# URL SHORTENER

**PRESENTED BY: GROUP 10**

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# PROBLEM STATEMENT

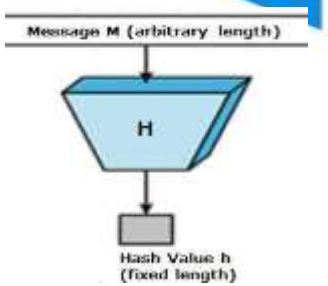
Developing an efficient and secure URL shortening system that addresses the growing need for concise and user-friendly links, while mitigating potential risks such as link manipulation, security vulnerabilities, and ensuring optimal performance."

# INTRODUCTION


- The URL Shortener project seeks to streamline the process of sharing and managing links.
- With a focus on simplicity, efficiency, and reliability, the web-based application facilitates the conversion of lengthy URLs into concise and user-friendly short links.
- This not only eases sharing on platforms with character limitations but also enhances the overall user experience.
- The core functionalities encompass the submission of long URLs and the reception of shortened versions, coupled with a seamless redirection mechanism.
- By emphasizing simplicity and efficiency, the URL Shortener project aims to meet the fundamental need for efficient URL management without unnecessary complexities.

# FEATURES





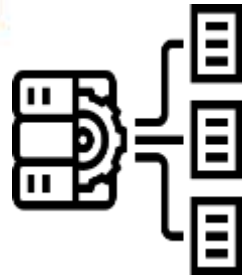

- **URL Shortening:** Users can submit long URLs to the system.The system generates a shortened URL for each submitted long URL.
- **URL Redirecting:** Users clicking on a shortened URL are seamlessly redirected to the original, longer URL.
- **Analytics (Basic):** Basic tracking of link usage, including the number of clicks on each shortened URL.
- **User Interaction:** Involves the exchange of information and actions between users and the system, facilitating a user-friendly experience.
- **Hash Functions:** Utilizes hash functions for quick and deterministic conversion of input data into fixed-size strings, ensuring uniqueness.
- **Rate Limiter:** Addresses potential security problems by filtering out requests, particularly those from malicious users, based on IP address or other filtering rules.

# MODULES


- **URL Shortening Module**
- **Analytics Module**
- **User Interaction Module**
- **Hashing and Unique ID Generation Module**
- **Security Module**
- **Database Management Module**

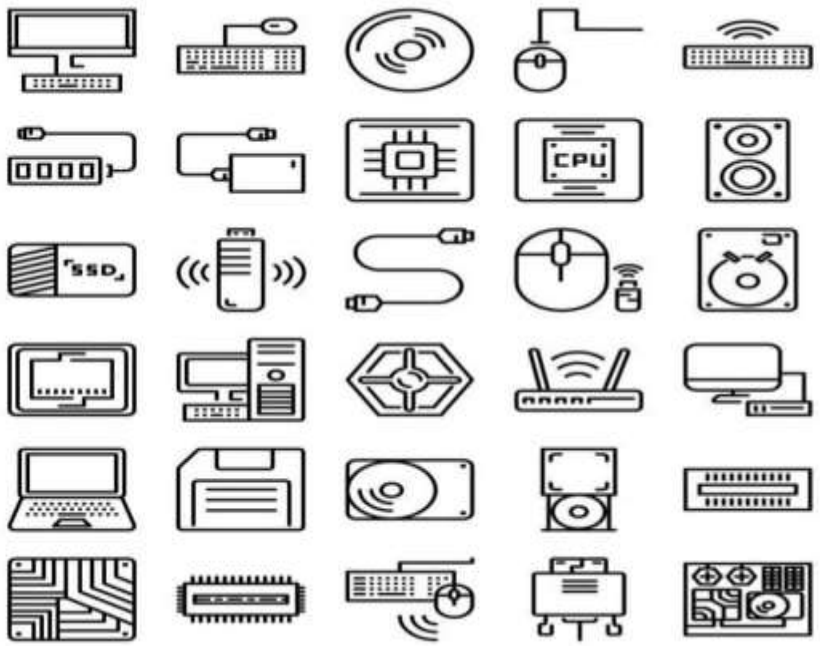
# TECHNOLOGIES



- **Frontend Development:** HTML,CSS, JavaScriptReactJS for dynamic responsive UI.
- **Backend Development:** JAVA(Springboot)as a backend framework
- **Database Management System:** MySQL is used to store and manage the URL data.
- **Infrastructure and cloud services:** route 53, elastic kubernetes services and application load balancer.
- **Version control:**GitHub

# REQUIREMENTS




**HARDWARE:** Standard devices with 8GB RAM and 1GB storage.

**SOFTWARE:** Visual StudioCode, Intellij IDEA,Java,AWS,MySQL,Github and Compatible Browsers.

# THANK YOU