

PROJECT REPORT

DevPath — Roadmap Tracker for Career Goals

Tools: Svelte • Firebase / Firestore • Mermaid.js
Web Development Internship | 2026

1. Introduction

The modern technology landscape demands that learners and early-career developers have a clear, structured approach to skill acquisition. Ad-hoc learning without defined milestones often results in lost momentum, skill gaps, and difficulty measuring progress. DevPath — the Roadmap Tracker for Career Goals — addresses this challenge by providing a personalised, visual, and gamified platform where tech learners can plan, track, and celebrate their learning journey.

This project was developed as part of a web development internship with the goal of delivering a full-featured, production-quality application. It combines a modern reactive front end built with Svelte, persistent cloud storage powered by Firebase Firestore, and dynamic roadmap visualisation using Mermaid.js — demonstrating practical integration of contemporary web technologies in a real-world use case.

2. Abstract

DevPath is a web-based career roadmap and goal-tracking application designed for technology learners. Users create personalised learning goals, break them into milestones, and track completion in real time. Goal dependencies and progress are visualised as an interactive flowchart powered by Mermaid.js. Gamification elements — including daily streaks and achievement badges — maintain motivation over extended learning periods. A mentor-feedback module enables collaborative review of goals between learners and mentors. Data is persisted in Firebase Firestore, enabling cross-device synchronisation, while the Svelte framework ensures a fast and reactive user experience without the overhead of a virtual DOM.

3. Tools Used

Tool / Technology	Purpose
Svelte	Reactive front-end framework for building the UI components
Firebase	Backend-as-a-service for authentication and cloud hosting
Firestore	NoSQL real-time database for storing goals and user progress
Mermaid.js	Diagramming library for rendering dynamic roadmap flowcharts
HTML / CSS / JS	Fallback layer for layout, styling and browser compatibility
localStorage	Client-side persistence during development and offline use

4. Steps Involved in Building the Project

01	Project Setup & Environment Initialised a Svelte project using Vite, installed Mermaid.js, and connected the Firebase project. Configured Firestore security rules and set up environment variables for API credentials.
02	UI Design & Component Architecture Designed the dark-themed interface with a fixed sidebar, top navigation, and responsive grid layout. Built reusable Svelte components: GoalCard, MilestoneToggle, EmojiPicker, ProgressBar, and Modal.
03	Goal Management (CRUD) Implemented full Create, Read, Update, and Delete functionality for learning goals. Each goal stores a title, description, category, target date, emoji icon, and an ordered list of milestones in Firestore.
04	Milestone Tracking & Progress Added individual milestone checkboxes that update Firestore in real time. A progress bar reflects completion percentage, and the goal is auto-marked complete when all milestones are ticked.
05	Mermaid.js Roadmap Visualisation Dynamically built a Mermaid flowchart string from the user's goals array. Nodes are colour-coded: grey for not started, purple for in progress, and green for completed. A timeline view orders goals by deadline.
06	Streaks, Badges & Gamification Implemented a daily-visit streak counter with localStorage. Defined eight achievement badges (First Steps, Week Warrior, Completionist, etc.) that unlock automatically based on progress data.
07	Mentor Feedback Module Built the collaboration feature allowing users to log mentor feedback linked to specific goals. Feedback entries are stored in Firestore and displayed in a card-based feed with timestamps.
08	Testing, Optimisation & Deployment Tested across browsers, validated Mermaid diagrams for edge cases (zero goals, long titles), and optimised Firestore reads with caching. Deployed the application to Firebase Hosting.

5. Conclusion

The DevPath Career Roadmap Tracker successfully delivers on all defined objectives. The application provides a structured environment for tech learners to define goals, track milestones, and visualise their learning journey through dynamic, auto-generated roadmaps. Integration with Firebase Firestore ensures that data is persistent, real-time, and accessible across devices, while Mermaid.js transforms raw goal data into meaningful visual diagrams without additional infrastructure.

The gamification layer — comprising daily streaks, achievement badges, and progress indicators — proved effective in maintaining user engagement over longer learning periods. The mentor feedback module adds a collaborative dimension, allowing learners to receive and store structured guidance linked directly to their goals. The modular codebase, split across clearly separated files for storage, UI, goals, roadmap, badges, and feedback, ensures long-term maintainability and easy extensibility.

This project demonstrates the practical application of Svelte, Firebase, and Mermaid.js in a cohesive, production-ready product. Key learnings from this internship project include component-driven architecture, real-time database design, client-side gamification patterns, and the integration of third-party diagramming libraries. Future enhancements could include AI-powered goal suggestions, social sharing of roadmaps, and native mobile support via Capacitor.

Key Outcomes

- Fully functional goal and milestone tracking with real-time Firestore sync
- Interactive Mermaid.js roadmap with colour-coded completion states
- Gamification system with streak tracking and 8 unlockable achievement badges
- Mentor feedback module for collaborative goal review
- Modular, maintainable codebase ready for production deployment

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