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Eye Vision-the Online Eye Test

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ABSTRACT: Vision is one of the most critical senses for daily life, and early detection of visual impairments can significantly improve quality of life. This project presents the design and implementation of an **online eye vision testing website** that allows users to perform a preliminary vision assessment from the comfort of their homes. The system begins with user authentication, followed by a set of instructions to ensure accurate testing. Users calibrate their screen using a standard credit card to ensure proper letter sizing and stand approximately three meters away from the screen. The test is conducted by having users cover one eye and read letters displayed on the screen, which gradually decrease in size. The system records the responses and analyzes them to provide immediate feedback, classifying vision as either **normal** or **weak**. This platform provides an accessible, efficient, and user-friendly method for preliminary vision screening, supporting early detection of visual deficiencies and promoting eye health awareness. The research highlights the feasibility, accuracy, and usability of web-based vision testing as an alternative to conventional in-person eye examinations.

KEYWORDS: Construction services, quality construction, modern construction techniques.

I. INTRODUCTION

Vision is essential for performing daily tasks, and early detection of vision problems is crucial for maintaining eye health. Traditional eye examinations require visits to clinics, which may not always be convenient. To address this, we propose an online eye vision testing system that allows users to assess their vision from home. The system guides users to calibrate their screen using a credit card, maintain the correct distance from the screen, and read letters displayed one eye at a time. The software gradually reduces letter size, records user responses, and provides immediate results indicating normal or weak vision. This approach offers a simple, accessible, and efficient method for preliminary vision screening.

II. LITERATURE SURVEY

recent research has explored web-based and mobile tools for visual acuity testing, showing that they can provide reasonable preliminary screening compared to traditional clinical tests. These tools often include size-adjustable letters and automated scoring, but their accuracy can be affected by device differences, user distance, and unsupervised home environments. Many existing systems also lack guided workflows, relying on users to follow instructions correctly, which can reduce reliability.

The proposed online eye vision test addresses these limitations by guiding users through login, instructions, screen calibration using a credit card, one-eye testing, and stepwise letter reading. The system records responses and provides immediate results as normal or weak vision, offering a simple and user-friendly outcome. By combining physical calibration, fixed-distance setup, and a structured workflow, this project improves reliability, accessibility, and usability for home-based vision screening. Compared to existing studies, this approach of visual impairments.

III. METHODOLOGY AND ANALYSIS

Methodology:

The proposed system is a web-based platform for home vision screening, designed to guide users through an easy and accurate testing process. The methodology consists of the following steps:

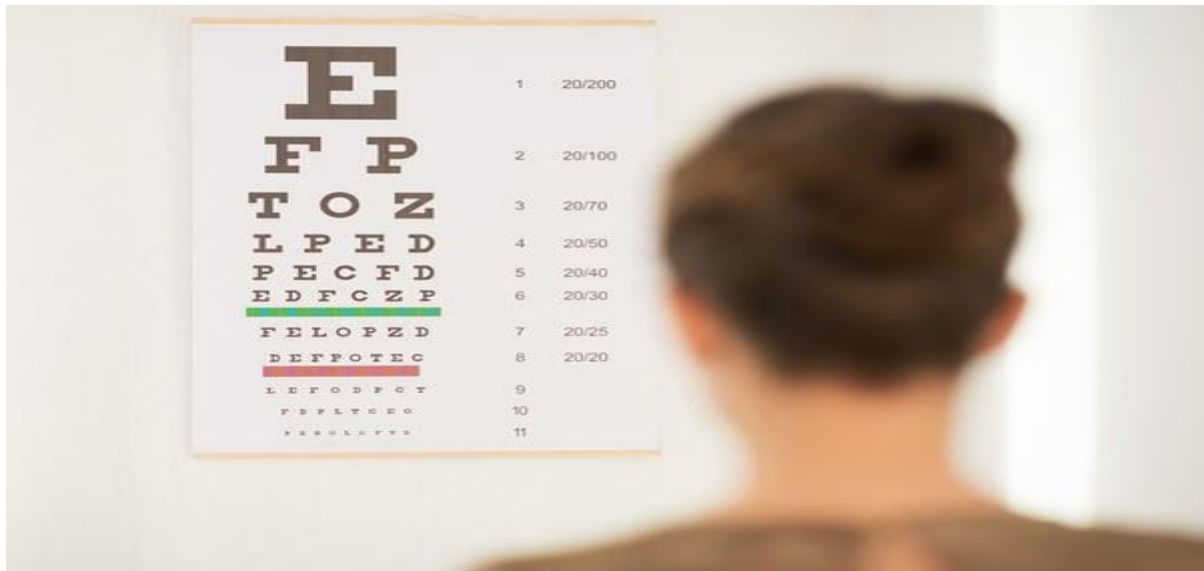
1. **User Login:** Users access the system securely with a username and password, enabling personalized tracking of tests.
2. **Instructions & Setup:** Clear instructions are provided to ensure correct testing conditions. Users are asked to maintain a distance of about 3 meters from the screen and cover one eye at a time.
3. **Screen Calibration:** To ensure accurate letter sizing on different devices, users adjust the on-screen scale using a **credit card as a reference**, standardizing the display size across monitors.
4. **Vision Testing:** Letters are displayed on the screen in a decreasing size sequence. Users input their responses, and the system records the smallest size correctly identified.
5. **Result Generation:** Based on the recorded responses, the system classifies vision as **normal** or **weak**, providing immediate feedback.

Analysis:

1. **Response Tracking:** Each letter read by the user is logged as correct or incorrect, allowing the system to determine the threshold of accurate vision.
2. **Classification:** Vision results are evaluated against predefined standards, and users are categorized as having **normal** or **weak vision**.
3. **Reliability Enhancement:** The combination of screen calibration, fixed viewing distance, and guided workflow minimizes errors due to device differences or improper setup.
4. **User Feedback and Awareness:** Immediate feedback educates users about their visual health and encourages consultation with an eye specialist if needed.

IV. EXPERIMENTAL RESULTS

The expected result of our website:





V. CONCLUSION

The proposed web-based eye vision testing system provides a simple, accessible, and reliable platform for preliminary vision screening at home. By combining secure user login, clear instructions, physical screen calibration using a credit card, one-eye testing, and stepwise letter size reduction, the system minimizes errors caused by device differences and improper setup. It records user responses accurately and provides immediate feedback, classifying vision as normal or weak, making it easy for users to understand their eye health status.

Compared to existing digital vision tests, this project introduces innovative features such as physical calibration and a fully guided workflow, enhancing usability, reliability, and accessibility. It enables early detection of potential visual impairments, promotes awareness about eye health, and demonstrates the potential of web-based platforms for home-based preliminary vision screening.

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