PROJECT ABSTRACT

URL Shortener Service with Click Analytics

A link-shortening service with custom aliases, a link manager, per-day click charts, country/device analytics, QR code generation and link settings. Delivered built-to-order with working demo, source code, report, PPT and viva kit.

01. Title

URL Shortener Service with Click Analytics

02. Introduction / Background

Long URLs break in print, look untrustworthy in messages, and reveal nothing about who clicked them. URL shorteners solve the first two problems; the good ones also solve the third with analytics. This project builds Shortly: a shortener where users paste a long URL and get a short link, manage links in a table with click counts and dates, inspect click-per-day bar charts, top-country and device breakdowns, generate a QR code per link, and configure aliases, expiry and password protection. The demo models the full service domain — links, clicks, aggregates — in the front end so every screen behaves like the real product.

03. Problem Statement

Shortener demos are usually one input box with a fake output. This project goes further by implementing the surrounding product: link inventory, analytics aggregation (per-day series, geography, devices), QR generation and link-level settings — the parts that make a shortener genuinely useful and give the student real features to demonstrate and defend.

04. Objectives

- Shorten URLs with instant result display and copy affordance.
- Manage links in a table with click counts and creation dates.
- Render click analytics: daily bars, country and device breakdowns.
- Generate a scannable QR code per short link.
- Provide link settings: custom alias, expiry and password protection.

05. Proposed Methodology

The service is modelled in three layers. First, the link model: short code, destination, created date, click total and settings. Second, the analytics model: a 14-day click series,

country shares and device shares aggregated per link. Third, the views: the shorten hero with result panel, the links table, the analytics dashboard with canvas bar charts, and the QR plus settings view — all reading from one consistent dataset.

06. System Architecture / Working

- Link layer: link records with codes, destinations, counts and settings.
- Analytics layer: derived series (daily clicks, geography, devices).
- Shorten view: input, result card with copy button.
- Dashboard view: stat cards, canvas bar chart, breakdown bars.
- QR view: SVG QR rendering plus alias/expiry/password settings.

07. Software Requirements

- Any modern web browser; single-file, no dependencies.
- Static hosting for the demo front end.
- For a production build: a backend (Node.js/Python) with a database for redirect resolution.
- Text editor for extension.

08. Expected Outcomes

- A working shorten flow with realistic result and copy interaction.
- A links table with five realistic entries and click counts.
- Analytics dashboard with daily chart and geo/device breakdowns.
- QR code view and link settings, all in one documented file.

09. Applications

- Marketing teams tracking campaign link performance.
- Teaching example for analytics aggregation in front ends.
- Base for a production shortener with a real redirect backend.
- Portfolio project showing SaaS-style UI design.

10. Future Scope

- Real backend with redirect resolution and click logging.
- User accounts, API keys and bulk shortening.
- A/B destination testing and UTM builder.
- Custom domains for branded short links.