REAL TIME INTERACTIVE VIVA VOCE SYSTEM

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ABSTRACT-. Computerized and online systems have been increasing in every aspect of education. Information Technology plays a very important role in nowadays education. Computers and internet have made dramatic changes in the education system. Information technology enables institution of high learning to save time and money, and allow the delivery of education with easiness, anywhere, and anytime. Paper based books are replaced by online and off-line applications. With computer software, we can be able to have access to huge databases of information. This gives fundamental change to the education. Information technology makes the exchanges of information fast and easily. In the modern era, technological progress has minimized the information in the world. Advancement of technology has many advantages in education and all business industries that use it. With the use of the technology advances, the transaction became more rapid, accurate and efficient. As time goes by computers have become more useful for every transaction. Real time interactive viva – voce system for introduction to management is an application that is designed and developed for students and lecturers. The system helps students to take examination. It helps also lecturers to interact with the students online by asking questions one after the other both in text and voice format and the students can follow the same by giving answers, later which the evaluation of the answers will be done from database and the students can view the marks allotted in their respective account

INDEX TERMS-.   Pycharm IDE, Python 3, Opencv, Speech Recognition.

1.INTRODUCTION

Voice recognition is used interchangeably with speech recognition, however, voice recognition is primarily the task of determining the identity of a speaker rather than the content of the speaker's speech. Speech recognition is a process of converting the sound of words or phrases spoken by humans into electrical signals to which a meaning is assigned by comparing the signals with sets of phonemic representations for a close match. The phonemic representations are matched against words that are predefined in a word vocabulary. The goal of speech recognition is to enable people to communicate more naturally and effectively.

Speech recognition can be applied to many domains and applications. It can remove barriers to human-human interactions by aiding people who speak different languages to be able to talk to each other without a human interpreter. It can be used in a messaging system to transcribe voice messages left by a caller into text that can be easily sent to the recipient through emails or instant messaging Speech recognition technology has made it possible to develop computer-based reading coaches that listen to students, assess the performances, and provide immediate customized feedbacks. The traditional methods of data entry (keyboard and mouse) fail the accessibility requirements to support all types of users. Therefore, it is necessary to develop systems and applications with enhanced usability for all users. A facial recognition system is a technology capable of matching a human face from a digital image or a video frame against a database of faces, typically employed to authenticate users through ID verification services, works by pinpointing and measuring facial features from a given image. After formulizing the representation of each face, the last step is to recognize the identities of these faces. Facial recognition has many practical uses. Previously, facial recognition software could only be used as a computer application. Nowadays, though, it can be used on mobile devices and on other kinds of technology. This opens up many new ways in which facial recognition can be used. It's recently become quite popular as a marketing and commercial identification tool.Some other applications include automatic image indexing, video surveillance, human-computer interactions, and more.

In order to achieve automatic recognition, a face database is required to build. For each person, several images are taken and their features are extracted and stored in the database. Then when an input face image comes in, we perform face detection and feature extraction, and compare its feature to each face class stored in the database. There have been many researches and algorithms proposed to deal with this classification problem, and we'll discuss them in later sections. There are two general applications of face recognition, one is called identification and another one is called verification

2.LITERATURE REVIEW :

K. Sugita et. al. [2019]- new concept of 'universal multimedia access' to narrow the digital divide by providing appropriate multimedia expressions according to users' (mental and physical) abilities, computer facilities, and network environments. In our approach, multimedia contents are presented to support such functions as user interface switching, media switching and QoS (Quality of Service) switching. Our concept has been implemented as some multimedia contents in order to introduce sightseeing areas supported by 9 user interfaces in HTML5 and Java Script. However, we have not discussed about audio contents and voice operation. In this paper, we introduce a voice guidance function to our sightseeing contents by Web Speech API. Nuzhat Atiqua Nafis et. al. [2020]- "Real time speech to text" can be defined as accurate conversion of words that represents uttered word instantly after speaking. Speech-to-text-conversion is a useful tool for integrating people with hearing impairments in oral communication settings, e. g. counseling interviews or conferences. However, the transfer of speech into written language in real time requires special techniques as it must be very fast and correct to be understandable. Our aim is to develop software that enhances the user's way of speech through correctness of

pronunciation following the English phonetics. This software allows one to learn, judge and recognize their potential in English language. It also facilitates an extra add-on feature which nourishes the user's communication skills by an option of text to speech conversion also. The paper introduces and discusses different techniques for speech to text conversion and its process that described in complement with the options that are already in use.Valentina Alto [2019]-Face recognition with OpenCV Object detection is a powerful instrument and, throughout this article, I'm going to explain the structure behind the algorithm we will employ, as well as provide a practical example (specifically with face detention). For this purpose, I will use OpenCV (Open Source Computer Vision Library) which is an open-source computer vision and machine learning software library and easy to import in Python. Particularly, I'm going to use the Haar Cascade algorithm..Haar Cascade is a machine learning object detection algorithm proposed by Paul Viola and Michael Jones in their paper "Rapid Object Detection using a Boosted Cascade of Simple Features" in 2001. It is a machine learning based approach where a **cascade function** (I will explain this concept later on) is trained from a lot of positive and negative images (where positive images are those where the object to be detected is present, negative are those where it is not). It is then used to detect objects in other images. Luckily, OpenCV offers pre-trained Haar cascade algorithms, organized into categories (faces, eyes and so forth), depending on the images they have been trained on.After years of research and developments in machine learning and artificial intelligence, today voice-controlled technologies have become more efficient and are widely applied in many domains to enable and improve human-to human and human-to-computer interactions. The state-of-the-art e-commerce applications with the help of web technologies offer interactive and user-friendly interfaces. However, there are some instances where people, especially with visual disabilities, are not able to fully experience the serviceability of such applications. A voice-controlled system embedded in a web application can enhance user experience and can provide voice as a means to control the functionality of e-commerce websites. In this paper, we propose a taxonomy of speech recognition systems (SRS) and present a voice-controlled commodity purchase e-commerce application using IBM Watson speech-to-text to demonstrate its usability. The prototype can be extended to other application scenarios such as government service kiosks and enable analytics of the converted text data for scenarios such as medical diagnosis at the clinics.

3.METHODOLOGY

Main methodology activities held during the research is acquiring information and knowledge about online viva examination system through researches that were previously done in related area. All the research materials were obtained over the internet, Wikipedia and other websites. Next step taken is reading, comprehending and analyzing literature review and matching information obtained. This research emphasize online examination system, which include usability, user-friendly interface.
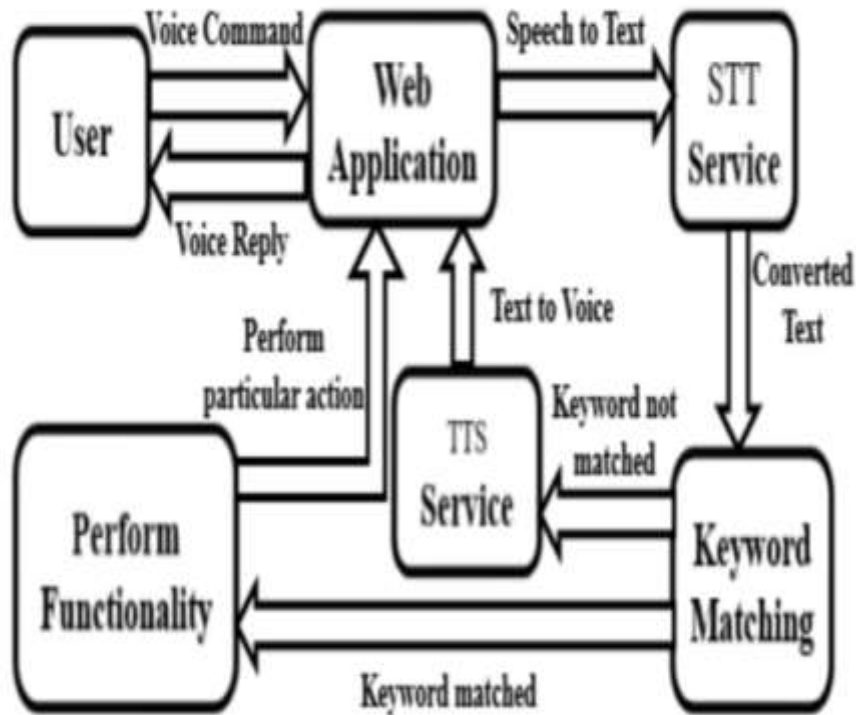
3. BLOCK DIAGRAM

Fig. 1: Speech Recognition and Speech synthesis

4.RESULTS

This phase will evaluate and verify the system that was developed This phase will have a simulation data which will simulate the true database for the system. This is to test the functionality of the system in comparing a capture data with a database. Beside, all the functionality that may cause errors or problems to the system must be specified inside this phase because, the final result of the system is a very high priority and important. However, the testing phase will only cover to overcome the problem statement and the system objectives.Validation aims to demonstrate that the software functions in a manner that can be reasonably expected by the user. An experiment has done for checking the consistency for the user requirements regarding the username and password or by face detection whichshouldbe validated through server and the username and password should be matched or face detection should be successfully worked.

CONCLUSION

Speech Recognition has become very important in today's world. With the advancements in technology and improvements in recognition algorithms, speech has become one of the primary source of input for many applications. Speech is the most efficient and natural way of communication. So, it is intuitive that speech recognition systems have found applications in various fields. We have developed a viva voce system and this function can be used for all types of UI, which has features like Speech recognition, Speech Synthesis, Face recognition. This Web Application provides facility to conduct online examination worldwide. It saves time as it allows number of students to give the exam at a time and displays the results as the test gets over, so no need to wait for the result. It is automatically generated by the server. Administrator has to create, modify and delete the test papers and its particular question. User can register, login and give the test with his specific id, and can see the results as well. Online examination system is a user friendly system, which is very easy and convenient to use. The system is complete in the sense that it is operational and it is tested by entering data and getting the reports in proper order. But there is always a scope for improvement and enhancement

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