Voice-based Online Examination System for Visually Impaired Students

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AGENDA

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Abstract

The COVID-19 pandemic has accelerated the adoption of online methods like e-learning and online exams. However, visually impaired students face significant challenges in online examinations as they rely on the Braille system for reading and writing. They struggle to read questions displayed on the screen, making it difficult to participate effectively. To address this issue, a voice-based online examination system is essential. This system will read questions aloud and accept student responses through voice commands, ensuring seamless navigation. By enabling students to interact solely through voice, it creates a comfortable and accessible exam environment. This approach enhances inclusivity in education and helps visually impaired students take exams independently. Additionally, it boosts their confidence and improves their overall exam experience.

Introduction

Background & Context

- Traditional online exams often exclude blind individuals and those with upper limb disabilities.
- Need for an inclusive, accessible online examination system.

Motivation

- Promote equity in education.
- Utilize modern technology for accessibility.
- Comply with regulatory requirements.

Objectives

- Develop an accessible exam platform.
- Integrate speech technologies (Libraries).
- Enable easy question management for examiners.
- Ensure quick result generation.
- Provide assisted login for users.

Related Work

- **Online examination system for blinds**

  The major drawback is that the answer will be given by the blind candidate only through limited buttons on the keyboard.

- **Computerized examination for visually impaired students**

  The drawback of this system is that third person is required to monitor and to help the blind candidates.

- **E-blind examination system**

  The disadvantage of this system is that it cannot support long answers other than MCQ’s.

- **E-blind exam portal commands.**

  The drawback of this system is that it only reads the textual content present in the screen through voice System

Proposed Work

To develop a web-based platform that facilitates an efficient and accessible examination system for visually impaired individuals. The platform will have user authentication with Login Credentials.The platform will allow users to interact with the exam interface through voice-based commands and responses with web speech API. Specifically, it will read aloud the exam questions and capture voice inputs from the user as answer with the help of Google Cloud Speech-to-Text API. The system will then evaluate the responses and give Result.To provide timer for overall exam and announce by Javascript timer and trigger also per-question time limit.

Project Timeline

	Week 1	Week 2	Week 3	Week 4	Week 5
Implementation	Software Download	Start Implementation	Develop Websites	Develop Database	Completed
Testing	Not yet	parallel testing	testing	testing	Completed
Document preparation	Not yet	Not yet	Start Documentation	Continue The Document	Completed

Implementation & Methodology

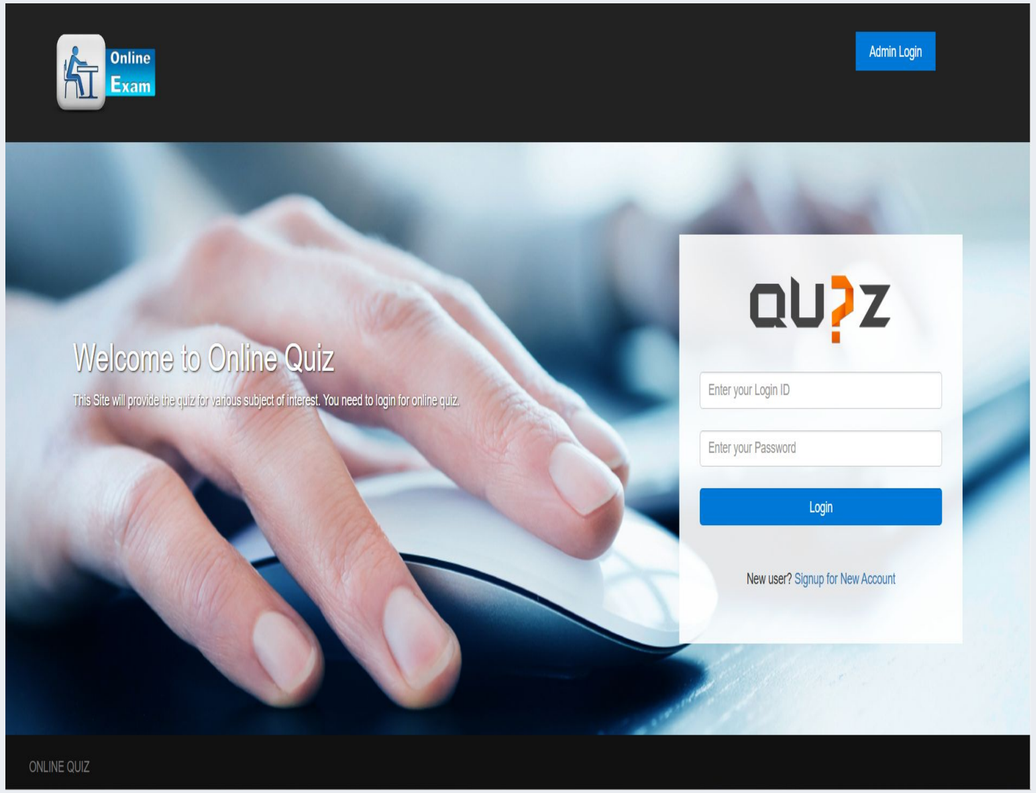
Tools and Methodologies

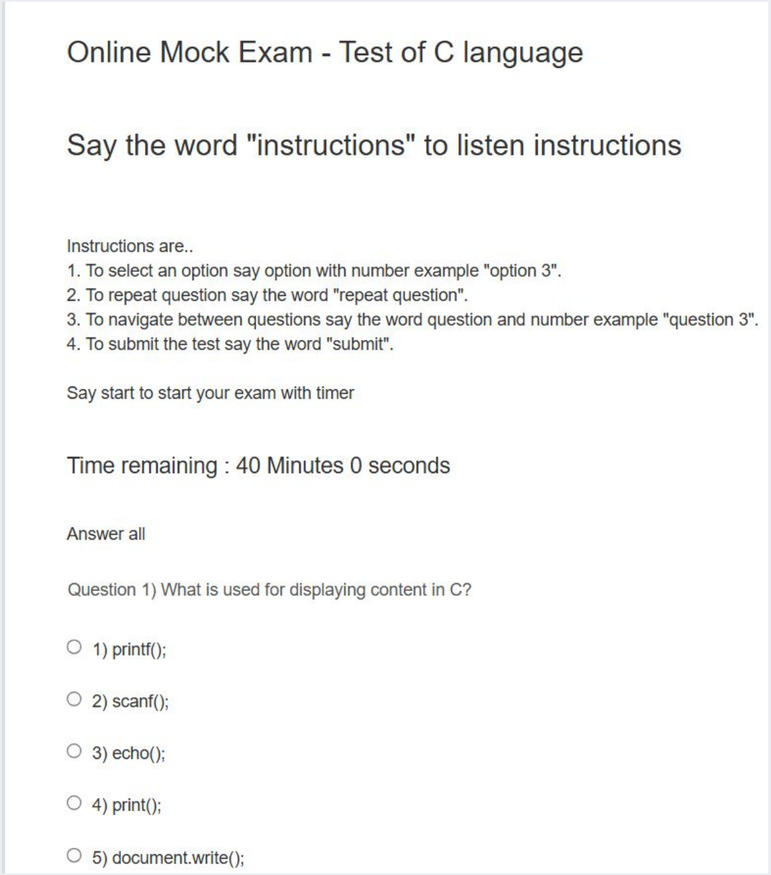
- API’s - Mozilla Speech Synthesis API,Google Web Speech API
- Frontend - HTML, CSS, JavaScript, Bootstrap
- Backend - PHP,MYSQL

Step-by-Step Process of the Initial Phase

- Prepare the Project Environment
- Build a Voice Interaction Prototype
- Develop User Interfaces:
- Connect the Frontend and Backend
- Testing

Results


Online Exam
Admin Login
Welcome to Online Quiz
This Site will provide the quiz for various subject of interest. You need to login for online quiz.
QUIZ
Enter your Login ID
Enter your Password
Login
New user? Signup for New Account
ONLINE QUIZ


Online Mock Exam - Test of C language
Say the word "instructions" to listen instructions
Instructions are..
1. To select an option say option with number example "option 3".
2. To repeat question say the word "repeat question".
3. To navigate between questions say the word question and number example "question 3".
4. To submit the test say the word "submit".
Say start to start your exam with timer
Time remaining : 40 Minutes 0 seconds
Answer all
Question 1) What is used for displaying content in C?
1) printf();
2) scanf();
3) echo();
4) print();
5) document.write();

Conclusion & Future Work

Conclusion

The **Voice-Based Online Examination System** enables visually impaired students to take exams independently using speech synthesis and recognition. It ensures **fairness, efficiency, and accessibility** in online assessments. This project contributes to **inclusive education**, making digital learning more accessible.

Future Work

Login Through Voice or Face Recognition, More type of Questions.

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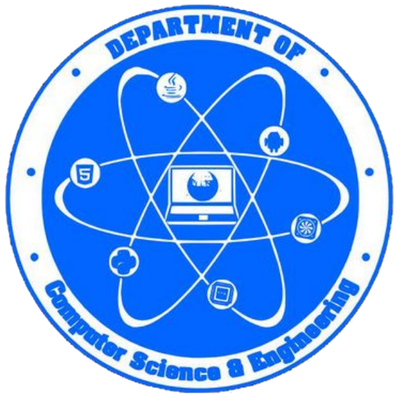
SUMMARY



Abstract	Introduction
Related Work	Proposed Work
Implementation & Methodology	Results
Conclusion & Future Work	Any Queries?

Our Team

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Thank You!