

## Industry Logo



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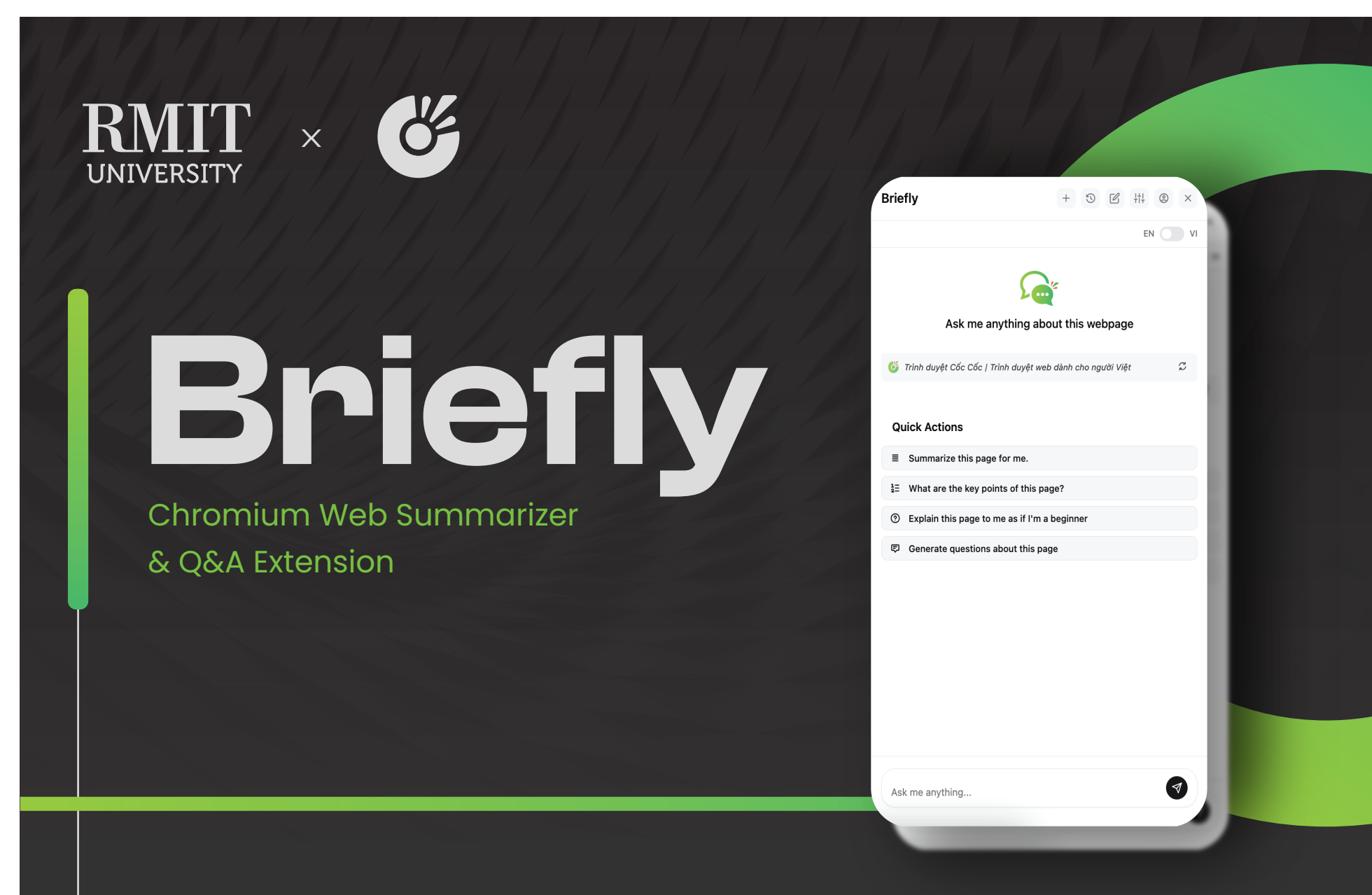
## Chromium Web Summarizer & Q&A Extension

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### BACKGROUND & MOTIVATION

Internet users today face an overwhelming amount of information, ranging from academic materials to news articles and industry reports, making it difficult to read and grasp content quickly. Existing AI tools like ChatGPT or Perplexity can provide summarization and Q&A, but they often require manual copy-paste, come with high subscription costs, and are not optimized for Vietnamese. This creates a clear gap: there is a need for a free, user-friendly, and localized solution built directly into the browser to help users learn, work, and consume information more effectively.



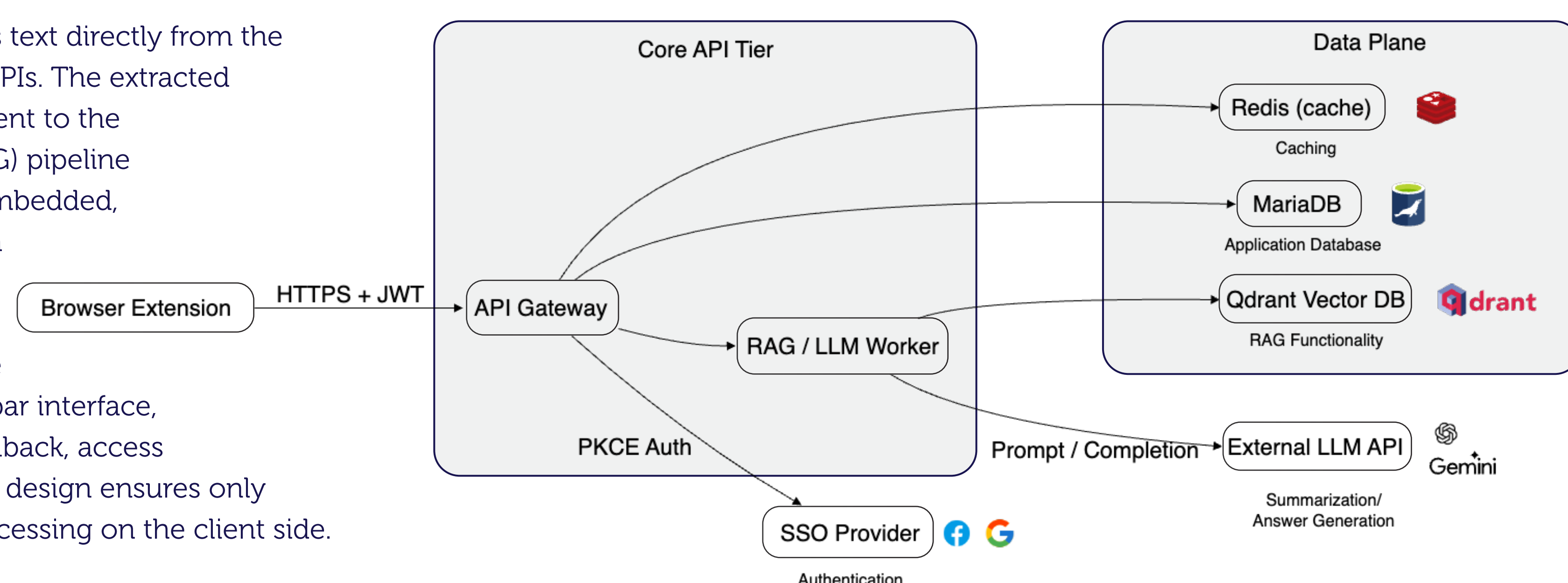
### OBJECTIVE

The project aims to build a Chromium browser extension (compatible with Chrome, Coc Coc, Edge, Brave) that extracts text from web pages and PDFs, summarizes content, and enables contextual Q&A directly on the page. The extension prioritizes a smooth, minimal workflow without manual copy-paste, supports both Vietnamese and English, and is free to use for the general public.

### METHODOLOGY

The workflow begins when the extension extracts text directly from the current webpage or embedded PDF using DOM APIs. The extracted content, along with the user's query, is securely sent to the backend. A Retrieval-Augmented Generation (RAG) pipeline processes the request: relevant text chunks are embedded, stored, and retrieved from a vector database, then combined into a prompt for the LLM. The LLM generates summaries or contextual answers that remain grounded in the original content. The results are streamed back and displayed in a sidebar interface, where users can adjust response length, give feedback, access conversation history, or take notes. A privacy-first design ensures only essential text is transmitted, keeping sensitive processing on the client side.

#### Overall system architecture & external / internal interfaces



### EXPERIMENT & RESULT

The extension was evaluated through both internal benchmarks and user testing. Summarization accuracy reached over 80%, with most responses closely aligned with webpage content, and 85% of user ratings gave 4 stars or higher. Latency was measured with a peak response time below 8 seconds and a 90th percentile under 5 seconds, meeting the design targets. In addition, the hallucination rate was kept below 10%, and cross-browser compatibility was confirmed on Chrome, Coc Coc, Edge, and Brave.

### FUTURE WORK

Future improvements include extending multilingual support and optimizing performance for Vietnamese. The system will focus on reducing hallucinations, improving retrieval accuracy, and scaling infrastructure with Kubernetes and large-scale vector databases.

### CONCLUSION & FINDINGS

The AI browser extension directly enhances the Coc Coc ecosystem by introducing intelligent summarization and contextual Q&A features that are not available in its current browser offerings. By supporting the Vietnamese language, ensuring fast performance, and remaining free to use, the extension strengthens user engagement and retention within Coc Coc's platform. With its practical design and proven usability, it holds strong potential to become a strategic addition to Coc Coc's product portfolio and a key differentiator in the local browser market.