

# LinkVista – Smart URL Shortener with QR Code & Analytics

## Problem Statement

In the digital age, URLs are often long, hard to remember, and difficult to share. Moreover, businesses and developers lack simple tools to track how and where their links are being accessed. Existing URL shorteners often lack analytics or are limited behind paywalls.

## Proposed Solution

**LinkVista** is a full-featured URL shortener that allows users to:

- Generate short, shareable URLs
- Automatically create QR codes
- Track click counts, devices, and locations
- Access a secure, user-specific dashboard with visual analytics

The platform is designed to be clean, secure, and mobile-responsive, making it ideal for personal and professional use.

## Objectives

- Build a secure, fullstack URL shortener
- Enable QR code generation for every link
- Track and visualize analytics like device type and location
- Authenticate users for personalized dashboards
- Deploy the app for public access and sharing

## Features

- **User Authentication** – Secure login/register system using JWT
- **URL Shortening** – Turn long links into short ones instantly
- **QR Code Generator** – Auto-created and downloadable
- **Analytics Dashboard** – See total clicks, device types, and locations
- **Pie Charts** – Visualize device and location data
- **Location Tracking** – Powered by [ip-api.com](https://ip-api.com)
- **Delete Links** – User can delete URLs
- **Private Dashboard** – Each user manages only their links

## Tech Stack

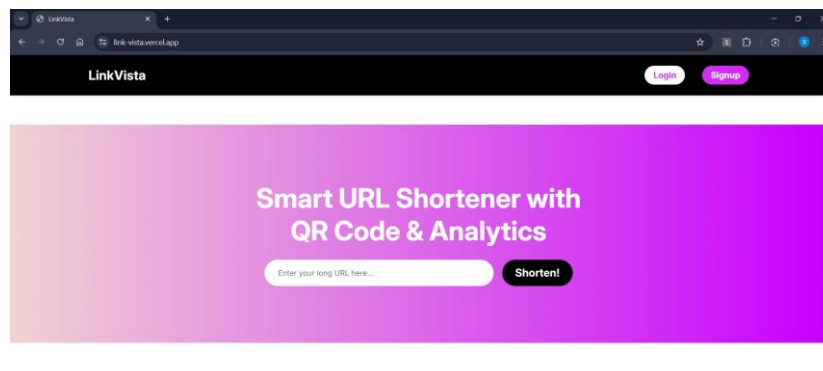
Layer	Tools Used
Frontend	React, React Router, Axios
Backend	Node.js, Express.js
Database	MongoDB, Mongoose
Authentication	JWT, bcryptjs
Charts	Chart.js, react-chartjs-2
QR Code	qrcode (Node package)
Location API	ip-api.com (for real-time IP-based geo)
Hosting	Vercel (Frontend) + Render (Backend)

## Hosted Links

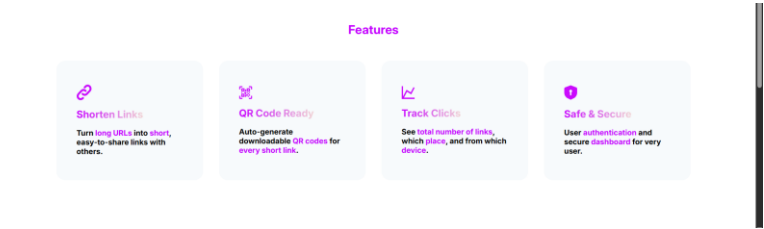
- **Live Frontend:** <https://link-vista.vercel.app/>
- **Live Backend:** <https://linkvista-5cak.onrender.com>
- **GitHub Repository:** <https://github.com/sushmithashettigar29/LinkVista>

## Sample Screenshots

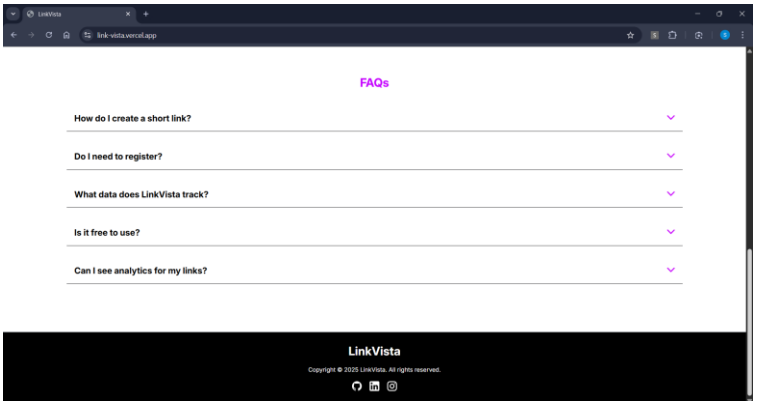
### 1. Landing Page



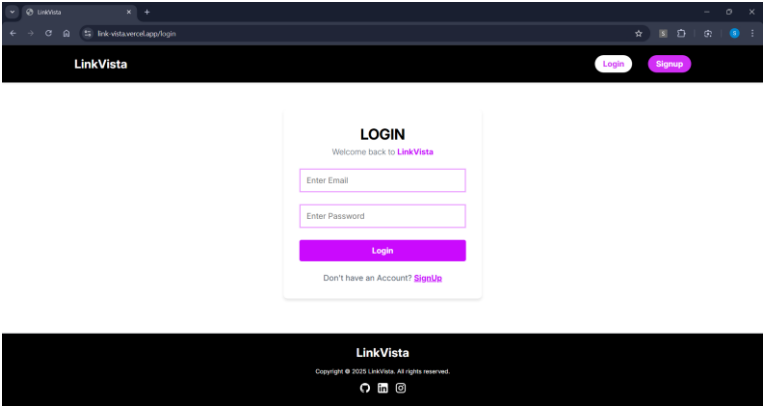
2. Feature Section



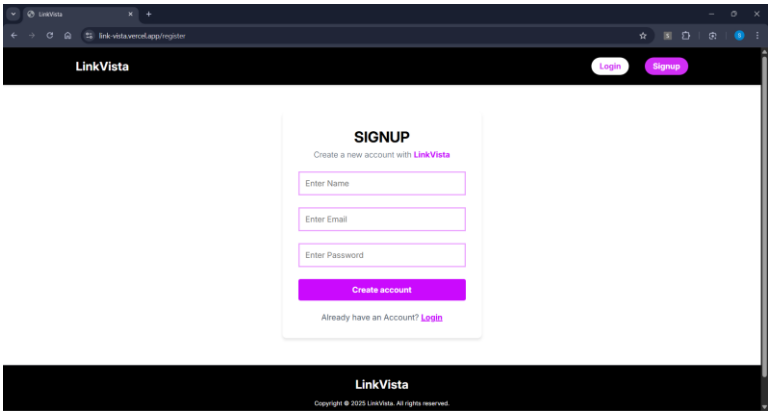
3. FAQ Section and Footer



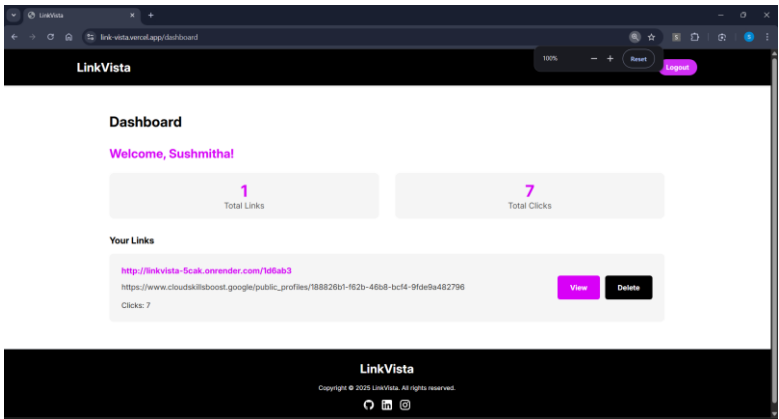
4. Login Page



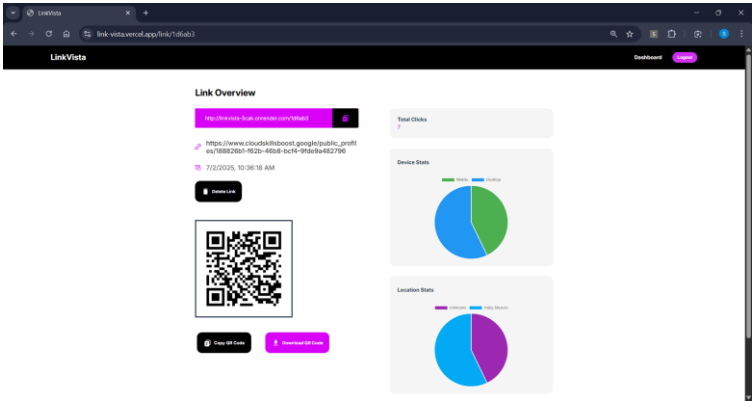
## 5. Signup Page



## 6. User Dashboard



## 7. Single Link Details Page



## How it Works (Backend Logic)

- When a user enters a URL and clicks **Shorten**, a shortCode is generated and stored with metadata.
- A QR code is generated using the Node qrcode package.
- On visiting the short link, the user is redirected, and the backend logs:
  - Device type (via User-Agent)
  - Location (via ip-api.com)
- This data is stored and used to render charts on the Link Details page.

## Developer Info

**Name:** Sushmitha Shettigar

**GitHub:** <https://github.com/sushmithashettigar29>

**Email:** [sushmithashettigar5@gmail.com](mailto:sushmithashettigar5@gmail.com)

**LinkedIn:** <https://www.linkedin.com/in/sushmithashettigar/>