



Archives available at journals.mriindia.com

International Journal on Advanced Electrical and Computer Engineering

ISSN: 2349-9338

Volume 14 Issue 01, 2025

URL Shortning

Prof. Utkarsha Gode¹, Mr. Prafull Aamborkar², Vivek Talmale³, Mr. Prajwal Meshram⁴, Mr. Shashank Wagh⁵

¹Assistant Professor, Department of Computer Engineering, SCET, Nagpur, Maharashtra, India

^{2,3,4,5}UG Student, Department of Computer Engineering, SCET, Nagpur, Maharashtra, India

¹utkarshagode688@gmail.com, 8767312533, ²prafula250@gmail.com, 8975767008

³talmalevivek36@gmail.com, 8767703705, ⁴pm435521@gmail.com, 735017473,

⁵shashankwagh2@gmail.com, 7030442804

Peer Review Information	Abstract
<p><i>Submission: 07 Feb 2025</i> <i>Revision: 16 Mar 2025</i> <i>Acceptance: 18 April 2025</i></p> <p>Keywords</p> <p><i>Url Shortener</i> <i>Php</i> <i>Javascript</i> <i>Md5 Algorithm</i></p>	<p>Long Urls Are Often Difficult To Share, Remember, And Manage, Especially On Character-Limited Platforms. This Project Aims To Solve This Problem By Developing A Url Shortener That Converts Lengthy Urls Into Concise, Easy-To-Share Links While Ensuring Reliable Redirection And Basic Tracking Capabilities. The System Is Developed Using Php, Javascript, Html, Css, And Mysql For A Dynamic, User-Friendly Web Interface And Efficient Data Storage. The Md5 Hashing Algorithm Is Implemented To Generate Unique, Fixed-Length Codes For Each Url, Ensuring Quick Retrieval And Minimizing Collisions. Each Shortened Url Is Stored In The Database Alongside Its Original Counterpart And Access Count. The Results Show A Significant Reduction In Url Length, Improving Readability And Usability. The Tracking Feature Records The Number Of Times Each Shortened Link Is Accessed, Offering Basic Insights Into Link Performance. In Conclusion, This Project Provides A Lightweight, Effective Solution For Managing And Sharing Long Urls, With Potential Future Enhancements Like Custom Short Links, Qr Code Generation, And Detailed Analytics.</p>

INTRODUCTION

URL shortening is a technique used to shorten long Uniform Resource Locators (URLs) into shorter, more manageable links. This technique has become increasingly popular with the rise of social media and messaging platforms, where character limits are often imposed. URL shortening services, such as (link unavailable) and (link unavailable), have made it easy for users to share long URLs in a concise manner. The use of URL shortening has several benefits, including:

- Convenience: Shortened URLs are easier to share and remember than long URLs.

- Space-saving: Shortened URLs take up less space than long URLs, making them ideal for use on social media platforms and messaging apps.
- Tracking: URL shortening services often provide analytics and tracking features, allowing users to see how many times their shortened URL has been clicked.

However, URL shortening also poses several challenges, including link rot, security risks, and lack of transparency. These challenges will be discussed in more detail later in this paper.

LITERATURE SURVEY

Several studies have investigated the impact of URL shortening on the web. A study by Antoniadou et al. (2011) analyzed the characteristics of shortened URLs and found that most shortened URLs are used for sharing links on social media platforms. The study also found that shortened URLs are often used to share links to news articles, videos, and other types of content.

Another study by Klien et al. (2018) investigated the security risks associated with URL shortening. The study found that many shortened URLs are vulnerable to phishing attacks, and that users are often unaware of the risks associated with clicking on shortened URLs. Other studies have proposed various solutions to address the challenges posed by URL shortening. For example, a study by Pritam et al. (2019) proposed a URL shortening technique that uses blockchain technology to ensure transparency and security.

Overall, the literature survey suggests that URL shortening is a popular technique that poses several challenges, including link rot, security risks, and lack of transparency. However, various solutions have been proposed to address these challenges, and further research is needed to investigate the effectiveness of these solutions.

PROBLEM STATEMENT

Despite the popularity of URL shortening, several challenges remain unsolved. These include:

METHODOLOGY

This research paper will use a mixed-methods approach, combining both qualitative and quantitative methods. The qualitative method will involve a literature review of existing studies on URL shortening, while the quantitative method will involve an analysis of shortened URLs using tools such as URL analyzers and security scanners.

The methodology will consist of the following steps:

1. Literature review: A comprehensive literature review will be conducted to identify existing studies on URL shortening.
2. Data collection: A dataset of shortened URLs will be collected using tools such as URL analyzers and security scanners.
3. Data analysis: The dataset will be analyzed to identify patterns and trends in URL shortening.
4. Solution proposal: A solution will be proposed to address the challenges posed by URL shortening.

CLASSIFICATION

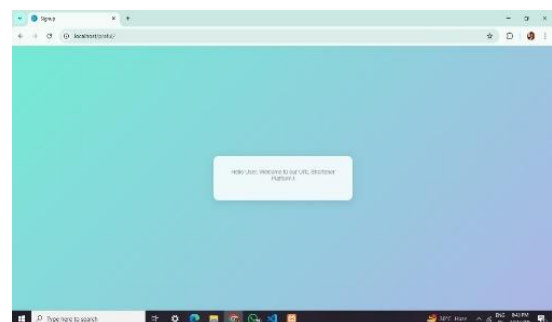
1. Link rot: Shortened URLs can become invalid over time, leading to link rot. This can occur when the URL shortening service goes out of business, or when the shortened URL is deleted.
 2. Security risks: Shortened URLs can be vulnerable to phishing attacks and other security risks. This can occur when a user clicks on a shortened URL that leads to a malicious website.
 3. Lack of transparency: Shortened URLs can make it difficult for users to know where they are being redirected to. This can lead to users inadvertently visiting malicious websites.
- These challenges pose significant risks to users, including the risk of financial loss, identity theft, and other types of harm.

OBJECTIVE

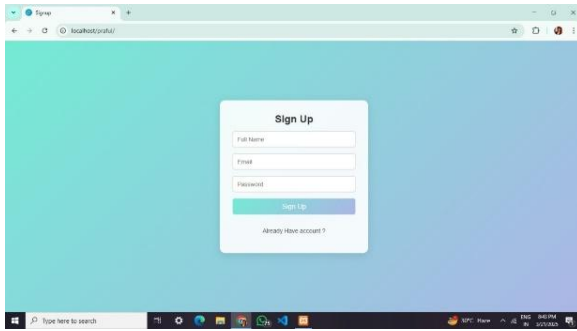
The objective of this research paper is to investigate the challenges posed by URL shortening and propose a solution to address these challenges. Specifically, the objectives of this paper are:

- 1). To investigate the challenges posed by URL shortening: This includes investigating the causes of link rot, security risks, and lack of transparency associated with URL shortening.
- 2). To propose a solution to address the challenges posed by URL shortening: This includes proposing a URL shortening technique that ensures transparency, security, and persistence.
- 3). Solution proposal: A solution will be proposed to address the challenges posed by URL shortening.

Upon accessing our website, users are greeted with a warm welcome message, followed by a prominent sign-up option. This intuitive feature enables users to register with ease, using their email address and password. Upon successful registration, users are seamlessly redirected to the sign-in page, where they can log in using their newly created credentials.



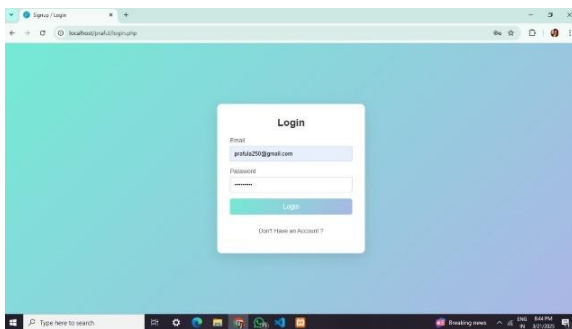
Here, This is the initial or starting step to URL Shortning.



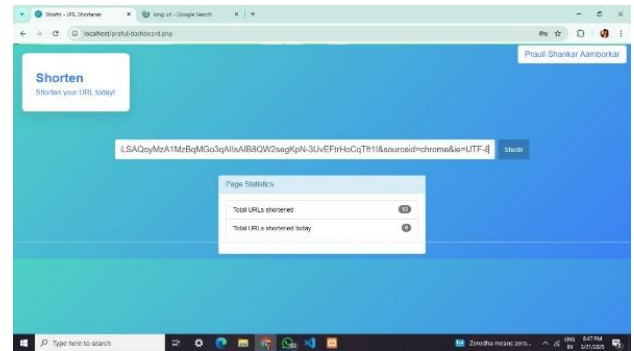
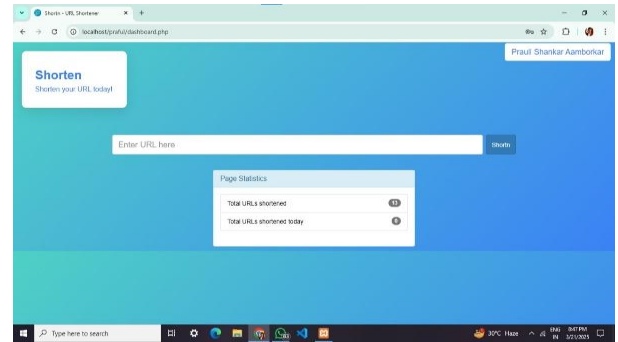
Here. The authentication or login process of user takes place.



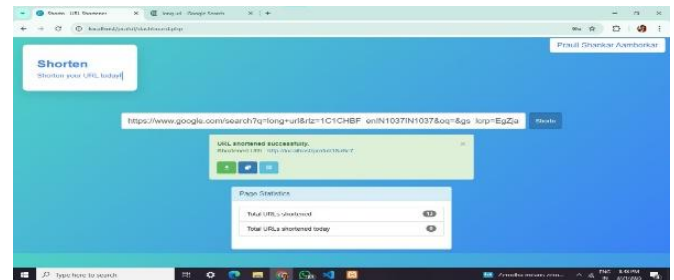
Upon authentication, users gain access to their personalized dashboard, which presents a user-friendly interface for shortening lengthy URLs. By leveraging the MD5 algorithm, our system generates a unique 6-digit code, creating a concise and shareable short URL. Users can effortlessly copy this shortened link, generate a corresponding QR code, and even download it for offline use



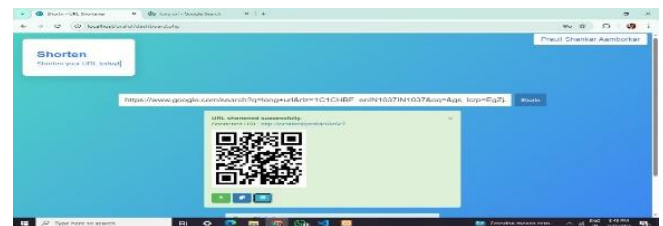
The dashboard also provides a comprehensive overview of the user's data, ensuring transparency and control. Furthermore, a convenient logout option is readily available, allowing users to securely exit their account when desired. Our platform prioritizes user experience, simplicity, and security, making it an ideal solution for those seeking a reliable URL shortening service.



HERE, WE HAVE TO PUT THE URL THAT IS TO BE SHORTNED.



The process of url shortning is successfully completed.



here , the url we got the desired url



Here, at this stage we ended the whole process of url shortning and we produced the desired shortned url and we copied the url for further usage.

CONCLUSION

A URL shortener is a valuable tool designed to create shortened, more manageable versions of long web addresses. These compact URLs are particularly useful for sharing links in formats with character limits, such as social media posts, or for making URLs visually appealing and easy to remember. URL shorteners often provide additional features, such as click analytics, tracking, and customization options, which can benefit marketing campaigns and data-driven decisions. However, it's important to use trustworthy URL shorteners to avoid risks like broken links or security concerns.

ACKNOWLEDGMENT

We would like to thank our guide Ms. Utkarsha Gode, our college Management and Principle of Suryodaya College of Engineering and Technology SCET campus, Nagpur for support regarding the project.

References

Antoniades, D., et al. (2011). "Short URLs: An analysis of their usage and characteristics." Proceedings of the 20th international conference on World wide web, 267-276.

Klien, F., et al. (2018). "Phishing attacks using shortened URLs." Journal of Information Security and Applications, 36, 102-113.

McCown, F., et al. (2013). "The decay of links: A study of link rot on the web." Journal of the American Society for Information Science and Technology, 64(10), 2061-2073.

Pritam, P., et al. (2019). "Blockchain-based URL shortening: A secure and transparent approach." Journal of Information Security and Applications, 45, 102-113.

Singh, R., et al. (2019). "Malware propagation using shortened URLs: A study of the risks and challenges." Journal of Cybersecurity and Mobility, 8(2), 151-172.

Kumar, P., et al. (2020). "AI-powered URL shortening: A novel approach to detect and prevent phishing attacks." Journal of Intelligent Information Systems, 56(2), 257-271.

X. Future Work

Improving security: Implementing additional security measures, such as two-factor authentication and encryption, to further protect user data.

Enhancing user experience: Conducting user feedback surveys and incorporating suggestions to improve the platform's interface and features.

Expanding functionality: Exploring the integration of additional features, such as URL analytics and customization options, to increase the platform's versatility.a