

Development brief

Objective

Develop a **Custom URL Shortener with Analytics and Time-Sensitive Expiration** using PHP and MySQL.

Tech Stack

- **Backend:** Vanilla PHP or Laravel 11 (PHP 8+)
- **Database:** MySQL 8
- **Frontend:** Simple HTML/CSS/JS or Next.js (optional: Tailwind)

Requirements

1. Shorten a URL

- a. Develop a form where a user can input a long URL.
- b. The system generates a unique short code using an encoding algorithm (e.g., base62 or hash-based approach) and stores it in the database with the original URL.
- c. The shortened URL redirects to the original URL when visited.

2. Time-Sensitive URL Expiration

- a. Allow users to set an expiration time for the shortened URL (e.g., 24 hours, 7 days, custom).
- b. After the expiration time, the short URL should no longer redirect, and an error message should be displayed (e.g., "This link has expired").

3. Simple Admin Panel with Basic Analytics

- a. Track how many times each short URL has been visited.
- b. Display the last visit timestamp for each shortened URL in a simple admin panel.

4. Rate Limiting

- a. Implement **rate limiting** using the **Token Bucket** or **Leaky Bucket** algorithm, allowing users to shorten up to a certain number of URLs per minute. External PHP libraries can be used.
- b. This should prevent abuse while allowing legitimate use.

5. Database Optimization

- a. Implement database indexing on columns such as `short_code`, `expiration_date`, and `visit_count` to ensure efficient querying, especially when the database grows in size.
- b. Justify your choices for database optimizations in the README.md file.

Time-Saving Focus

- Focus on efficient URL encoding, expiration logic, and the rate-limiting.
- Minimal frontend design with HTML and optional styling (CSS or Tailwind).
- Ensure basic database optimization for scalability.

Deliverables

- Private GitHub repository. Please invite dimitris@thebrinkagency.com for access.
- A README.md with setup instructions or any further instructions needed.

Assignment Delivery

Once the project is complete, send an email to nefeli@thebrinkagency.com and cc dimitris@thebrinkagency.com with:

- Link to the private GitHub repository.
- Any other relevant details required to run the application.

Good luck,
The Brink Team