Google Summer of Code 2025 Proposal

Personal Information

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Degree Program: B.Tech in Electronics and Communication Engineering
Year of Study: Third Year

Title

ChromeStatus Search UI Enhancement Project

Synopsis

ChromeStatus.com and WebStatus.dev are key resources that provide developers and browser engineers insights into the availability and progress of web platform features. Currently, the search UI in these applications could be more helpful to users by offering smarter, more responsive, and user-centric interactions.

This project aims to refactor and enhance the search autocomplete and history experience by introducing reusable search components, direct match suggestions, typo correction, and a search history. The goal is to improve usability and efficiency for ChromeStatus users globally.

Benefits to the Community

- **Better search productivity** for web developers and browser engineers using ChromeStatus.
- **Reusable components** that can benefit both ChromeStatus.com and WebStatus.dev.
- **Increased discoverability** of features through typo correction and smart suggestions.
- **Enhanced UX** by remembering recent searches and allowing quick re-access.
- **Contribution to open-source Chromium ecosystem**, benefitting thousands of users worldwide.

Deliverables

Period	Deliverable
Community Bonding (May 20 - June 16)	Understand existing codebases, study best practices in search UIs, discuss project scope with mentors
Phase 1 (June 17 - July 15)	Refactor current autocomplete logic into reusable component; add direct match results in dropdown

Period	Deliverable
Phase 1 Evaluation (July 15 - July 19)	Working search component with direct links and minimal setup for integration on both websites
Phase 2 (July 20 - August 12)	Implement typo correction, corpus word suggestion, and search history support
Final Week (August 13 - August 18)	Add user tracking and feedback measurement tools, polish UX, test thoroughly
Final Evaluation (August 19 - August 26)	Fully integrated feature-ready search UI with documentation and demo video

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Technical Details

Technologies involved:

- **Frontend:** TypeScript, HTML, CSS, Lit Web Components (if used)
- **Backend:** Python or Go (used in Chromium web tools)
- **Data format:** JSON (search index, history cache)
- **UX:** Material Design Guidelines or native styling
- **Testing:** Unit tests with Jest or similar, E2E using Puppeteer or Playwright

Key Features:

- Reusable autocomplete component
- Fuzzy matching and typo correction
- Keyboard and mouse accessibility
- Search history saved locally or via user session
- Corpus-based suggestions for incomplete queries

Timeline

Community Bonding: Familiarize with codebase, plan UI behavior, align with mentors
Week 1-4: Build reusable autocomplete UI, fetch suggestions from feature DB
Week 5-6: Direct match linking, start corpus integration and suggestion engine
Week 7-9: Typo correction (e.g., Levenshtein or custom heuristic), search history
Week 10-11: Cross-browser testing, usage analytics instrumentation
Week 12: Final bug fixes, cleanup, documentation, and PR submission

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About Me

I’m a third-year engineering student with a deep interest in building intuitive and scalable web applications. With a strong foundation in frontend technologies and experience using TypeScript, React, and Node.js, I enjoy crafting clean interfaces and solving real-world problems. I’ve contributed

to open-source through Hacktoberfest and worked on complex search and navigation UIs in my projects.

Why Me

- Hands-on experience with modern frontend tools
- Familiarity with writing modular UI components
- Strong debugging and testing habits
- Prior work with search-based applications
- Good communicator with experience working asynchronously

Commitment

I will dedicate over 30 hours a week to GSoC. My academic schedule has been adjusted to prioritize this opportunity, and I'm committed to engaging actively with the community and mentors throughout the summer.

Future Vision

After GSoC, I plan to contribute continuously to Chromium's open web tools. Potential next steps include enhancing filtering options, adding voice-based search, or supporting deep linking and bookmarking of feature pages.

Contact

Feel free to contact me via GitHub [akdwivedi-explorer (Ashutosh Kumar Dwivedi)] or email at akumardwivedi77@gmail.com.

Thank you for considering my proposal!