

SOCIETAL BENEFICIAL INNOVATION PROJECT REPORT

E-LEARNING PORTAL FOR HEARING IMPAIRED STUDENTS

ABSTRACT

Department of Information Technology

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- V.LOGESH
 - R.GANESH KARTHIK
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INTRODUCTION

The usage of technology within the educational department has become more vital by each year passing. One of the most popular technological approaches used is the e-learning environment. The usage of e-learning environment in education involves a wide range of types of students. But the usage of e-learning environment has always been a challenge for the hearing impaired ones. For that purpose, some adjustment or enhancement needs to be implemented within the e-learning environment, based on the needs or the adaptability of the hearing impaired students accordingly.

E-learning environment is one of the most used techniques for educational purpose especially during the COVID-19 pandemic. However, most e-learning environment available does not particularly can be useful to those students due to its feature which is lacking in terms of adaptability. Therefore, in order to assist these Hearing Impaired students in accessing the information adequately, the e-learning environment needs to be developed and designed according to the needs of them by adding or enhancing some features within the e-learning environment.

ABSTRACT

Technology can support in imparting knowledge to hearing-impaired students by means of visual interpretation of the contents and be supportive to the teachers in reaching out to them more effectively. This Learning Portal applies Speech Recognition techniques for transcribing the teacher's classroom lecture into textual content for the students to view, understand and also save for future reference. Images and related videos can be uploaded for better understanding. The learning portal also has a download button, which downloads the teachers lecture during the completion of the session, for the use of both teachers and students in future purpose.

The learning portal will help both students and teachers in a hearing impaired school as this was particularly developed for it. This will be helpful towards overcoming the sign language barrier for those hearing impaired students.

INITIATION OF PROJECT

After several brainstorming sessions by Department of Information Technology and, a thought of concept for hearing impaired students, as earlier we have planned the projects exclusively for physically challenged population, later on specifically we have planned to create a E-Learning Portal for Hearing Impaired Students and this idea was taken forward to the Secretary of the College to approve it under the Societal Beneficial Innovation (SBI) project.

FROM,
V.LOGESH,
R.GANESH KARTHIK,
DEPARTMENT OF INFORMATION TECHNOLOGY,
MEENAKSHI SUNDARARAJAN ENGINEERING COLLEGE,
CHENNAI-600024.

TO,
THE SECRETARY,
MEENAKSHI SUNDARARAJAN ENGINEERING COLLEGE,
CHENNAI-600024.

SUB: Request for approval of SBI Project reg.

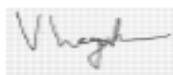
Respected Mam,

We, both students of this esteemed college have come up with an idea to make an learning portal for hearing impaired students, as of to increase their knowledge gain and reduce the limitations of their academic training, the project is named as "**E-Learning Portal for Hearing Impaired Students**", and we both seek approval from the management to proceed with the same under the "Societal Beneficial Innovation" event. We request you to review & approve our project and we assure to complete our project with our absolute best efforts.

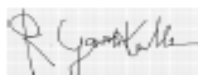
Encl: Proposal of the project and the project estimation.

Thanking You!!

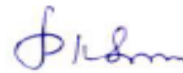
Yours Sincerely,



V.LOGESH



R.GANESH KARTHIK



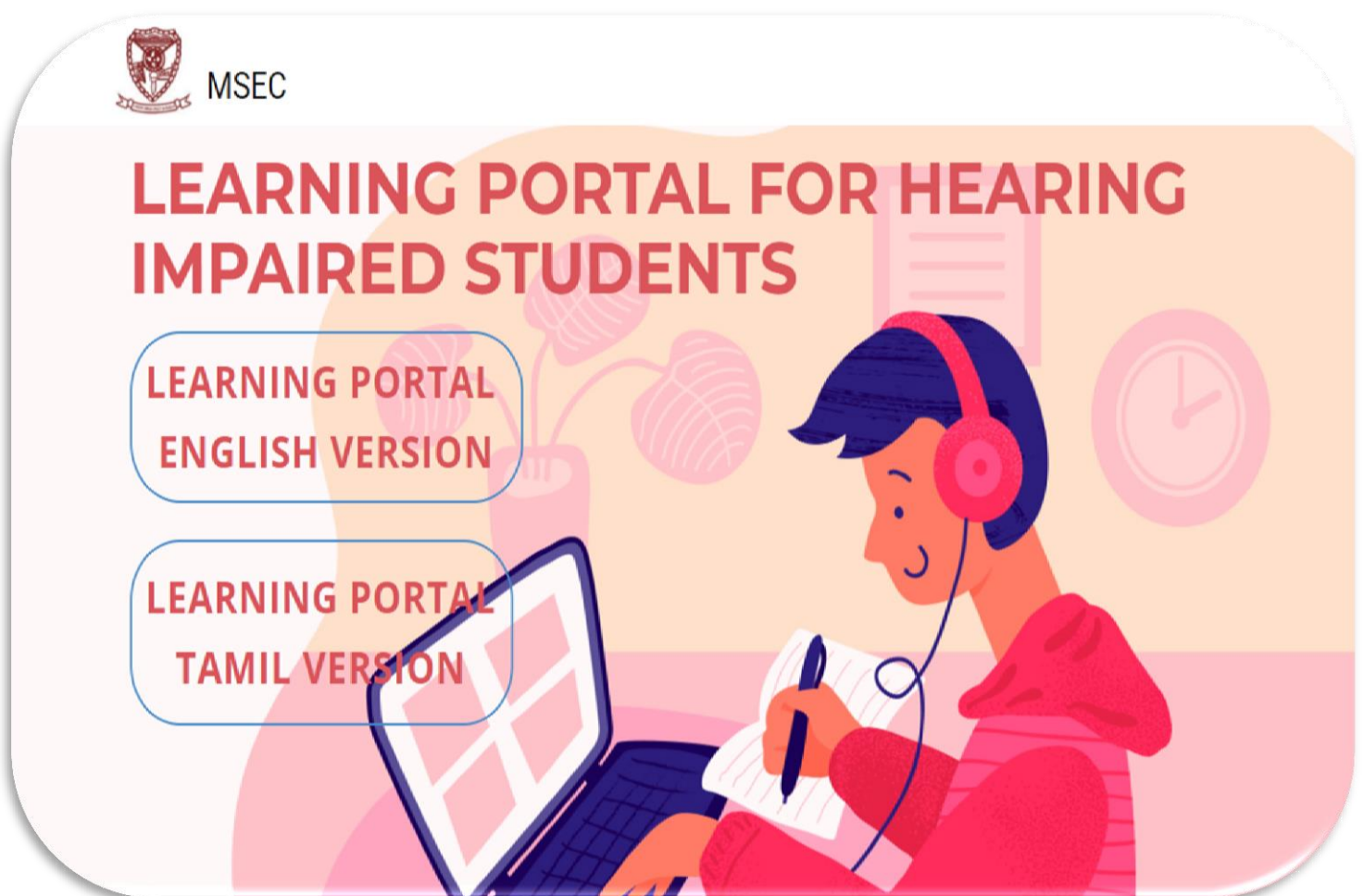
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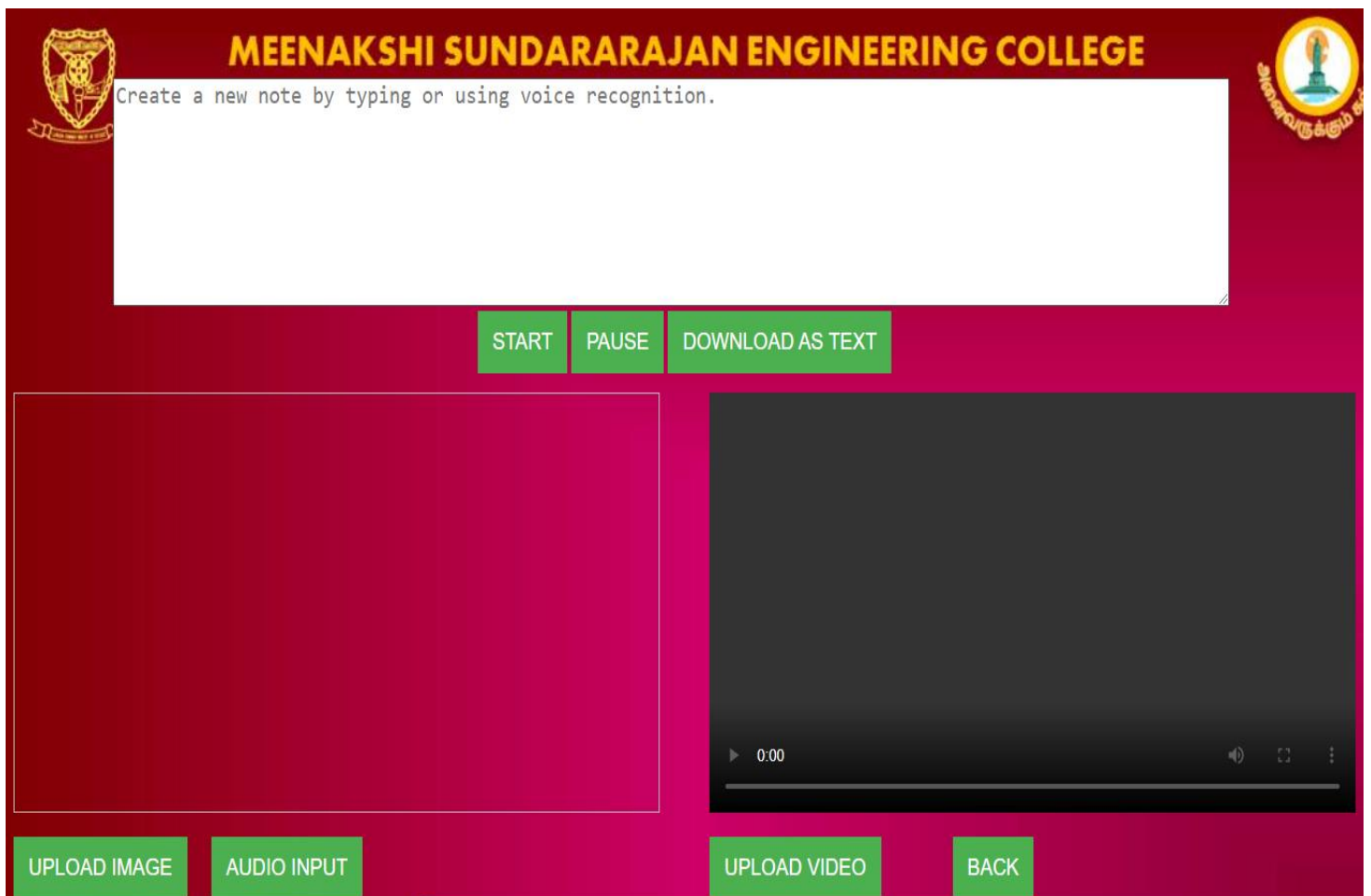
MEENAKSHI SUNDARARAJAN ENGINEERING COLLEGE
363, ARCOT ROAD, KODAMBAKKAM,
CHENNAI-600 024

DEVELOPMENT OF PROTOTYPE

PROTOTYPE I

After the approval of the project, creation of the first prototype design was initiated and was completed with several iterations. The design was then verified with the help of faculties in-charge and fabrication of the same was started.





Before the time of lecture, the teacher opts the required language to start his/her class. After choosing the required language, the teacher then, needs to upload the required image file and video file for the particular session. The image file can be uploaded in two ways. One is by clicking the upload image button, which redirects the system to the local directory where the image files are being stores. The second way is that the teacher can click the audio input button and can provide the name of the image through the microphone. This then displays the appropriate image file to the image block, which makes

it even more user friendly. The video file can be uploaded by clicking on the upload video button which redirects the system to the local directory where the video files are being stores.

When the teacher wants to start the class, he/she would need to enable the start the button, which converts the teacher's session contents into textual form and display it in the text area. For transcribing the audio content into textual form, SPEECH RECOGNITION techniques inside JQuery library are being used. When the teacher needs to stop or needed a break during the session, the teacher can use the pause button to pause the transcribing. The learning portal also has a download button, which downloads the teachers lecture during the completion of the session, for the use of both teachers and students in future purpose.

The learning portal will help both students and teachers in a hearing impaired school as this was particularly developed for it. This will be helpful towards overcoming the sign language barrier for those hearing impaired students.

REQUIREMENTS:

The initial requirements for the learning portal for work efficiently are as follows:

- A personal computer/laptop/smart board.
- Wired/wireless/in built microphone
- Internet facility

The model was successfully made and presented on 11.10.2021 to the Secretary and the faculty members and several improvements were suggested. These suggestions were noted and were executed in the next prototype.

REVISION 1

First the Trial version of the prototype is presented “**Little Flower Convent Higher Secondary School for the Deaf**”, T.Nagar, Chennai. Were the Staffs and teachers of the school provided a little more opinions and ideas which make our work easier and effective, as their guidance towards the project, makes us more confident on the usage of the application in the educational sector.

REVISION 2

The Second Trial and the improved version of the project is presented in **Dr.MGR Home & Higher Secondary School for the Speech & Hearing Impaired**, Ramapuram, Chennai. Here we are little more excited to present the project as we played a complete demo video and also presented a live demo for the teachers and faculties of the school, Which make a good impression and improvement of our project.





CONCLUSION

As our project is web based application, we hosted the project in the Web Hosting Panel ,as it focuses on more beneficiaries. An event for Societal Beneficial Innovation was organized on 26.02.2022 to launch the E-Learning Portal to the Hearing Impaired students by the Hon. Chief Guest, Thiru M.K.Stalin, Chief Minister of Tamil Nadu.

