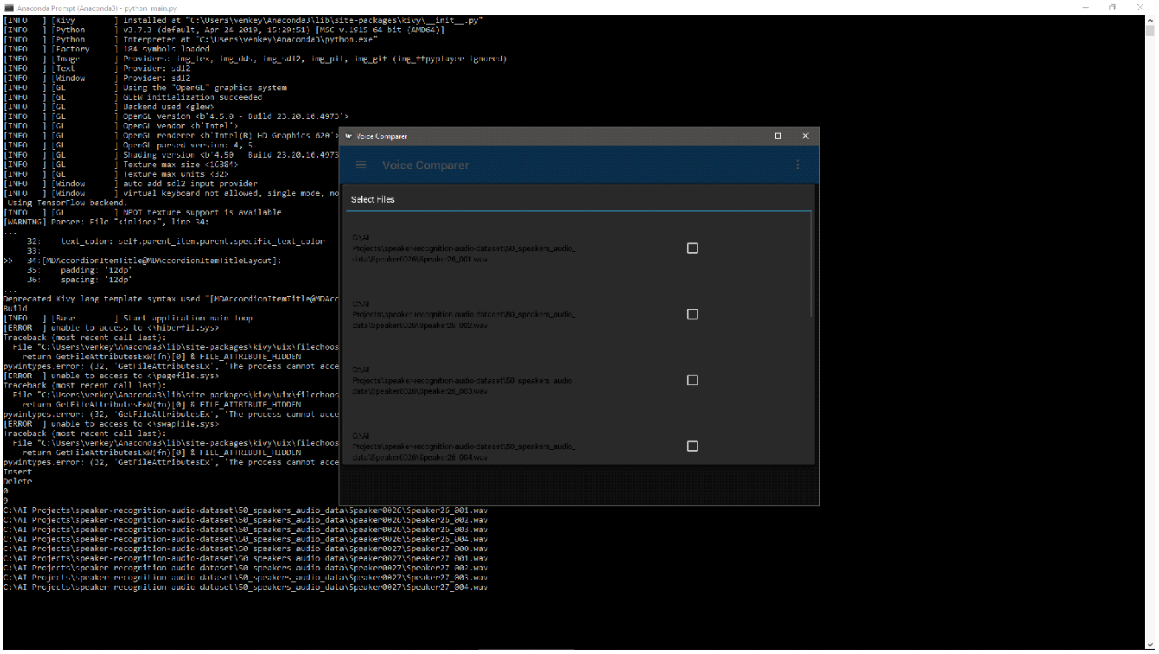
    return GetFileAttributesExW(fn)[0] & FILE_ATTRIBUTE_HIDDEN
pywintypes.error: (32, 'GetFileAttributesEx', 'The process cannot acce
Insert
Delete
```

Enter Student ID
31712651

DeleteFile Selecting :



Anaconda Prompt (Anaconda3) - python main.py

```
[INFO   ] [Kivy        ] Installed at "C:\Users\venkey\Anaconda3\lib\site-packages\kivy\__init__.py"
[INFO   ] [Python      ] v3.7.3 (default, Apr 24 2019, 15:29:51) [MSC v.1915 64 bit (AMD64)]
[INFO   ] [Python      ] Interpreter at "C:\Users\venkey\Anaconda3\python.exe"
[INFO   ] [Factory     ] 184 symbols loaded
[INFO   ] [Image       ] Providers: img_tex, img_dds, img_sdl2, img_pil, img_gif (img_ffpyplayer ignored)
[INFO   ] [Text        ] Provider: sdl2
[INFO   ] [Window      ] Provider: sdl2
[INFO   ] [GL          ] Using the "OpenGL" graphics system
[INFO   ] [GL          ] GLEW initialization succeeded
[INFO   ] [GL          ] Backend used <glew>
[INFO   ] [GL          ] OpenGL version <b'4.5.0 - Build 23.20.16.4973'>
[INFO   ] [GL          ] OpenGL vendor <b'Intel'>
[INFO   ] [GL          ] OpenGL renderer <b'Intel(R) HD Graphics 620'>
[INFO   ] [GL          ] OpenGL parsed version: 4, 5
[INFO   ] [GL          ] Shading version <b'4.50 - Build 23.20.16.4973
[INFO   ] [GL          ] Texture max size <16384>
[INFO   ] [GL          ] Texture max units <32>
[INFO   ] [Window      ] auto add sdl2 input provider
[INFO   ] [Window      ] virtual keyboard not allowed, single mode, no
 Using TensorFlow backend.
[INFO   ] [GL          ] NPOT texture support is available
[WARNING] Parser: File "<inline>", line 34:
...
     32:    text_color: self.parent_item.parent.specific_text_color
     33:
>>   34:[MDAccordionItemTitle@MDAccordionItemTitleLayout]:
     35:    padding: '12dp'
     36:    spacing: '12dp'
...
Deprecated Kivy lang template syntax used "[MDAccordionItemTitle@MDAcc
Build
[INFO   ] [Base        ] Start application main loop
[ERROR  ] unable to access to <\hiberfil.sys>
Traceback (most recent call last):
  File "C:\Users\venkey\Anaconda3\lib\site-packages\kivy\uix\filechoos
    return GetFileAttributesExW(fn)[0] & FILE_ATTRIBUTE_HIDDEN
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pywintypes.error: (32, 'GetFileAttributesEx', 'The process cannot acce
Insert
Delete
0
0
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0026\Speaker26_001.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0026\Speaker26_002.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0026\Speaker26_003.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0026\Speaker26_004.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_000.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_001.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_002.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_003.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_004.wav
```

Voice Comparer

Voice Comparer

Select Files

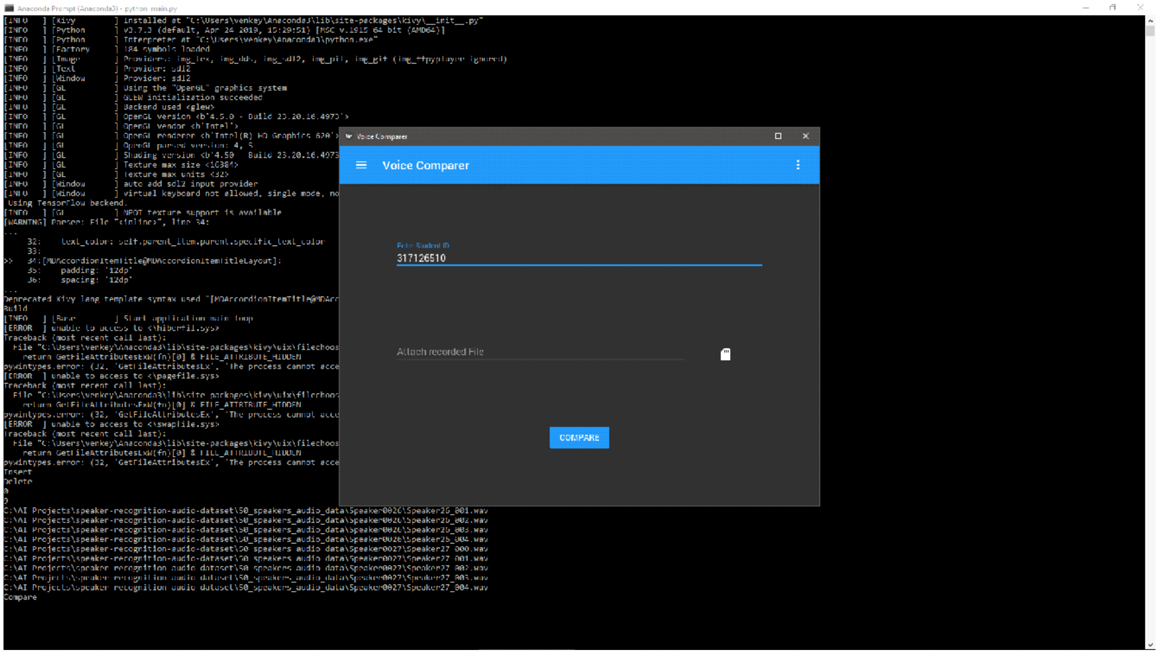
C:\AI
Projects\speaker-recognition-audio-dataset\50_speakers_audio_
data\Speaker0026\Speaker26_001.wav ☐

C:\AI
Projects\speaker-recognition-audio-dataset\50_speakers_audio_
data\Speaker0026\Speaker26_002.wav ☐

C:\AI
Projects\speaker-recognition-audio-dataset\50_speakers_audio_
data\Speaker0026\Speaker26_003.wav ☐

C:\AI
Projects\speaker-recognition-audio-dataset\50_speakers_audio_
data\Speaker0026\Speaker26_004.wav ☐

Compare :



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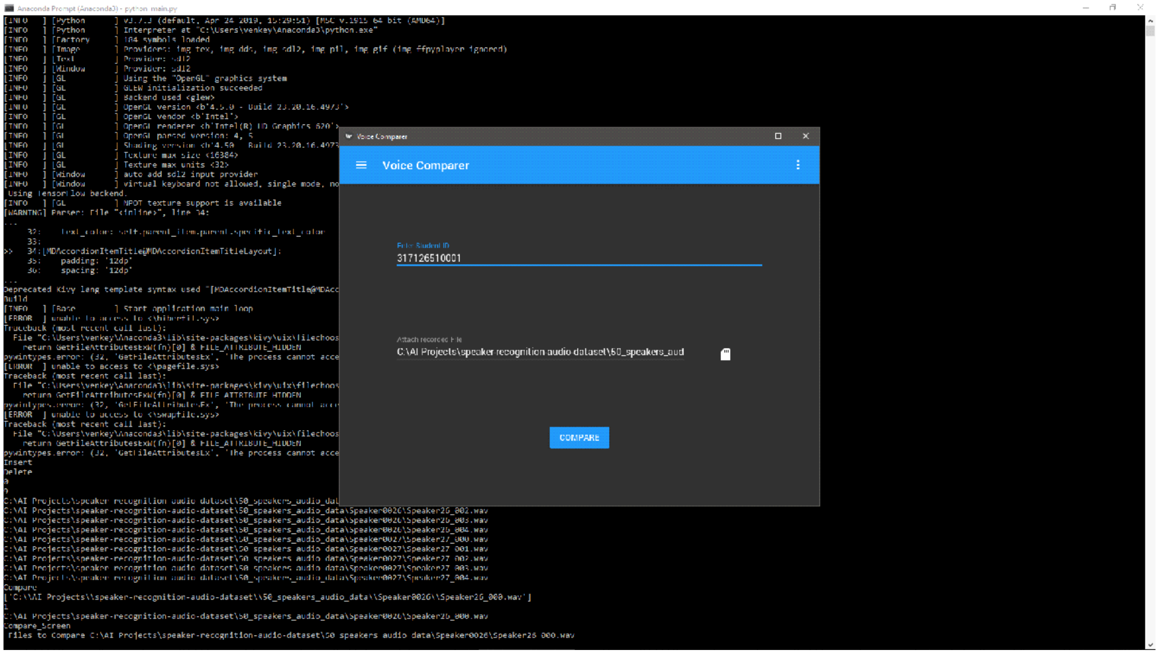
pywintypes.error: (32, 'GetFileAttributesEx', 'The process cannot acce
Insert
Delete
0
0
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0026\Speaker26_001.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0026\Speaker26_002.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0026\Speaker26_003.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0026\Speaker26_004.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_000.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_001.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_002.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_003.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_004.wav
Compare
```

Enter Student ID
317126510

Attach File to Compare :



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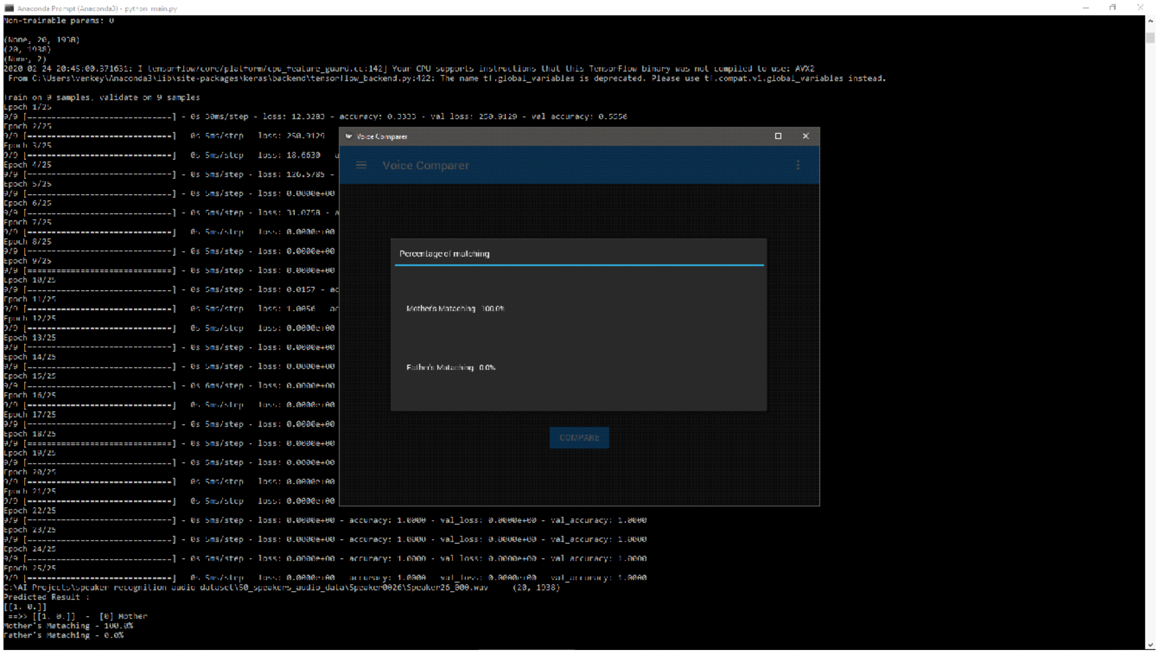
pywintypes.error: (32, 'GetFileAttributesEx', 'The process cannot acce
Insert
Delete
0
0
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_dat
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0026\Speaker26_002.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0026\Speaker26_003.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0026\Speaker26_004.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_000.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_001.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_002.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_003.wav
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0027\Speaker27_004.wav
Compare
['C:\\AI Projects\\speaker-recognition-audio-dataset\\50_speakers_audio_data\\Speaker0026\\Speaker26_000.wav']
1
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0026\Speaker26_000.wav
Compare_Screen
 Files to Compare C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_data\Speaker0026\Speaker26_000.wav
```

Enter Student ID
317126510001

Attach recorded File
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_aud

Compare Result :



```
Non-trainable params: 0

(None, 20, 1938)
(20, 1938)
(None, 2)
2020 02 24 20:45:00.371631: I tensorflow/core/platform/cpu_feature_guard.cc:142] Your CPU supports instructions that this TensorFlow binary was not compiled to use: AVX2
 From C:\Users\venkey\Anaconda3\lib\site-packages\keras\backend\tensorflow_backend.py:422: The name tf.global_variables is deprecated. Please use tf.compat.v1.global_variables instead.

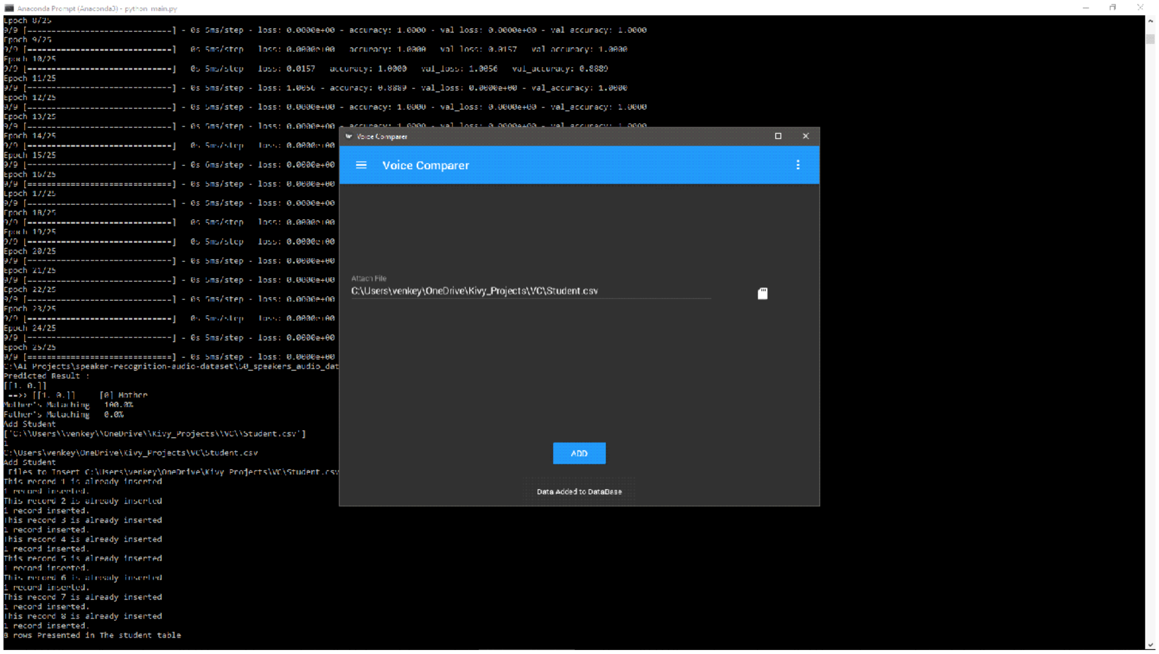
Train on 9 samples, validate on 9 samples
Epoch 1/25
9/9 [------------------------------] - 0s 30ms/step - loss: 12.3283 - accuracy: 0.3333 - val loss: 250.9129 - val accuracy: 0.5556
Epoch 2/25
9/9 [------------------------------] - 0s 5ms/step - loss: 250.9129
Epoch 3/25
9/9 [------------------------------] - 0s 5ms/step - loss: 18.6630   a
Epoch 4/25
9/9 [------------------------------] - 0s 5ms/step - loss: 126.5785 -
Epoch 5/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00
Epoch 6/25
9/9 [------------------------------] - 0s 5ms/step - loss: 31.0758 - a
Epoch 7/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00
Epoch 8/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00
Epoch 9/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 10/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0157 - ac
Epoch 11/25
9/9 [------------------------------] - 0s 5ms/step - loss: 1.0056   ac
Epoch 12/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00
Epoch 13/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00
Epoch 14/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00
Epoch 15/25
9/9 [------------------------------] - 0s 6ms/step - loss: 0.0000e+00
Epoch 16/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00
Epoch 17/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00
Epoch 18/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 19/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00
Epoch 20/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00
Epoch 21/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00
Epoch 22/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 23/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 24/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val loss: 0.0000e+00 - val accuracy: 1.0000
Epoch 25/25
9/9 [------------------------------] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
C:\AI Projects\speaker recognition audio dataset\50_speakers_audio_data\Speaker0026\Speaker26_000.wav     (20, 1938)
Predicted Result :
[[1. 0.]]
 ==>> [[1. 0.]]  -  [0] Mother
Mother's Matching - 100.0%
Father's Matching - 0.0%
```

Percentage of matching

Mother's Matching 100.0%

Father's Matching 0.0%

Add Student Data (.csv) :

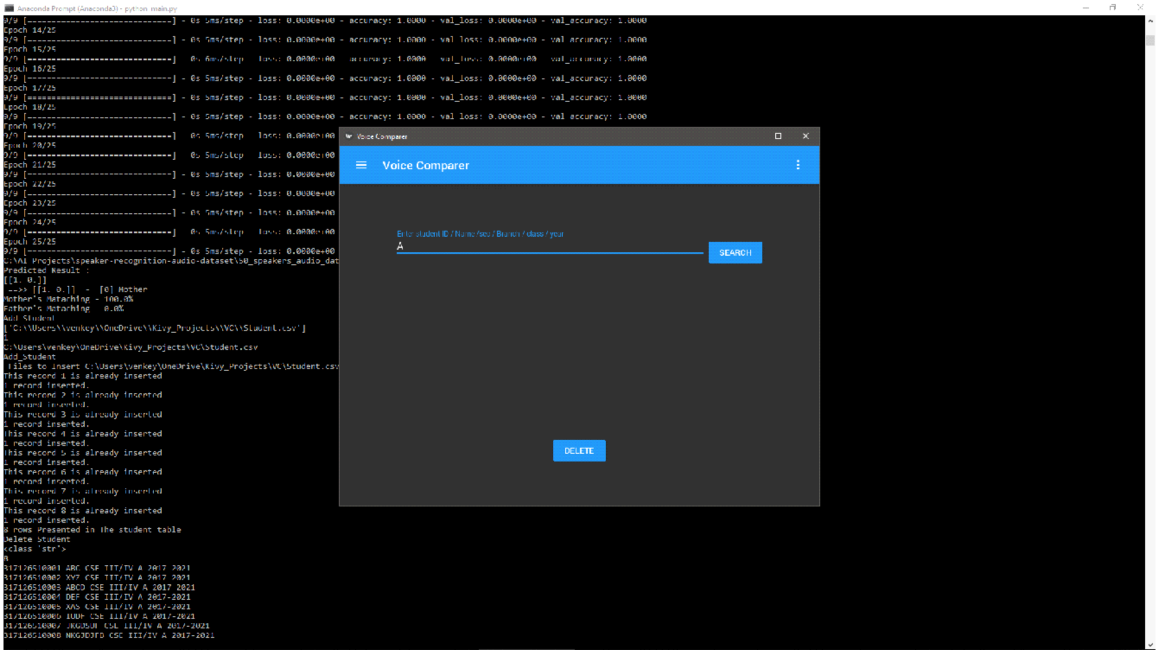


```
Epoch 8/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val loss: 0.0000e+00 - val accuracy: 1.0000
Epoch 9/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val loss: 0.0157 - val accuracy: 1.0000
Epoch 10/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0157 - accuracy: 1.0000 - val_loss: 1.0056 - val_accuracy: 0.8889
Epoch 11/25
9/9 [==============================] - 0s 5ms/step - loss: 1.0056 - accuracy: 0.8889 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 12/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 13/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 14/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 15/25
9/9 [==============================] - 0s 6ms/step - loss: 0.0000e+00
Epoch 16/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 17/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 18/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 19/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 20/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 21/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 22/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 23/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 24/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 25/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_dat
Predicted Result :
[[1. 0.]]
 -->> [[1. 0.]]     [0] Mother
Mother's Malaching   100.0%
Father's Malaching   0.0%
Add Student
['C:\\Users\\venkey\\OneDrive\\Kivy_Projects\\VC\\Student.csv']
1
C:\Users\venkey\OneDrive\Kivy_Projects\VC\Student.csv
Add Student
 Files to Insert C:\Users\venkey\OneDrive\Kivy_Projects\VC\Student.csv
This record 1 is already inserted
1 record inserted.
This record 2 is already inserted
1 record inserted.
This record 3 is already inserted
1 record inserted.
This record 4 is already inserted
1 record inserted.
This record 5 is already inserted
1 record inserted.
This record 6 is already inserted
1 record inserted.
This record 7 is already inserted
1 record inserted.
This record 8 is already inserted
1 record inserted.
8 rows Presented in The student table
```

C:\Users\venkey\OneDrive\Kivy_Projects\VC\Student.csv

Data Added to DataBase

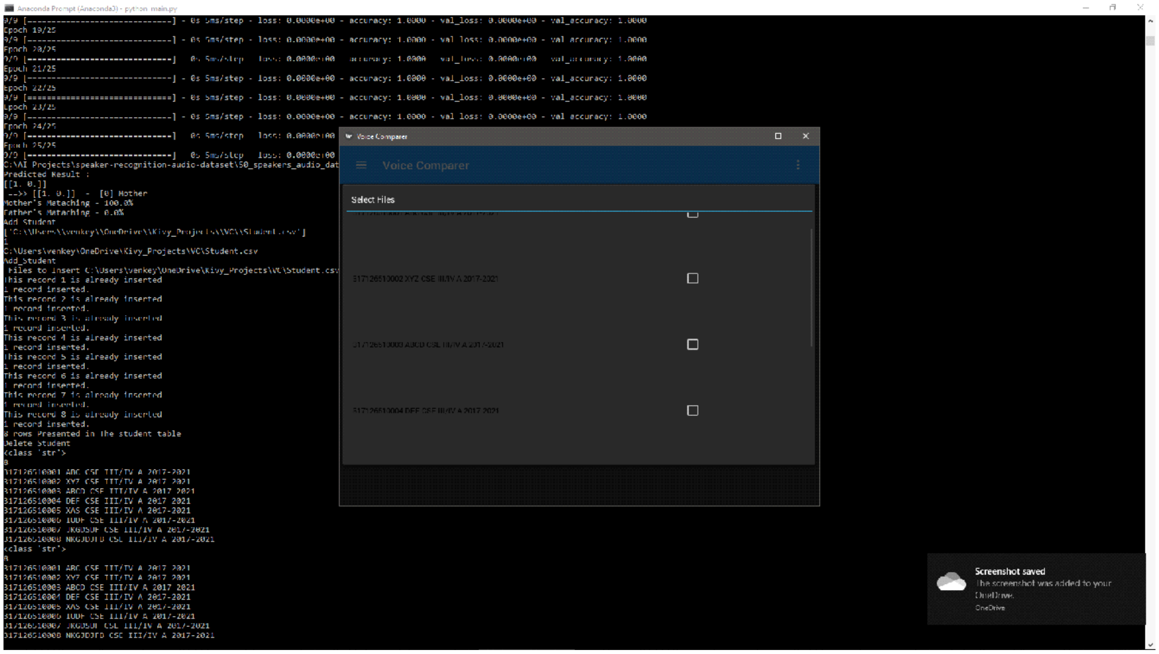
Delete by Hint :



```
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 14/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 15/25
9/9 [==============================] - 0s 6ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 16/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 17/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 18/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 19/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 20/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 21/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 22/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 23/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 24/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 25/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_dat
Predicted Result :
[[1. 0.]]
 -->> [[1. 0.]]  -  [0] Mother
Mother's Matarching - 100.0%
Father's Matarching   0.0%
Add Student
['C:\\Users\\venkey\\OneDrive\\Kivy_Projects\\VC\\Student.csv']
1
C:\Users\venkey\OneDrive\Kivy_Projects\VC\Student.csv
Add_Student
 Files to Insert C:\Users\venkey\OneDrive\Kivy_Projects\VC\Student.csv
This record 1 is already inserted
1 record inserted.
This record 2 is already inserted
1 record inserted.
This record 3 is already inserted
1 record inserted.
This record 4 is already inserted
1 record inserted.
This record 5 is already inserted
1 record inserted.
This record 6 is already inserted
1 record inserted.
This record 7 is already inserted
1 record inserted.
This record 8 is already inserted
1 record inserted.
8 rows Presented in The student table
Delete Student
<class 'str'>
8
317126510001 ABC CSE III/IV A 2017 2021
317126510002 XYZ CSE III/IV A 2017 2021
317126510003 ABCD CSE III/IV A 2017 2021
317126510004 DEF CSE III/IV A 2017-2021
317126510005 XAS CSE III/IV A 2017-2021
317126510006 IUDF CSE III/IV A 2017-2021
317126510007 JKGDSOI CSE III/IV A 2017-2021
317126510008 NKGJDJFD CSE III/IV A 2017-2021
```

Enter student ID / Name /sec / Branch / class / year
A

Selecting :



Anaconda Prompt (Anaconda3) - python main.py

```
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 19/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 20/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 21/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 22/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 23/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 24/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
Epoch 25/25
9/9 [==============================] - 0s 5ms/step - loss: 0.0000e+00
C:\AI Projects\speaker-recognition-audio-dataset\50_speakers_audio_dat
Predicted Result :
[[1. 0.]]
 -->> [[1. 0.]]  -  [0] Mother
Mother's Mataching - 100.0%
Father's Mataching - 0.0%
Add Student
['C:\\Users\\venkey\\OneDrive\\Kivy_Projects\\VC\\Student.csv']
1
C:\Users\venkey\OneDrive\Kivy_Projects\VC\Student.csv
Add_Student
 Files to insert C:\Users\venkey\OneDrive\Kivy_Projects\VC\Student.csv
This record 1 is already inserted
1 record inserted.
This record 2 is already inserted
1 record inserted.
This record 3 is already inserted
1 record inserted.
This record 4 is already inserted
1 record inserted.
This record 5 is already inserted
1 record inserted.
This record 6 is already inserted
1 record inserted.
This record 7 is already inserted
1 record inserted.
This record 8 is already inserted
1 record inserted.
8 rows Presented in the student table
Delete Student
<class 'str'>
8
317126510001 ABC CSE III/IV A 2017-2021
317126510002 XYZ CSE III/IV A 2017 2021
317126510003 ABCD CSE III/IV A 2017 2021
317126510004 DEF CSE III/IV A 2017 2021
317126510005 XAS CSE III/IV A 2017-2021
317126510006 IODF CSE III/IV A 2017-2021
317126510007 JKGDSDF CSE III/IV A 2017-2021
317126510008 NKGJDJFD CSE III/IV A 2017-2021
<class 'str'>
8
317126510001 ABC CSE III/IV A 2017 2021
317126510002 XYZ CSE III/IV A 2017 2021
317126510003 ABCD CSE III/IV A 2017 2021
317126510004 DEF CSE III/IV A 2017-2021
317126510005 XAS CSE III/IV A 2017-2021
317126510006 IODF CSE III/IV A 2017-2021
317126510007 JKGDSDF CSE III/IV A 2017-2021
317126510008 NKGJDJFD CSE III/IV A 2017-2021
```

Voice Comparer

Select Files

317126510002 XYZ CSE III/IV A 2017-2021 □

317126510003 ABCD CSE III/IV A 2017-2021 □

317126510004 DEF CSE III/IV A 2017 2021 □

Screenshot saved
The screenshot was added to your OneDrive.
OneDrive

8. CONCLUSION AND FUTURE SCOPE

8.1 CONCLUSION:

The Proposed System of Voice Comparer offers all functionalities of the Existing System and it aims to reduce the paper work. This system provides an extra facility for Admin to grant permission to a Voice Comparer in case of any necessity. Information of any records can be retrieved whenever needed.The access is granted to only Admin and Voice Comparer and the Voice Comparer can view only the issues to the allotted students. When a new Voice Comparer registers, only admin the ability to either accept or decline the registration request in order to provide security. This system provides a user friendly and response interface.

8.2 FUTURE SCOPE:

In future, we would try to enhance the responsiveness of the system, while exporting the pdf of student's proctoring form. Currently the proposed system is dedicated to only Computer Science Engineering Department of ANITS, and we would try to expand this system to all the Departments in ANITS in future.

9. REFERENCES

Web Sites:

- https://www.w3schools.com/html/
- https://www.tutorialspoint.com/javascript/
- https://www.geeksforgeeks.org/web-technology/
- https://www.javatpoint.com/php-json-example

Textbooks:

- Steven Holzner, "HTML Black Book: The Programmer's Complete HTML Reference Book"

- Robin Nixon, "Learning PHP, MySQL, and JavaScript", 4th edition