

**CANADIAN ENGLISH DICTIONARY: A HOME FOR CANADIAN
ENGLISH**

by

Ali Noorani, BA. Language & Literature, Shahid Beheshti University, 2007.
Adesewa Ajomale, BSC. Mass Communication, Babcock University 2021.
Oladotun Oshadami, B. Eng. Computer Engineering, Nile University of Nigeria
2023. Youssef Elbadi, BA. Business Administration, Washington State University
2021.

An MRP

presented to Toronto Metropolitan University

In partial fulfillment of the requirements for the degree

of

Digital Media

In the Program of

Master of Digital Media

Toronto, ON, Canada, 2024

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Canadian English Dictionary: A Home for Canadian English

(Group Reflection Paper)

Ali Noorani, Adesewa Ajomale, Oladotun Oshadami, Youssef Elbadi

Master of Digital Media, 2024

Digital Media

Toronto Metropolitan University

ABSTRACT

The Canadian English Dictionary (CED) project represents a collective endeavor to create a definitive online resource for Canadian English speakers. Our team, composed of international students, embarked on this project with the aim of filling a critical gap in linguistic resources by emphasizing Canadianisms and other unique linguistic features that define Canadian English. We recognized the importance of offering an accessible platform that not only modernizes how dictionaries are used but also celebrates Canadian cultural identity. The CED project prioritizes intuitive navigation, robust search capabilities, mobile responsiveness, and user engagement, reflecting a shared commitment to addressing the evolving needs of language learners and enthusiasts in a digital age. This reflection outlines the project's objectives, design considerations, and our journey in contributing to a meaningful initiative that champions the evolution of Canadian English.

Keywords: Dictionary design, User experience design, User interface design, Information design, Canadianism, Intuitive navigation, Product design, Canadian English, User Engagement

ACKNOWLEDGEMENTS

We would like to thank Mr. John Chew of the Canadian English Dictionary from the bottom of our hearts for his invaluable help and availability during this effort. His assistance was crucial in guiding us through the difficulties and nuances of creating the UX design for their online platform.

We would also like to sincerely thank Dr. Michael Carter, Professor Namir Ahmed and Professor Lorena Escandon for their invaluable efforts in securing this industry partnership and offering their constructive criticism during the project. Furthermore, we would like to thank Ali Noorani, Adesewa Ajomale, Oladotun Oshadami, and Youssef Elbadi for their hard work and commitment. This initiative was made possible by their dedication and teamwork, and we are proud of what we have achieved together.

We want to express our gratitude to everyone who helped make this endeavor a success.

NOTES TO READER

The current document has been formatted using a certain accessibility methodology that breaks down the article into more headings and subheadings than it is customary in academic dissertations in order to help visually impaired readers scan the text easier on-screen readers.

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INTRODUCTION

Motivation and Purpose

Our team's journey with the Canadian English Dictionary project was inspired by a profound understanding of the unique challenges and opportunities presented by Canadian English. The project emerged from a shared desire to celebrate and document the linguistic nuances that define Canadian English, which are often overlooked in mainstream dictionaries. This project, led by a group of international students, aims to create a digital platform for Canadian English.

The Canadian English Dictionary is a project being planned by a consortium led by Editors Canada, with the participation of the Canadian English Lab at UBC and the Strathy Language Unit at Queen's University. It will be a general dictionary for contemporary Canadian English-speakers, reflecting all the different ways in which our language is written and spoken across the country. It will be published progressively in digital form beginning in 2024, and when the digital edition is initially complete, there will be a print edition.

The absence of a comprehensive resource dedicated to Canadian English has resulted in a gap that we were eager to fill. According to Boberg (2014), Canadian English is a distinct national variety with its own vocabulary and phonetics. We saw this project as an opportunity to help capture and preserve Canadianisms, words and expressions unique to Canada, which serve as important cultural markers. According to Brinton & Fee (2001), Words and phrases that are specific to Canada, known as "Canadianisms," are important cultural markers that represent the

nation's regional and national identities. They argue that knowledge of the development of Canadian English and its cultural background depends on a comprehension of these unique linguistic characteristics. The authors stress that since Canadianisms offer insights into the nation's varied social and cultural experiences, preserving and recording them is essential to recording Canada's linguistic legacy. Their research emphasizes how crucial it is to acknowledge Canadianisms as essential components of Canadian cultural identity as well as language peculiarities. By developing the CED, we aim to contribute to a greater understanding and appreciation of Canadian English, ensuring its unique features are recognized and valued, while giving the public a chance to access the vocabulary and information they need.

Digital Transformation and User Engagement

One of the central challenges we faced was adapting the dictionary to meet the needs of a modern, digital audience. With the digital transformation of information consumption, we recognized the necessity of transitioning traditional dictionary formats into more dynamic and interactive online platforms. Nation and Chung (2009) highlight the advantages of digital dictionaries, such as immediacy and interactivity, which align with the expectations of contemporary users.

Our team was committed to designing a platform that caters to the newer generation's learning preferences. This demographic prefers digital resources that are engaging, visually appealing, and easy to navigate. We prioritized creating a user-friendly interface that emphasizes clarity of navigation, robust search functionality, and mobile responsiveness. Nielsen (2012) notes the importance of good navigation design for user satisfaction, and we incorporated this principle into the CED to enhance the user experience.

OBJECTIVES

In developing the Canadian English Dictionary, we focused on several key design considerations:

Emphasizing Canadianisms

A key focus of our project was highlighting Canadianisms and regional language variations. These elements reflect Canada's unique cultural and historical context, distinguishing Canadian English from other varieties. By providing context and usage examples specific to Canadian English, we aimed to celebrate and preserve Canada's linguistic heritage. Clarke (2008) notes that Canadianisms are markers of national identity, and we embraced this perspective in our project.

Catering to Canada's Increasingly Diverse Demographics

Canada celebrated its population reaching 40 million people on July 3, 2023 (Statistics Canada, 2023). This was over 1.1 million people more than the previous year (Statistics Canada, 2023). As the government agency for statistics reported, almost 98% of this growth in the one year period – a record by itself since 1957 (+3.3%), came from net international migration, with merely 2% coming from the difference between births and deaths (Statistics Canada, 2023). In 2021, one in four people in Canada (26.5%) were from the racialized population, twice the corresponding share (13.4%) in 2001 (Statistics Canada, 2003 and 2022a). The concept of “racialized people” is based on the visible minority variable in the Canadian census (Statistics Canada, 2023). The Employment Equity Act defines visible minorities as “persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour” (Statistics Canada, 2022b). According to data from the same source, racialized immigrants encounter barriers to

adaptation, such as *language proficiency* and *acculturative stress* (Statistics Canada, 2022b).

These facts underline the importance of access to a high-quality Canadian English dictionary to improve the lives of Canada's increasing racialized population, as Carter and McCarthy (1988) say, vocabulary is the most essential part of language proficiency. Approximately 95% of graduate students learning English as a foreign language use dictionaries for academic purposes (Hagood, 2003; Noor, 2011; L. Shen, 2006). Boulton & Cook (2017) say that 'Dictionaries are amongst the most widely used tools for foreign and second language (L2) learning and can help with both frequent and infrequent items.

Science of Learning

In the process of designing the online dictionary, the team questioned how to better engage the users and help them commit the new vocabularies to mind. The team used Science of Learning principles put forward by Hirsh-Pasek, K., Zosh and others (2015) (Noorani, 2024). Efforts were made to build the four principles of active learning, engagement, meaningfulness, and social interaction into the CED experience through various features (Noorani, 2024).

RESEARCH PROCESS

To ensure the successful development of the Canadian English Dictionary (CED) website, our team established a comprehensive long-term strategy centered around meticulous research. We dedicated the first two months of the project to the research phase, focusing on designing a website that is not only innovative but one that also aligns with our client's needs. This phase was essential in building a strong foundation for the project, as it guided our decisions and ensured every feature of the CED was relevant and user-friendly.

Competitor Analysis

Our research began with an in-depth analysis of existing online and print dictionaries to understand their strengths and weaknesses. This competitor analysis was crucial in identifying industry standards and gaps in the market. By examining successful platforms, we gained insights into effective features and user interface designs. As Porter (2004) emphasizes, understanding the competitive landscape allows for creating a sustainable competitive advantage. Recognizing what works and what doesn't enables us to refine our approach, ensuring we stand out in terms of usability and user satisfaction. Notable weaknesses in other dictionaries were inconsistencies under entry sections (e.g., adjacent words being grouped with the definitions), parts linking to other pages, fonts that were too large or too small, visual chaos disrupting the entry page flow, partly due to overuse of in-line ads, empty or repeated sections, etc.

UI/UX Design and Theories

Our UI/UX designers crafted an intuitive interface that prioritized ease of navigation across various devices. Several UI/UX theories were incorporated to enhance user experience:

Hick's Law

Hick's Law posits that the time required to make a decision increases with the number and complexity of choices (Hick, 1952). We used clear, concise labeling to guide users through the platform and reduced navigation options to reduce cognitive load and decision-making time. This method lessens the possibility of user irritation and cognitive overload while also ensuring that users can locate information quickly and effectively. Our goal was to build a more intuitive user experience that adheres to the principles of successful design by concentrating on reducing distractions and maximizing content display. The idea that lowering cognitive load can improve

the user experience overall is supported by research by Kretzschmar et al. (2013). This is especially true when users are dealing with digital content, where accessibility and clarity are crucial. To improve the decision-making process for entry words that have several meanings, we iterated on several designs including grouping of parts of speech (nouns, verbs, adjectives, etc.) and other ways. In the end, we came up with an original solution that organizes the various meanings of an entry by very concise and brief descriptions, leading users directly to the specific intended meaning.

Fitts' Law

According to Fitts' Law, moving to a target area takes a certain amount of time depending on its size and distance from the source (Fitts, 1954). We enhanced general usability by adding larger buttons and clickable places, especially on mobile devices. In line with Fitts' Law, this design decision minimizes effort needed to choose targets correctly, simplifying user interactions. Our goal was to enhance usability and accessibility by making interactive elements larger so that users could interact with the platform in a more comfortable and natural way. This strategy is supported by research on visual attention and user interface design, which shows that bigger focus areas can greatly improve the user experience and interaction effectiveness (Yan, Zhang, Deng, & Liu, 2022).

Gestalt Principles

In order to enhance visual hierarchy and direct user attention to crucial areas, Gestalt principles were applied (Noorani, 2024). The application of principles like proximity, similarity, and closure resulted in a unified design that guides users through the website in an organic manner. We made sure related elements were grouped together, visually similar items were categorized,

and unfinished shapes were interpreted as complete by utilizing these concepts. According to studies on visual perception and design effectiveness, this method improves the user's capacity for intuitive navigation and comprehension of the content (Wagemans, van Lier, & van der Helm, 2012). To test the effectiveness of groupings, we experimented with the spacing (Figure 1) with three users and found that grouping elements of the same part helps readability.

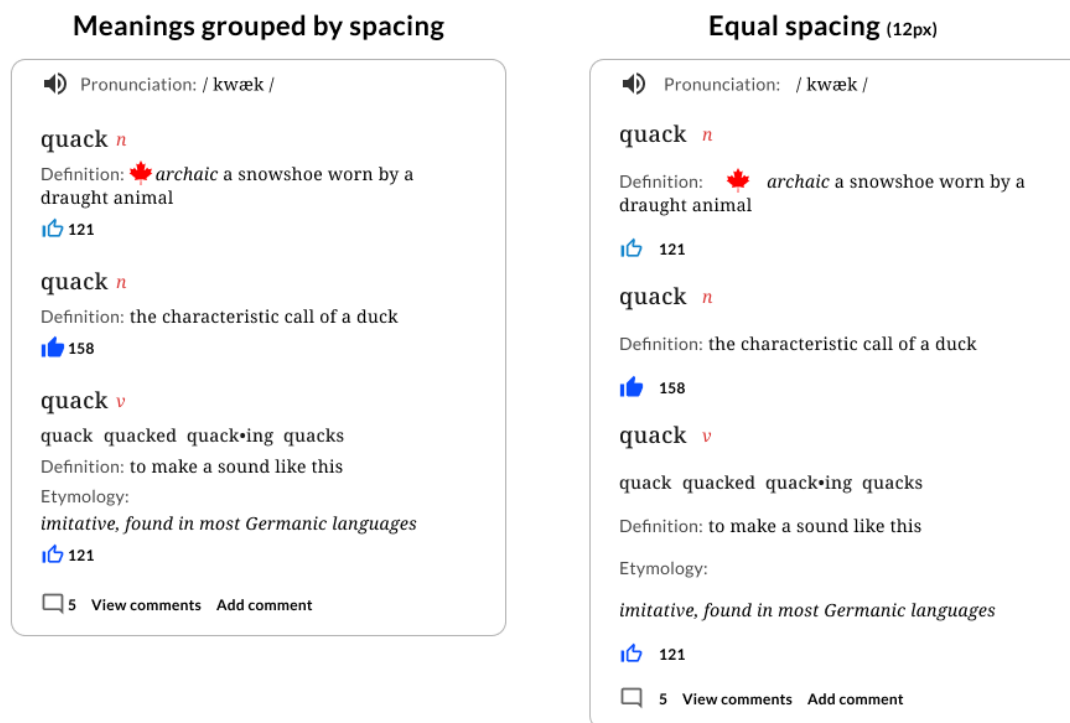


Figure 1 Two versions comparing grouped sections of the entry page (L) vs. equally spaced-out version (R).

Content-specific design

A dictionary is viewed in its purest form by its content. Although the writing and editing of content was beyond our mission, we put content front and center in this project. This project was not merely a web design project but a full-scale research project to provide solutions for a public-facing Canadian dictionary to improve its usability, usefulness, accessibility and appeal.

To this end, with input from language experts and editors, as well as insights gleaned from the general public through our survey and user experience design principles, we curated a comprehensive collection of items to consider in dictionary design, such as definitions, pronunciations, examples, run-on entries, multiple-meanings, derived meanings, word origins, etc. This approach informed the dictionary design process, helping us to step away from generic UI design screens and develop original solutions that match the needs of CED's diverse users and writers.

Personas and User Stories

To ensure a user-centered design, we developed detailed user personas and stories. Personas are fictional characters representing different types of users who might interact with the website. By creating personas, we were able to empathize with users' needs and motivations, which informed the design and functionality of the site (Cooper, Reimann, Cronin, & Noessel, 2014).

User stories were used to express how our website would provide value to these personas.

According to Cohn (2004), user stories are instrumental in agile development, as they ensure that the design is aligned with user expectations and needs.

Contextual Inquiry

To understand real-world perceptions of Canadianisms, we conducted a video survey in Yonge and Dundas Square, Toronto. Respondents were asked whether they knew certain Canadian terms and if a Canadian English dictionary highlighting these terms would be useful. This strategy provided a range of responses, demonstrating the need for a comprehensive resource to address the knowledge gap on Canadianisms (Oshadami, 2024). According to Holtzblatt and Beyer (2017), contextual inquiry involves understanding users' behaviors in their natural

environment, and our survey applied this principle, offering authentic feedback that emphasized the project's importance. A key finding from the interviews was an interviewee from Newfoundland and Labrador mentioning that, in the future, the design could be developed to account for how people from different parts of Canada use certain terms. This feedback highlighted that, just like other regions of the country, Newfoundland and Labrador has specific terms applicable to its local context (Oshadami, 2024).

Survey

The survey aimed to understand the preferences and needs of potential users of a Canadian English dictionary, gathering demographic information such as age, gender, education, location, English proficiency, and dictionary usage habits. To measure the interest in a Canadian English dictionary, respondents were asked about their reasons for using such a resource and the features they would find valuable, including layout, navigation, and mobile-friendly design. The survey also asked about users' experiences with existing Canadian English dictionaries, their knowledge of Canadian words and regional differences, and the importance of updated content that reflects Canadianisms and regional variations. It emphasized themes like historical appreciation, empowerment, inclusivity, and cultural integration, highlighting the role of cultural relevance in educational materials (Gay, 2018). Additionally, respondents shared their views on the importance of including Canadian-specific content and examples, as well as their use of digital devices to access language resources, providing insights that will guide the development of a relevant and practical Canadian English dictionary (Elbadi, 2024).

Gathering user feedback was a critical component of our research process. We conducted a survey targeting a diverse pool of dictionary users to collect insights into their preferences and

pain points. This approach allowed us to identify which features users enjoyed and which they found lacking. Surveys play a role in UX research by gathering data. Advocates emphasize that surveys offer perspectives on user preferences, behaviors and satisfaction guiding design decisions. With their reach and effective data collection, participants' surveys empower researchers to make informed choices that elevate the user experience (Lazar, Feng, & Hochheiser, 2017).

One of the challenges our team was concerned about was not getting a diverse enough group of people to take our survey. We did not want the survey respondents to come from just one demographic group; we wanted a wide range of ages, genders, and ethnic backgrounds (Groves, 2008). Additionally, we made sure that the people taking the survey were all Canadian or at least living in Canada. We specifically aimed to survey individuals who use dictionaries, rather than just anyone who might take the survey. As a result, we gathered a final sample size of 39 survey responses. (Elbadi, 2024).

DESIGN PROGRESS

Dual-Layout Approach in Entry page

Our user survey revealed a significant divide in preferences for the Canadian English Dictionary website. The majority of respondents expressed a desire for a feature-rich, interactive interface, while a minority advocated for a more traditional, minimalist approach reminiscent of print dictionaries (Noorani, 2024).

To address this spectrum of user preferences, we developed a dual-layout strategy:

1. Interactive Experience: This layout caters to users seeking a modern, digital-first experience.

It features:

- Easy scanning of multiple meanings and definitions
- Interactive elements such as user comments and discussions
- Additional linguistic resources and tools

2. Compact Print Version: Designed for users preferring a traditional approach, this layout offers:

- A clean, uncluttered interface focusing solely on definitions
- Larger font sizes for improved accessibility, particularly for older users
- A format closely resembling traditional print dictionaries

This approach aligns with a key principle of user experience design: providing users control over their interaction with the platform. By allowing readers to choose between these two distinct layouts, the Canadian English Dictionary caters to diverse user preferences and needs.

This dual-layout offers benefits such as being more inclusive accommodating needs of various users, being more accessible and boosting the experience by offering control and choice over how they use the tool (Noorani, 2024).

Engaging Gen Z: An Interactive Homepage Feature

In designing the Canadian English Dictionary website, we aimed to address the diverse needs of our user base, particularly the digitally native Generation Z. To achieve this, we developed an innovative, interactive feature for the homepage, activated via a "Gen Z toggle." A well-designed user interface and user experience in an education app is able to optimize learning outcomes (Vlasenko et al, 2022; Saxena et al, 2023).

When this feature is enabled, the homepage background transforms into a dynamic, visually engaging display of challenging vocabulary. These words are presented in a graphical style designed to appeal to younger users' aesthetic preferences, teasing their brain to read them. The interactivity of this feature allows users to click on any displayed word to instantly access its definition, fostering a sense of exploration and discovery.

This Gen Z mode serves two primary purposes:

1. Educational Engagement: It caters to the younger generation's heightened exploratory interests and cognitive capacities, offering linguistic teasers that encourage learning in an engaging manner.

2. Dynamic User Experience: The feature's randomized word selection ensures that the homepage remains fresh and interesting with each visit, avoiding the monotony often associated with static designs.

Unlike traditional fixed images or designs commonly used on homepages, this dynamic word list directly relates to linguistics and lexicography. It provides a richer, more relevant experience for users while maintaining the core functionality of the dictionary.

Importantly, this feature is designed with user control in mind. Recognizing that some individuals may find such interactivity distracting, we made it optional. Users can easily toggle the feature on or off, allowing those who prefer a more focused experience to access the core dictionary functions without additional visual elements.

This approach reflects our commitment to inclusive design. By offering a feature that appeals to Gen Z users without mandating its use, we strive to create a dictionary that adapts to various user preferences and needs. This balance between innovation and functionality ensures that the

Canadian English Dictionary remains accessible and engaging for all users, regardless of their generational cohort or individual preferences.

The Gen Z feature embodies our broader philosophy of creating a dictionary that is not just a reference tool, but an interactive platform that encourages linguistic exploration and learning. It represents a step towards making lexicography more engaging for younger generations while respecting the needs of all users.

Marking Canadianisms

The most distinctive element of CED in comparison to other dictionaries is acting as the most comprehensive source for the unique Canadian variations and derivations. Thus, it was paramount to clearly mark the unique flavor of Canadian English wherever possible. This also serves to inform and educate the public on which words have been transformed through Canadian influences. To help users better recognize Canadianisms, we marked them (Figure 8) with a distinctive maple leaf icon both in the head word and in each respective meaning where applicable (Noorani, 2024).

Clarity of Navigation

We understood the importance of intuitive navigation in ensuring that users can access the dictionary's content effortlessly. By implementing features such as intuitive menus and categorized word lists, we aimed to provide a seamless and enjoyable user experience. This approach aligns with findings that emphasize the role of visual design in enhancing usability and guiding user interaction, particularly in digital environments (Kretzschmar, Pleimling, Hosemann, Fussel, Bornkessel-Schlesewsky, & Schlewsky, 2013).

Search Functionality

The search feature was designed to be robust and accurate, offering auto-suggestions, spelling corrections, and filters to enhance user experience. Lew and Doroszewska (2009) emphasize the impact of efficient search mechanisms on user satisfaction, and we prioritized this in our design.

Mobile Responsiveness

Recognizing the growing use of mobile devices, we ensured that the CED website is optimized for various platforms, allowing users to access the dictionary conveniently from any device. This mobile-first approach aligns with Marcotte's (2010) emphasis on responsive web design.

According to Marcotte it is essential to implement design in order to ensure that websites deliver a well optimized user experience, across various devices and screen sizes.

Readability and Accessibility

Readability and accessibility were central to our design philosophy. We aimed to create a visually pleasing interface with clean and readable fonts while adhering to web accessibility standards (Caldwell, Bellur, & Geske, 2008) to ensure inclusivity for all users, they highlight the significance of following web accessibility standards to guarantee that websites are welcoming to all users, including those with disabilities. They point out that designing an interface with clear easy to read fonts and adhering to accessibility guidelines contributes to making web content accessible for people with different impairments. The authors emphasize that incorporating accessibility elements into design not only fulfills obligations but also enhances the user experience and usability overall.

We discussed the importance of distinguishing characters clearly, particularly between the numeral 1, lowercase 'l,' and capital 'I.' We found that Google's Noto Sans family meets these

requirements, and the client was open to using it. We had an in-depth conversation about the merits of serif versus sans serif fonts, considering factors like readability and accessibility (Elbadi, 2024). Research suggests that sans serif fonts might be easier to read for people with dyslexia, as it makes the text look less crowded (Rello, 2014). As a result, our goal was to achieve a balance between visual appeal and user-friendliness.

Building a Community

We also sought to create a sense of community and engagement through the CED project. By incorporating features that encourage user interaction and participation, such as user-contributed content, feedback systems, and social media integration, we aimed to foster a collaborative and dynamic platform. Chevalier and Gheerbrant (2008) highlight the importance of community involvement in enhancing the richness and accuracy of linguistic resources.

Our reflection on the CED project underscores our collective commitment to creating a valuable resource for Canadian English speakers and language enthusiasts. By focusing on user-friendly design, robust functionality, and cultural celebration, we aimed to contribute to the ongoing evolution and recognition of Canadian English as a distinct and vibrant linguistic variety.

Other Pages

In our project for the Canadian English Dictionary (CED) platform, we designed a profile page that aimed to be both user-friendly and informative. Drawing on features from various online dictionaries and platforms, we sought to create a design that would enhance personalization and interaction for users. The profile page included settings to alter the user's profile picture, name, biography, favorite words, recent activity, word of the day, quizzes, and learning goals. Research by Ellison, Steinfield, and Lampe (2007) underscores the importance of profile pictures in online

interactions, noting that they contribute significantly to creating this sense of identity, ultimately leading to higher engagement levels. These features were selected to strengthen user engagement by establishing a more personal connection with the platform (Ajomale, 2024).

Through discussions with John Chew, we finalized several new features to improve user experience, such as enabling users to delete their profiles if they choose, thus providing more control over their data. To address privacy concerns, we added a privacy opt-in feature for storing activity data, such as recent searches and favorite words. We also enhanced the profile page with additional features such as recent searches, the ability to sort favorite words, and achievements.

The list of articles page in a dictionary usually has published articles or information about different editions, versions, and related works. We designed two versions of this page. The first had large icons arranged vertically, each with a short description underneath. The second version had smaller icons arranged horizontally, with more detailed information about the articles.

Research shows that icon size plays an important role in how we process information (Yan, 2022). Good visual attention helps us understand visual information better. To make icons easy to recognize on different screens, it is important to find the right balance between icon size and screen resolution (Yan, 2022).

One study looked at how quickly and accurately people could select items using text (Yan, 2022). It found that combining text and icons resulted in the highest accuracy, while menus with only icons were the fastest but least accurate (Yan, 2022). The study also showed that smaller icons led to slower selection times (Yan, 2022). Based on these findings, the client and the team decided to use the version with large icons arranged vertically. They originally chose a pure

white background for all the pages, as a light background makes the text stand out (Rello, 2014). However, they found the bright white too harsh and distracting. Instead, they opted for a light shade of gray or off-white, which was easier on the eyes while still providing good contrast (Elbadi, 2024).

After designing the way the list of articles appeared on the website, we designed the look of individual articles when opened on the CED website. For the articles page, we designed a seamless structure with a hero image and "key quote" section to highlight major ideas, drawing on personal experience and Lidwell, Holden, and Butler's (2010) principles on effective visual design and user engagement. Meyer's (2017) findings on the effects of text highlighting on reading comprehension and memory was also a key point to keep in mind during our design process for the articles page, ensuring the "key quote" section was captivating, while sending the full message contained within the article. The signup and login pages featured a straightforward two-step procedure, with options for signing in via various accounts, ensuring adherence to international security standards (Oshadami, 2024). The team's iterative process, guided by Holtzblatt and Beyer's (2017) principles and Nielsen's (1995) usability heuristics—specifically the heuristics of user control and freedom—aimed to create a user-centered product that meets usability guidelines.

DESIGN CHALLENGES

Color Palette and Brand Identity Development

As part of the UX improvement process, the team recognized the importance of developing a cohesive color palette for the Canadian English Dictionary (CED) UI system. The stakeholder

agreed, noting that the current colors (Figure 4) were temporarily adopted directly from Editors Canada and that they were open to suggestions.

Thus, we adopted a strategic approach to this task:

1. **High-Fidelity Prototypes First:** We prioritized the development of the wireframes and fleshing out the UI first in order to test and refine color choices within the context of the actual design, ensuring that the palette complements and enhances the user interface effectively (Noorani, 2024).
2. **Iterative Color Selection:** This allowed us to iterate on the color palette selection over and over, adjusting how different components look and interact together in the prototypes (Noorani, 2024). This iterative process helped us create a palette that not only looks appealing but also supports the functionality and usability of the website (Noorani, 2024). Background color was chosen as an off-white to prevent glare effect for light-sensitive users while maintaining good contrast (Noorani, 2024) (see Figure 5).

The final color palette consists of user interface shades, highlights, accents, off-white, error color, and black and white (Figure 5) (Noorani, 2024).

Initial Logo Design Limitations:

Accessibility Issues: As part of the UX improvement for the Canadian English Website, we refined the dictionary's logo (Noorani, 2024). The initial logo design used red and dark gray, which presented challenges in creating a user-friendly and engaging interface. Low contrast can lead to usability issues, particularly for users with visual impairments. As Thorell and Smith (2020) note, low contrast significantly affects readability, emphasizing the importance of designing with sufficient contrast to accommodate a diverse audience.

The low contrast between the logo elements made it difficult for people with low vision to distinguish its components. Accessibility is a critical component in design, ensuring products are usable for people with disabilities (Clark & Mayer, 2016). The Web Content Accessibility Guidelines (WCAG) 2.1 also stress the importance of color contrast and visibility for enhancing accessibility (W3C Web Accessibility Initiative, 2018). A successful design balances aesthetic appeal with functional effectiveness (Lidwell, Holden, & Butler, 2010). Norman (2013) emphasizes the importance of usability in design, illustrating how visibility improvements can coexist with maintaining brand identity.

To address this, we explored various color combinations while maintaining the stakeholders' preference for red to reflect the Canadian flag (Noorani, 2024). Brown and Katz (2019) discuss how designers can work collaboratively with stakeholders to find a balance between aesthetic preferences and functional requirements. We created several versions of the logo, preserving the original design but altering the color scheme. These iterations were presented to the editor-in-chief, Mr. John Chew, and through an iterative process of adjusting brightness levels and experimenting with color inversions, the team found a solution that balanced aesthetics and functionality (Noorani, 2024). The final design, approved by the stakeholders, features a pure red background with white elements and a dark gray bookbinder, improving visibility and maintaining brand identity (Figure 7).

FUTURE ENHANCEMENTS

Customizable Dynamic Background

To further enhance user experience and highlight the unique linguistic characteristics of Canadian English, we propose several future changes to the Canadian English Dictionary (CED)

website. One key enhancement involves expanding the functionality of the Gen Z mode's dynamic background feature (Noorani, 2024).

Currently, the Gen Z mode displays a dynamic background of challenging words, designed to engage younger users and encourage linguistic exploration. Moving forward, we plan to introduce a customizable option for this feature. Users will be able to select the types of words they wish to see in the dynamic background, providing a more tailored and engaging experience. For instance, users can choose to display difficult words, Canadianisms, or a combination of both. To further support users who enjoy challenging themselves, we will incorporate a refresh button. This feature will allow users to update the dynamic words in the background with a single click, ensuring a continually fresh and stimulating experience.

Advanced Search with Canadianism Filters

Another significant enhancement involves the advanced search functionality. To better serve users interested in the linguistic nuances of Canadian English, introducing advanced search filters specifically designed to prioritize Canadianisms would prove useful. This feature will enable users to easily find and explore words and phrases unique to Canadian English, promoting a deeper understanding and appreciation of the country's linguistic heritage (Noorani, 2024).

The advanced search function will allow users to differentiate between Canadianisms and more general uses of entries, providing a more nuanced and targeted search experience. This enhancement will be particularly valuable for researchers, educators, and language enthusiasts who wish to delve into the distinct aspects of Canadian English.

Exploring a Canadian French Version of the Dictionary

The team believes it would be beneficial to develop a Canadian French version of this dictionary in future (Noorani, 2024). Canadian French, with its unique characteristics and linguistic nuances, is an integral part of Canada's cultural identity. This variant of French has evolved distinctly from its European counterpart, influenced by historical, social, and geographical factors (Sala and Posner, 2024). A Canadian French dictionary in addition to the Canadian English version would help the society move towards the national goal of English-French bilingualism as the official languages of Canada (Noorani, 2024).

Including Region Specific Usage

In addition to the Canadian English version, another potential enhancement to the CED project is the sectioning of certain terms specific to different regions of Canada. This idea emerged from user feedback interviews with real-world individuals, highlighting the importance of recognizing regional linguistic variations (Oshadami, 2024). Regional terms play a crucial role in reflecting local identities and enhancing the relevance of the dictionary for diverse communities across the country.

These proposed future changes are aligned with our commitment to creating a user-centric and inclusive digital resource. By allowing users to customize their experience and providing advanced search capabilities, we aim to make the Canadian English Dictionary website a more engaging and valuable tool for all users. These enhancements will not only improve user satisfaction but also promote the rich linguistic diversity of Canadian English.

CONCLUSION

Our web developers built a strong backend to accommodate our large vocabulary database and transformed the UI/UX design into a workable website. The site is designed to be functional and accessible on various devices since the development process followed the principles of responsive web design (Marcotte, 2010).

The project stakeholder has been pleased with the results of the team and has started implementing the design on the CED website. A live demo of the entry page implementation (Figure 2) can be found on the Canadian English Dictionary website (for presentation purposes) at: <https://canadianenglishdictionary.ca/dev/>

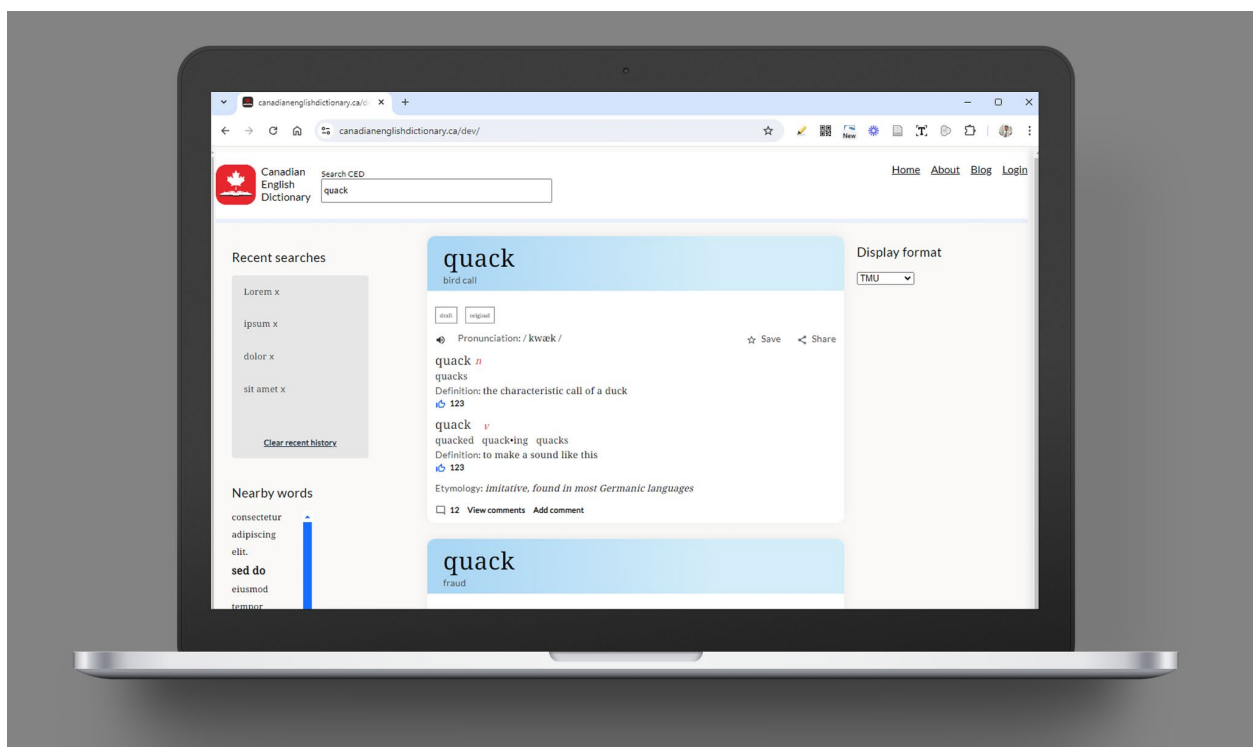


Figure 2 A screenshot of the CED's demo entry page allows viewers to search the letter Q.

APPENDICES

Appendix 1: Additional Figures



Canadian English Dictionary: Public Demo

This sample is provided solely as an example of what the eventual CED might look like, and will vary substantially from the final version.

Status: draft original

Pronunciation: kju:

q

q's *n* (also **Q** **Qs** (also **Q's**))

Definition 1. *n* the 17th letter of the English alphabet, or its sound
2. the 17th member of a sequence

Etymology: Latin *Q*; Phoenician Φ (*qōp*)

Status: draft original

Pronunciation: 'kagɪk

qag•giq

Definition: *n* Canadian 🍁 Northern a large, communal iglu built for a spring festival

Example: *Neighbouring camps and communities came together in a Qaggiq to share food, play traditional games, drum dance and sing traditional songs*

Etymology: Inuktitut ᑭᑭᑭᑭ (*qaggiq*)

Status: draft original

Pronunciation: 'kaɪ.æk

qaj•aq

n **qaj•aqs** (also **qa•ja•it**, pronounced **ka 'jait**) (also **kay•ak kay•aks**)

Definition: a small, narrow watercraft based on a traditional design of the Aleut, Inuit, and Yup'ik peoples

Example: *qajait were traditionally used for hunting*

qaj•aq *v* (also **kay•ak kay•aked kay•ak•ing kay•aks**) **qaj•aqed qaj•aq•ing qaj•aqs**

Definition: to operate a qajaq

Etymology: Inuktitut ᑭᑭᑭᑭ (*qajaq*) man's boat

USAGE: *Qajaq* is more respectful of the word's Indigenous roots, and is preferred when referring to watercraft that are of traditional or near-traditional design. The Inuktitut plural *qajait* may be unfamiliar to Southern readers, and should be used with due concern for clarity. Outside of Canada, the term may be applied to a wider range of watercraft, where *kayak* is more appropriate.

Figure 3 CED design (before)

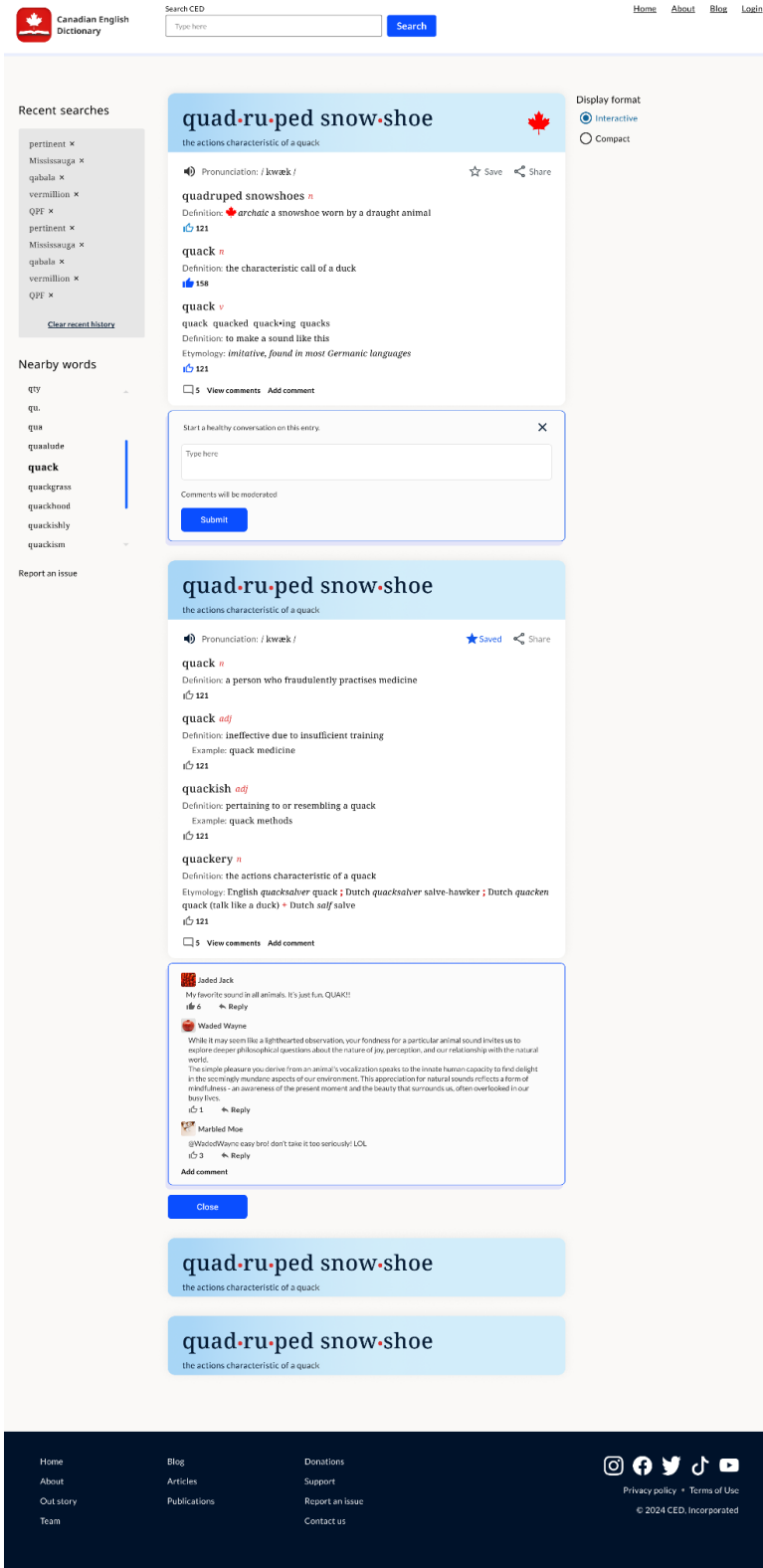


Figure 4 CED entry page design (after)

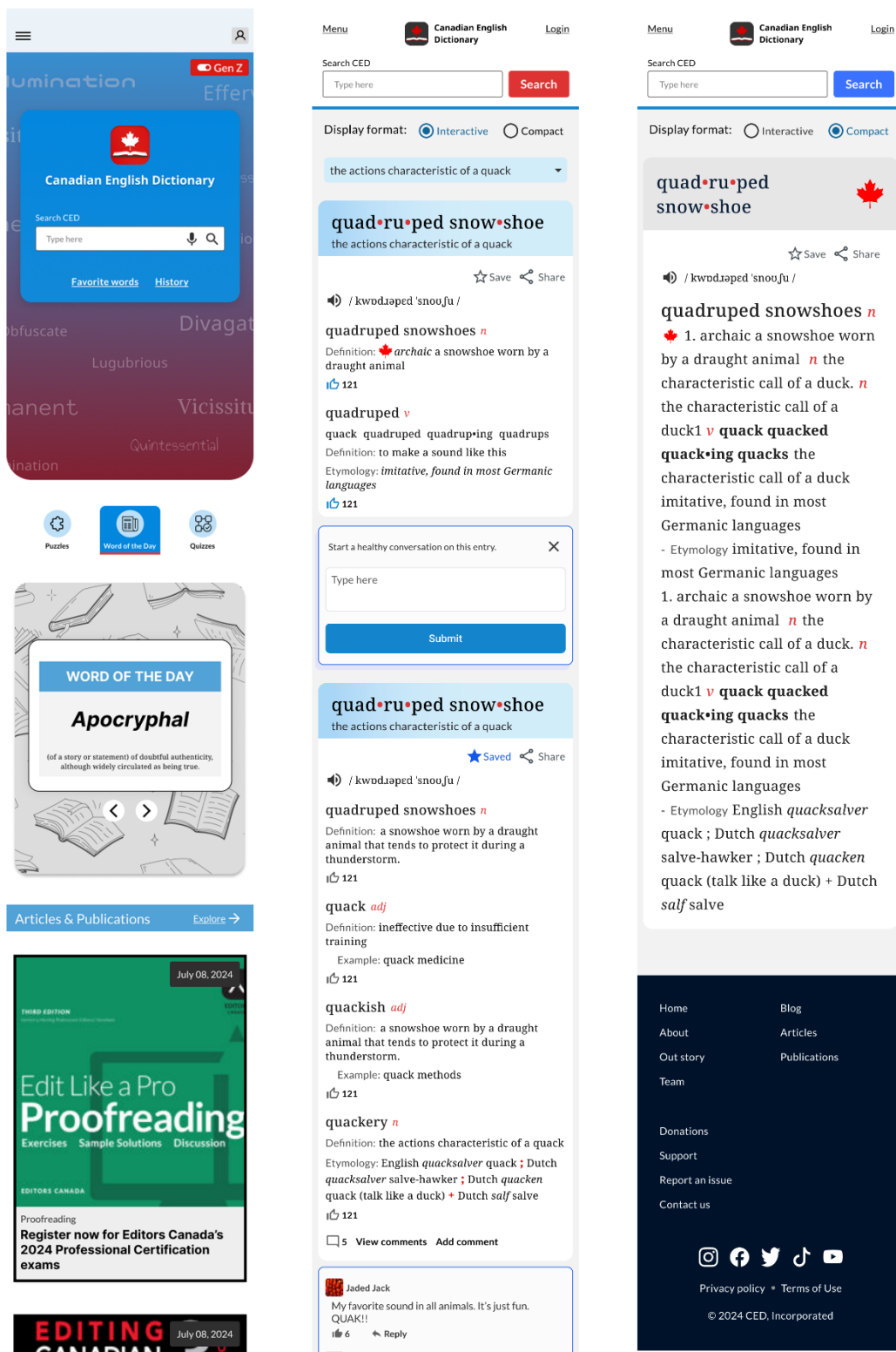


Figure 5 CED pages for mobile (left to right): Homepage, Interactive entry, Compact entry (after)

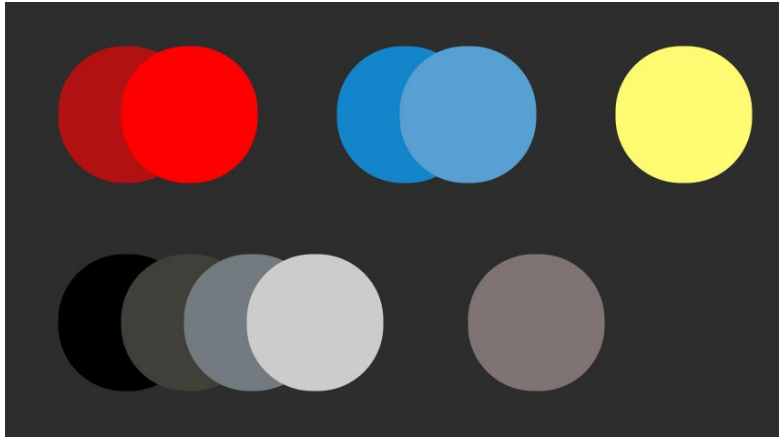
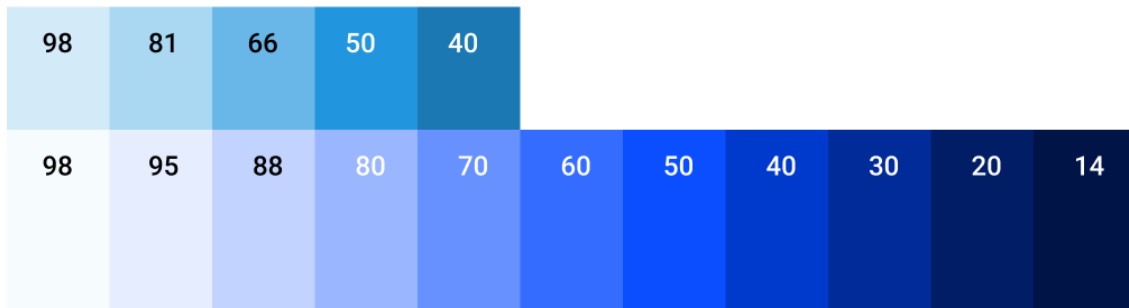


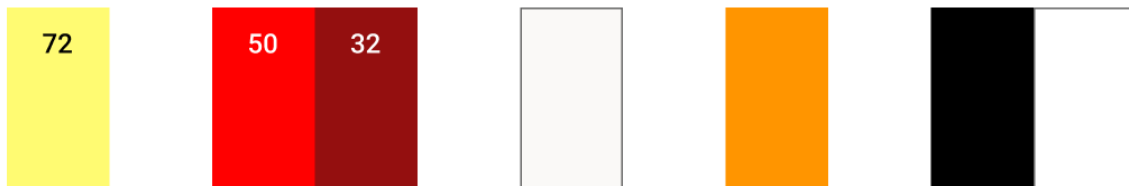
Figure 6: Original color palette

CED Color Palette

Additional highlights



UI Spectrum shades



Text highlighter

Accent

Off-white

Error

Black

White

Figure 7: New color palette

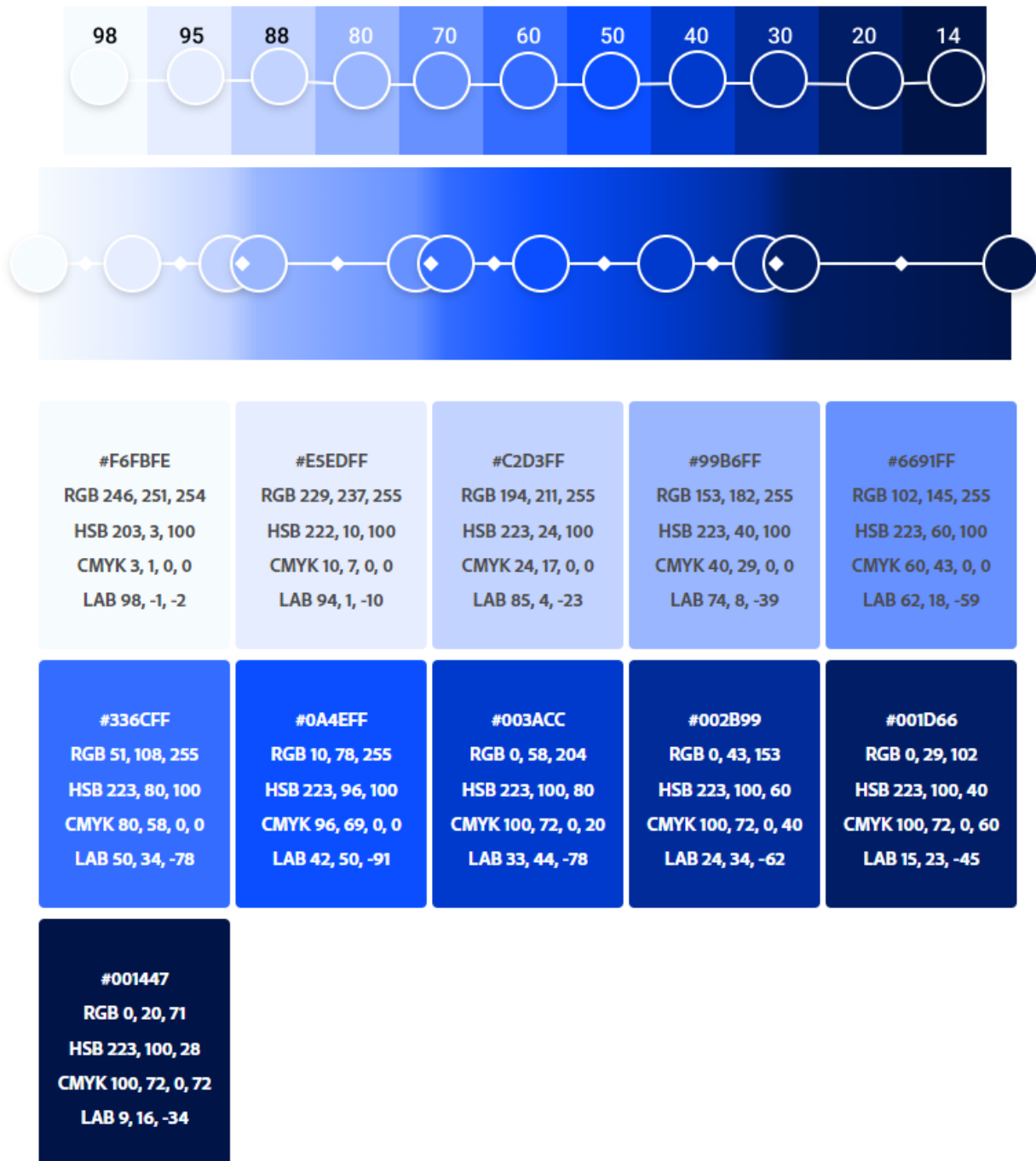


Figure 8: Primary UI color scheme

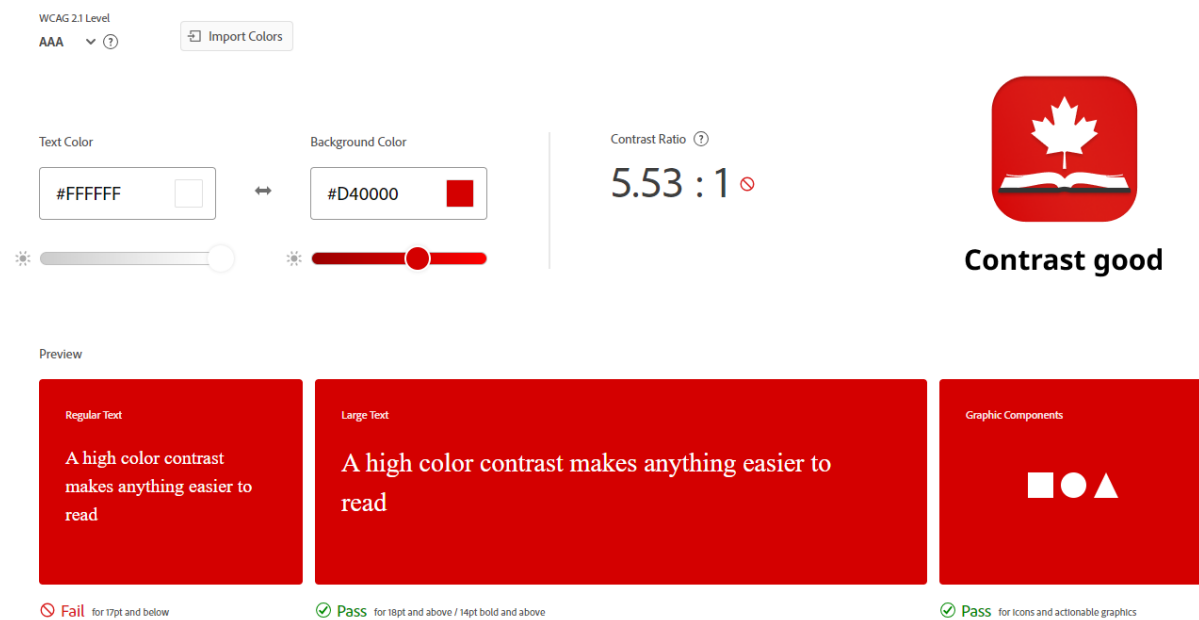


Figure 9: New logo passed contrast check (ratio of 5.53:1)

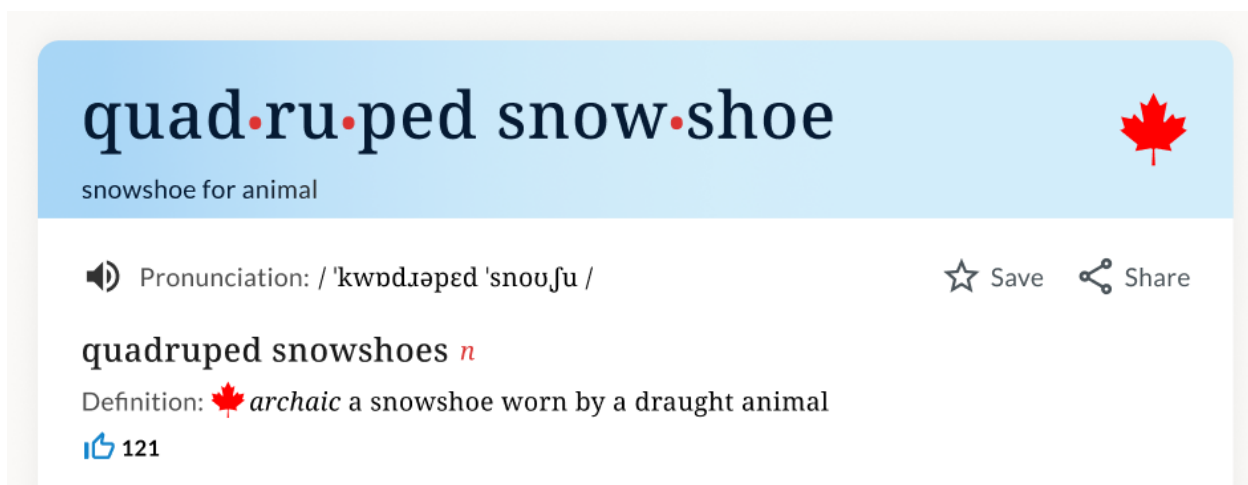


Figure 10: Canadianism marked by maple leaf

Appendix 2: Survey Questionnaire

Basics

All questions in this section are optional. The information we gather here will help us better understand the relation between demographics and dictionary use.

1. What is your gender?

Mark only one oval.

Female

Male

Non-binary

Prefer not to say

Two-spirit

Gender not listed here

2. What is your age?

3. What is your highest education level?

Mark only one oval.

Elementary school or equivalent

High School or equivalent

Bachelor's degree

Master's degree

Doctorate or higher

Other:

4. Were you a Canadian at birth? If not, when did you become a Canadian (as a child, as an adult, never)?

5. What is your level of proficiency in English?

Mark only one oval.

Beginner

Intermediate

Advanced

Fluent

6. In which country do you live?
7. Which languages do you know? Please add a rough overall skill level for each language.
8. Do you think of yourself as of a distinct cultural background?

If so, how would you describe yourself? (E.g., Filipino-Canadian, African American)?

Using Dictionaries

In this section, we will ask you questions about how you use dictionaries in your daily life.

9. How often do you refer to an English dictionary in your daily activities? *

Mark only one oval.

Rarely

Occasionally

Frequently

10. In what contexts do you typically use a dictionary? *

Check all that apply.

School assignments

Work projects

Personal readings

Language study

Other:

11. How often do you use digital devices (such as smartphones, tablets, or computers) to access language resources, including dictionaries? *

Mark only one oval.

Rarely

Occasionally

Frequently

12. Do you prefer using a digital dictionary or print edition?
13. Have you used a Canadian English dictionary within the past 12 months? *

Past experiences with existing Canadian dictionaries

14. Please name the Canadian English dictionary you used most often in the past year.
15. How satisfied were you with it? *

Mark only one oval.

Satisfied

Dissatisfied

Opinions on existing dictionaries

In this section, we would like to learn about what you think about the dictionaries you use.

16. What basic features do you need in a Canadian English dictionary?

Check all that apply.

Spelling

Hyphenation

Pronunciation

Definition

Word Origin

Inflections (plurals, conjugations, etc.)

Examples

Usage notes

Other:

17. Choose up to THREE basic features that you most often use a dictionary for.

Check all that apply.

Spelling

Hyphenation

Pronunciation

Definition

Word Origin

Inflections (plurals, conjugations, etc.)

Examples

Usage notes

Other:

18. What extra features do you want in a Canadian English dictionary?

Check all that apply.

Illustrations

Quizzes and games

Related words

Translations

User comments

User profiles

Word of the day

Other:

19. How would you rate your awareness of Canadianisms and regional language variations?

Mark only one oval.

I am not sure what Canadianisms are.

I know a few Canadianisms.

I know a moderate amount about Canadianisms.

I'm an expert in this topic.

20. If you use a dictionary as a regular part of your work (editing, teaching, linguistics, etc.), what are the greatest obstacles to accessing the information you need?

CED Priorities

How would you rate the importance of a Canadian English dictionary on the following topics?

21. Historic appreciation *

The CED should help users have a better understanding of Canadian English and culture.

Mark only one oval.

Disagree

Strongly disagree

Neutral

Agree

Strongly agree

22. Empowerment *

The CED should empower users to communicate effectively, make informed choices, and feel more confident in their personal and professional journeys.

Mark only one oval.

Disagree

Strongly disagree

Neutral

Agree

Strongly agree

23. Nuances (Canadianisms) *

The CED should capture regionalisms, colloquialisms, and the unique flavour of Canadian English speech.

Mark only one oval.

Disagree

Strongly disagree

Neutral

Agree

Strongly agree

24. Linguistic heritage *

The CED should respect the diversity and preserve the heritage of the languages, stories, and traditions of Indigenous peoples and immigrants.

Mark only one oval.

Disagree

Strongly disagree

Neutral

Agree

Strongly agree

25. Inclusivity *

The CED should acknowledge evolving understandings of and language norms surrounding gender expression, neurodivergence, disability, body size, and other marginalized identities.

Mark only one oval.

Disagree

Strongly disagree

Neutral

Agree

Strongly agree

26. Cultural integration *

The CED should provide learners and newcomers with the tools to engage meaningfully with Canadians, understand idiomatic expressions, and appreciate cultural references.

Mark only one oval.

Disagree

Strongly disagree

Neutral

Agree

Strongly agree

27. Any final thoughts?

28. Would you be open to follow-up questions if we might have any?

If yes, please provide your *email*. Your private information will not be shared with anyone.

Thank you!

Your thoughts help us help us improve the new Canadian English Dictionary! Learn more at <https://canadianenglishdictionary.ca>

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**Canadian English Dictionary: Designing a New Home for Canadian
English**

by

Ali Noorani, Bachelor of English Language & Literature,
Shahid Beheshti University, 2007.

An MRP

presented to Toronto Metropolitan University

In partial fulfillment of the requirements for the degree
of

Digital Media

In the Program of

Master of Digital Media

Toronto, ON, Canada, 2024

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ACKNOWLEDGEMENTS

I would like to thank Mr. John Chew of the Canadian English Dictionary from the bottom of my heart for his invaluable help and availability during this effort. His openness and patience was crucial in guiding us through the difficulties and nuances of creating the UX design for their online platform.

I would also like to sincerely thank Dr. Michael Carter, Professor Namir Ahmed and Professor Lorena Escandon for their invaluable efforts in securing this industry partnership and offering their constructive criticism during the project.

NOTES TO READER

The current document has been formatted using a certain accessibility methodology that breaks down the article into more headings and subheadings than it is customary in academic dissertations in order to help visually impaired readers scan the text easier on-screen readers.

DEDICATION

I would like to dedicate this great milestone to my wife and little son who patiently put up all the days and weeks of me being away at work. I'm proud of you! I also like to dedicate this joy to my late grandfather, who taught me humbleness and resilience, to my father, the genius who lit the fire of curiosity and resourcefulness in me, and to my mother, the angel who instilled kindness and patience in my heart. Thank you all.

Canadian English Dictionary: Designing a New Home for Canadian English

(Group Reflection Paper)

Ali Noorani

Master of Digital Media, 2024

Digital Media

Toronto Metropolitan University

ABSTRACT

The paper explores the design and implementation of the first comprehensive digital dictionary tailored to Canadian English in over 20 years. The study addresses the evolving needs of users in a digital age, emphasizing the importance of user experience (UX) in product design. It discusses the challenges and strategies involved in creating an engaging and functional digital dictionary, balancing modern interactive features with traditional dictionary elements to cater to diverse user preferences. The paper discusses how research by Hirsh-Psaek et al. (2015) into the science of learning and building educational apps and also the concept of Emotional Design by Don (2004) have been applied to maximize the usefulness of this dictionary and help users better retain information obtained through it. The dictionary aims to enhance linguistic learning and user engagement through interactive features while building an inclusive space for all users.

Keywords: Dictionary design, User experience design, Prototyping, Wireframing, User interface design, Information design, Canadianisms, Intuitive navigation, Product design, Canadian English, User Engagement

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INTRODUCTION

In 1985, French novelist and essayist Marguerite Duras envisioned what the year 2000 would look like with 'television.' In a television interview, she predicted the revolution of a globalized society of information and the nightmarish slavery of constantly connected mankind, who does not have time to read. Mankind, she said, would be “drowned in constant information, about his body, about his bodily future, about his health, about his family life, about his salary, about his leisure.” (Porte, 1985) “There will be no one left to read” because people will be watching television everywhere, in the kitchen, in the bathrooms, in the office, in the streets.

However, one day, when freedom has deserted the world, Duras said, one man will start to read again. "People will rediscover that; one day a man will read... and it will all start again. We will go back to being free." (Porte, 1985)

While her future – which we are living in 2024 – is not as bleak as Duras’s prophecy (or is it?), mankind’s need to read and its importance is still as valid as it was although we are entrenched in the act of constant viewing and connectivity with social media and the internet respectively. Having access to accurate linguistic resources plays a crucial role in the lives of those in the business of learning and verifying and that is why I feel proud to take part in the Canadian English Dictionary user experience design project.

A REVIEW OF LITERATURE ON DESIGN

Design thinking – or the effort to “scientise design” as Nigel Cross (2001) puts it – has been around for decades. In the 1960s, the idea of “science of design” was heralded by Buckminster Fuller (Nigel, 2001: 49) and the Conference on Design Methods held in London in 1962, was one of the first and formative events in design methods. (Umney, 2016).

Later, Don Norman introduced the use of cognitive science in human-centered design with his book *User Centered System Design: New Perspectives on Human-Computer Interaction* (1986).

Researching how architects design buildings and trying to improve on the analysis-synthesis design model which was put forward in the 1960s (Darke, 1979: p1), Jane Darke notes that there is not a single correct procedure to all cases in design methods. In her paper, *The primary generator and the design process*, she concludes:

“Designers don't start with a full and explicit list of factors to be considered, with performance limits predetermined where possible. Rather they have to find a way of reducing the variety of potential solutions to the as yet imperfectly-understood problem, to a small class of solutions that is cognitively manageable. To do this, they fix on a particular objective or small group of objectives, usually strongly valued and self imposed, for reasons that rest on their subjective judgment rather than being reached by a process of logic. These major aims, called here primary generators, then give rise to a proposed solution or conjecture, which makes it possible to clarify the detailed requirements as the conjecture is tested to see how far they can be met.”

Don Norman's Emotional Design

Design is different from fine art as it is opportunistic functional and purpose-driven (Visser, 1992, p.102).

We now look at the ways in which designs impacts users according to Norman's book *Emotional Design: Why We Love (or Hate) Everyday Things*. Norman outlines three levels of brain operation— visceral, behavioral, and reflective—and draws conclusions on how each has a different role on how products are perceived by a user. (See Book, 2004 and Norman, 2004). The visceral level refers to the emotional response or the first impression a user gets from seeing a product (Norman, 2004, p. 65). It has to do with the branding, good graphics, cleanliness, beauty and sleekness. A 'pretty' design is not art and might be judged as petty or trite by other designers, but it is enjoyable to the audience (Norman, 2004, p. 67). The principles guiding this level of design are wired in, timeless and consistent yet they make products attractive and simple (Norman, 2004, p. 67). It is based on this aspect that I strived to achieve a visually pleasing design in CED: to evoke a positive initial emotional feeling in the user.

The second level is behavioral, which deals with how a user experiences a product in use and how a product performs (Norman, 2004, p. 69). Norman writes on the elusive subject of *functionality*, "On the face of it, getting the function right would seem like the easiest of the criteria to meet, but in fact, it is tricky. People's needs are not as obvious as might be thought." (Norman, 2004).

The third is the reflective level, which as its name suggests linked to the rational and conscious feelings and opinions that users have about a particular product (Norman, 2004, p. 84). Questions of meaningfulness and cultural fit also fall within this level (Norman, 2004). Highlighting

Canadianisms and regional variations of entries in our design (more on this later) was a decision to appeal to the public's needs at this level. The reflective level also covers the content of a dictionary which is outside the scope of this dissertation.

To collaborate between team members, distribute the design artifacts and share the cognitive processes, we chose Figma as the main design tool. The choice of design tool also has significance (Dong, 2004). Perhaps in line with Marshall McLuhan's 'Medium is the message' media studies mantra, Dong opines that technical design tools and methods are a "cultural medium" as they provide the structure for the transmission and propagation of cognitive states and encode patterns of behavior (Dong, 2004, p.30).

Dictionaries are not merely isolated references, they also act as tools of learning as Luckner and Cooke (2010) propose. Vocabulary is essential for communicating, reading, thinking, and learning (Luckner and Cooke, 2010). Boulton & Cook (2017) say that dictionaries are amongst the most widely-used tools for foreign and second language learning.

Science of Learning in App Development

Informal learning represents learning that takes place outside of formal learning and educational establishments, that informal learning does not follow a specified curriculum and that it is not necessarily pedagogically planned or organized (McGivney, 2006). This is well known in adult learning, but also applies to children and young people (McGivney, 2006).

As far as the learning science is concerned, Hirsh-Pasek, K., Zosh and others (2015) point to a few well-agreed-upon pillars that have remained steady through the decades. Humans learn best when they are actively *involved* ("minds-on"), *engaged* with the learning materials and

undistracted by peripheral elements, have *meaningful* experiences that relate to their lives, and *socially* interact with others in high-quality ways around new material, within a context that provides a clear learning goal (Hirsh-Pasek et al., 2015). While using these pillars in dictionary and educational interfaces is new, they are not new concepts. As an example, Chi (2009) has provided a taxonomy for learning that includes three levels: active, constructive, and interactive learning. (Hirsh-Pasek et al., 2015) Here, I also try to make clear where and how these four pillars were applied to maximize learning.

Active learning

If adults are presented with a word pair in which one of the words has a few letters missing and are asked to generate the full word, they will remember the pair better than if they passively read it (Hirshman & Bjork, 1988). The active (minds-on) part of learning is difficult to implement in a dictionary, as it involves playfully challenging the users. It also goes against the principle of simplicity. But the search process can include active elements such as note-taking, which has been shown to improve learning and problem-solving in adults (Trafton & Trickett, 2001). To this end, we added a “Save” feature to entries, allowing users to create a list of the words they need to go back to. The comments section for entries (Figure 4) can also be an act of active note-taking although it is public. Moreover, this pillar of learning can be better exploited under interactive fun features such as Word of the Day, quizzes and puzzles that we added in our proposed design to complement the overall learning experience.

Engagement

Active engagement is a positive addition that we did not take for granted. As part of the proposed next phase, we came up with these engagement strategies that could also act as loyalty strategies to help boost adoption rate, brand awareness and monetize the website to help the sustainability

of this project. The main external engagement suggestions include selling linguistic merchandise bearing the user's favourite word and definition, showing hot/trending words that have sold the most, a word adoption scheme, and activity points systems that grants badges of honour, plus social media sharing features.

Meaningfulness

As Brown et al. (2014) have demonstrated, "people who learn to extract the key ideas from new material and organize them into a mental model and connect that model to prior knowledge show an advantage in learning complex mastery" (p. 6). Learning new material that is relevant to the person and learning new material that can be linked or associated with their already existing knowledge are examples of meaningful learning. Well-written examples for various entry meanings, related words, word origins, example passages from a corpus of Canadian published texts (under consideration by CED), and personalized discussions in the comments section can improve the meaningfulness of words for the users and help them better retain that information in future. Young students showed vocabulary gains when words were embedded in a written passage (Nagy, Herman, & Anderson, 1985).

Social Interaction

Face to face interaction improves both the experience and learning (Hirsh-Pasek et al., 2015). But to apply the social aspect to a dictionary, we had to opt for the virtual social interactions which are the comments box, the like button and also the social media share button. All of these features help users talk and communicate about a word and show their preferences and or opinions on them.

DESIGNING A DIGITAL DICTIONARY

"So difficult it is to show the various meanings and imperfections of words when we have nothing else but words to do it with."

—John Locke (Rabe, 2016: 188)

The user experience (UX) is a critical issue in both the product design and service sector (Lin and Lai-Yu, 2017). 'User experience' (UX) encompasses the concepts of usability and affective engineering (see Alben 1996; Hassenzahl and Roto 2007). Good research practice dictates that you start by framing your research question, then identify the methods which seem most likely to lead to a useful answer (see Kara, 2015 and Tenenbaum et al 2009: 117). From the beginning of the process, we created a design journal to document the process. As Dong (2008, p.11) opines, the act of writing down ideas into a design journal or into an online blog accomplishes several goals, including easier recall, thinking by writing, and giving insights into the process for those who aim to review or continue the work in future.

Designing a digital dictionary is a humongous task. Garrett (2011) structures the elements of websites that influence the UX. The structure arranges five planes (strategy, scope, structure, skeleton, and surface) according to their level of specificity from abstract (strategy) to concrete (surface) (Lin et al, 2017).

As Geske and Bellur (2008) suggested, reading on a computer screen – vs print – can be more difficult and involve higher cognitive overload. This can be due to the mere flickering of now-obsolete CRT screens (Geske and Bellur, 2008) or due to other distractions present on screens. Geske and Bellur's study indicated that readers attended to print more easily than computer

screens, and this may be a result of the flicker effect on brain processing (Geske and Bellur, 2008, p.399).

On the other hand, research by Kretzschmar et al. (2013) comparing brain activity and error fixation between young college students and senior citizens showed that while seniors had a preference for print, they had less error fixation on the tablet screen due to the high contrast of text vs. background. “Contrast sensitivity decreases with age, and degraded contrast conditions lead to longer reading times, thus supporting the conclusion that older readers may benefit particularly from the enhanced contrast of the tablet” (Kretzschmar et al., 2013, p. 1).

However, caution should be exercised for people with the hypothetical Irlen Syndrome, also known as the Scotopic Sensitivity Syndrome which is defined as a visual or perceptual processing disorder (Irlen, 2005). Photophobia is a general sensitivity to brightness, intensity of light, glare, and fluorescent light. Difficulties with background accommodation include the inability of the eyes to accommodate from black to white and white to black contrasts (Botello, 2018). For this reason, we turned the background to a light shade that does not produce a glare effect but is sufficiently contrasting from the texts and other informational elements.

Balancing User Preferences in Dictionary Entry Page Design

Content delivery was a pivotal focus of the project. With input from language experts and editors, as well as insights gleaned from the general public through our survey, we curated a comprehensive collection of items to consider in dictionary design. This approach informed our dictionary design process to step away from generic UI design and build original solutions that fit the needs of CED users and writers (Noorani, 2024). As Helen Kara (2015: 21) put it, creative

research enables you to build on existing knowledge and experience, rather than reinventing the wheel.

Risdiyono and Koomsap (2013) proposed a “design for customer” approach where one of the ways to meet customer needs is to translate them into product variety as in mass customization system to reduce the gap between what customers really need and what the business can provide.

Research by Lin and Lai-Yu (2017) rated the user experience of users in four modes of communication: print, video-mediated, interactive and actual (face to face). They found that in all situations (abstract vs concrete topics), customers had the lowest experience with static print and the highest with actual experiences (Lin et al, 2017). Interactive experiences (such as an interactive website) rated second highest.

Control has been cited as a factor in why apps capture attention, especially as it pertains to interactions with software (Hirsh-Pasek et al., 2015). We conducted a mixed survey consisting of quantitative and qualitative questions (see Appendix 1) and received 39 responses.

During our user survey, we encountered a dichotomy in respondents' preferences for the Canadian English dictionary website. The majority of users expressed a desire for an easy-to-use interface with a range of useful features. These respondents valued functionality and interactivity, seeking a modern, digital-first experience.

However, a minority of respondents advocated for a more traditional approach. They preferred a dictionary in its purest form, arguing against what they termed as “bells and whistles”. This group sought an experience closer to that of traditional print dictionaries, emphasizing simplicity and directness.

To address this spectrum of user preferences, we developed a dual-layout approach:

1. **Interactive Experience Format:** For users seeking engagement and additional features, we designed a highly interactive interface (Figure 1). This layout allows for easy scanning of different meanings and definitions, and includes features such as open discussions through comments. This design features more variation in color, style and layout which improves comprehension and scanning according to research by Zentall and Grskovic (2000). Their work showed that non-informational color helped primary school students with attentional deficit to better understand texts whereas they performed negatively with merely black-and-white text.

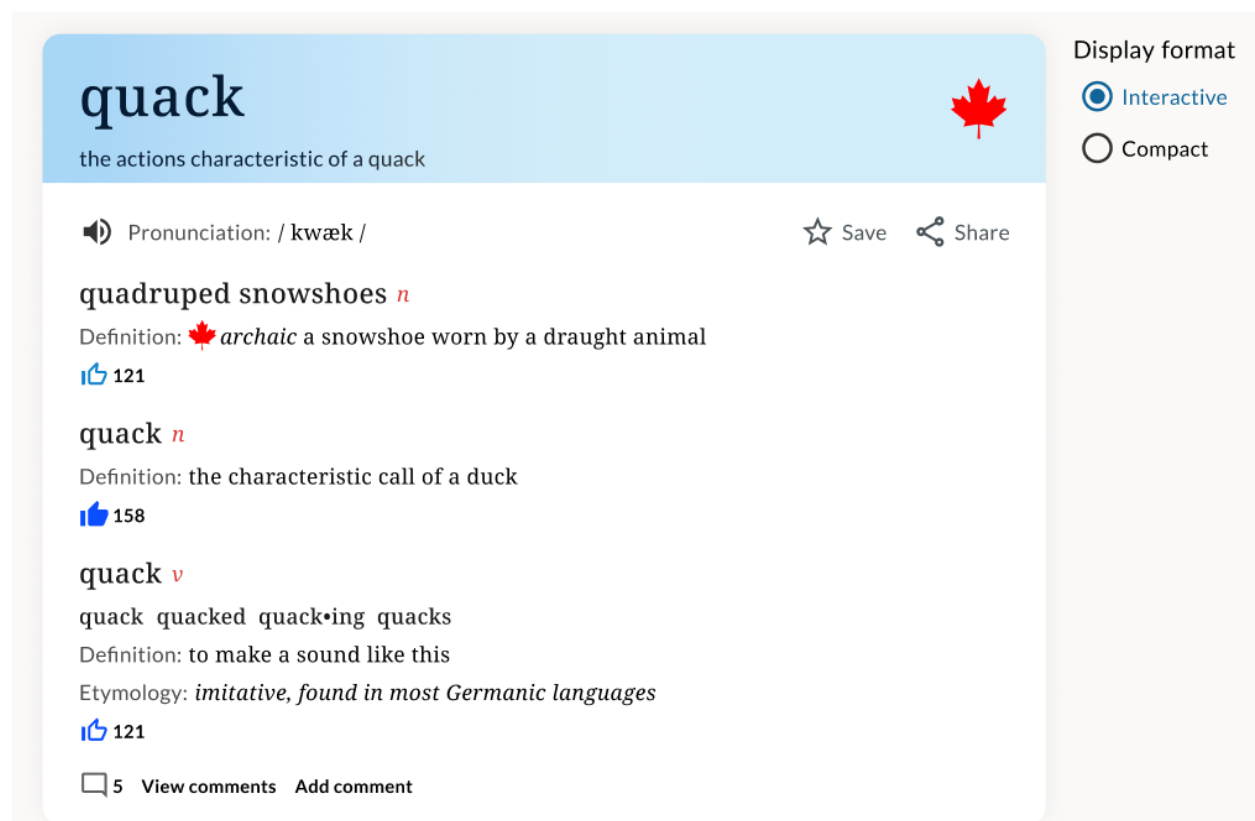


Figure 1: A demo of the Interactive format

2. **Compact Format:** For those preferring a more traditional approach, we created a layout reminiscent of print dictionaries. Recognizing that this group often includes older users,

we incorporated accessibility features, notably a larger font size (Figure 2). This design offers a clean, uncluttered experience that focuses solely on definitions.

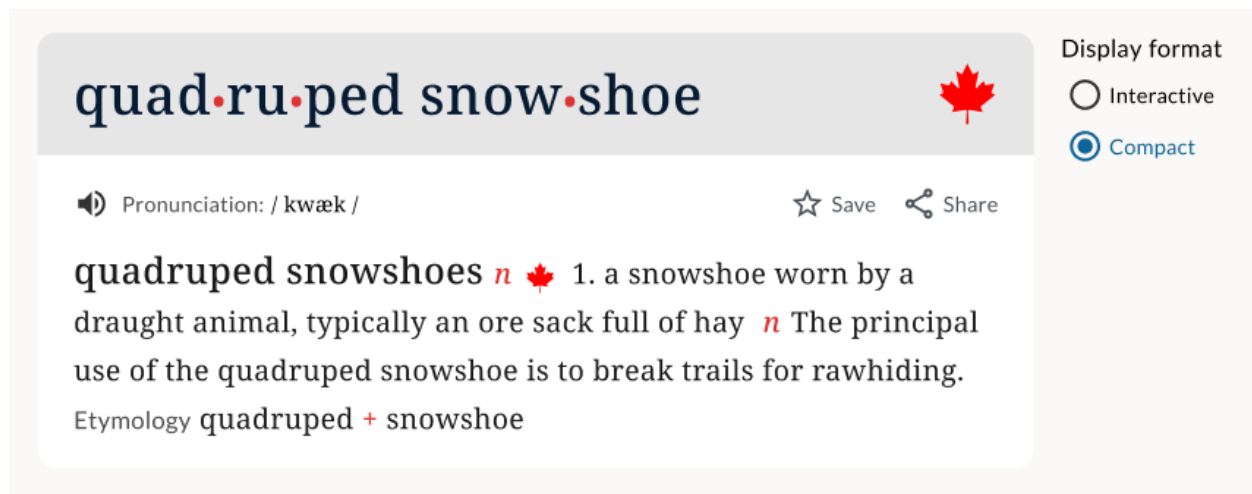


Figure 2: A demo of the compact format

This dual-layout strategy aligns with a key principle of user experience design: giving users control over their experience. By allowing readers to choose between the extended interactive version and the compact, minimal version, we ensure that the Canadian English dictionary caters to diverse user preferences and needs.

The use of space may be thought of as the single, most important element of design as it improves visual appeal in many ways such as readability, viewer perception of brand image, drawing focus, and creating harmony (Coats, 2014).


This dual-layout strategy offers several benefits:


- Inclusivity: It accommodates both tech-savvy users and those more comfortable with traditional formats.
- Accessibility: The compact version with larger font sizes addresses the needs of users with visual impairments.


- User Satisfaction: By offering choice, we enhance overall user satisfaction across different user groups.


Gestalt psychology proposes that the brain is holistic with self-organizing tendencies (Jackson, 2008). Due to these supposed innate abilities, the brain organizes disconnected elements shapes into a connected whole. This means that the whole will have a greater meaning than the sum of individual components combined. As Lauer (2000) writes, “the viewer tends to group objects that are close to each other into a larger unit.” To enhance the readability of different meanings of a word, tactical spacing was used. (Figure 3)


Meanings grouped by spacing

 Pronunciation: / kwæk /


quack *n*
Definition: 🇨🇦 *archaic* a snowshoe worn by a draught animal
 121


quack *n*
Definition: the characteristic call of a duck
 158


quack *v*
quack quacked quack•ing quacks
Definition: to make a sound like this
Etymology:
imitative, found in most Germanic languages
 121


 5 [View comments](#) [Add comment](#)

Equal spacing (12px)

 Pronunciation: / kwæk /

quack *n*
Definition: 🇨🇦 *archaic* a snowshoe worn by a draught animal
 121

quack *n*
Definition: the characteristic call of a duck
 158

quack *v*
quack quacked quack•ing quacks
Definition: to make a sound like this
Etymology:
imitative, found in most Germanic languages
 121


 5 [View comments](#) [Add comment](#)

Figure 3: Two versions comparing grouped sections of the entry page (L) vs. equally spaced-out version (R).

I believe this approach will maximize the benefit for our readers. It respects both the desire for modern, feature-rich digital experiences and the preference for traditional, focused dictionary use. By accommodating this range of preferences, we've created a more inclusive and user-centric platform that should appeal to a broader audience and enhance overall user satisfaction.

This experience has reinforced the importance of listening to and accommodating diverse user needs in design. It's a testament to how thoughtful, user-focused design can bridge generational and preferential gaps, creating a product that truly serves its entire user base.

Marking Canadianism

To enhance the visual distinctiveness of Canadianism, we chose the iconic maple leaf – also present in the dictionary's logo (Figure 4). Words or meanings that are unique to Canadian have been marked with maple leaf marks.

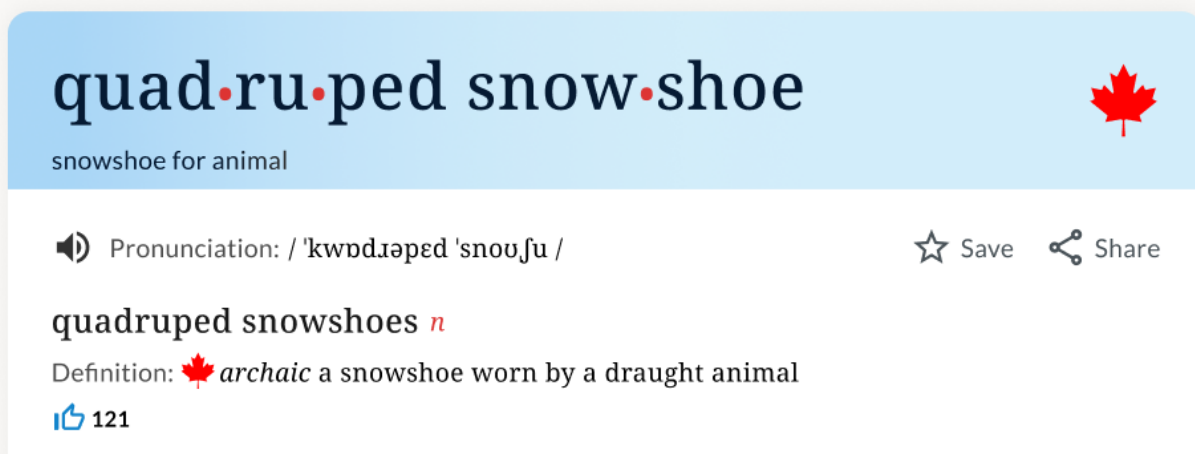


Figure 4: Canadianism marked by maple leaf

Engaging Gen Z: An Interactive Homepage Feature

In designing the Canadian English Dictionary website, we recognized the importance of catering to diverse user groups, particularly the digitally native Generation Z. To this end, we developed an innovative, interactive feature for the homepage that can be activated via a "Gen Z toggle."

The key traits that the digital native Gen. Z are known to expect are as follows (Designlab, 2024): Mobile-first, efficiency and speed, personalization, visual and interactive content, social integration, and authenticity and transparency.

When enabled, this feature transforms the homepage background into a dynamic, visually engaging display of challenging words. These words are presented in a graphical style that appeals to younger users' aesthetic preferences. The interactivity of this feature allows users to click on any displayed word to instantly access its definition, fostering a sense of exploration and discovery.

This Gen Z mode serves two primary purposes:

1. **Educational Engagement:** It caters to the younger generation's heightened exploratory interests and cognitive capacities, offering linguistic teasers that encourage learning in an engaging manner.
2. **Dynamic User Experience:** The feature's randomized word selection ensures that the homepage remains fresh and interesting with each visit, avoiding the monotony often associated with static designs.

Unlike traditional fixed images or designs commonly used on homepages, this dynamic word list directly relates to linguistics and lexicography. It provides a richer, more relevant experience for users while maintaining the core functionality of the dictionary.

Importantly, we've designed this feature with user control in mind. Recognizing that some individuals may find such interactivity distracting, we've made it optional. Users can easily toggle the feature on or off, allowing those who prefer a more focused experience to access the core dictionary functions without additional visual elements.

This approach reflects our commitment to inclusive design. By offering a feature that appeals to Gen Z users without mandating its use, we're striving to create a dictionary that adapts to various user preferences and needs. It's a balance between innovation and functionality, ensuring that the Canadian English Dictionary remains accessible and engaging for all users, regardless of their generational cohort or individual preferences.

This feature embodies our broader philosophy of creating a dictionary that's not just a reference tool, but an interactive platform that encourages linguistic exploration and learning. It's a step towards making lexicography more engaging for younger generations while respecting the needs of all users.

Color Palette and Brand Identity Development

As part of the UX improvement process, the author recognized the importance of developing a cohesive color palette for the Canadian English Dictionary (CED) UI system. The stakeholder agreed, noting that the current colors (Figure 8) were adopted directly from Editors Canada and that they were open to suggestions.

Thus, after consulting with the team we adopted a strategic approach to this task:

1. **High-Fidelity Prototypes First:** Rather than choosing colors in isolation, we decided to prioritize the development of the wireframes and fleshing out the UI first. This approach

allows us to test and refine color choices within the context of the actual design, ensuring that the palette complements and enhances the user interface effectively.

2. **Iterative Color Selection:** By integrating color selection into the prototyping phase, we can make more informed decisions about how different hues interact with various UI elements and content types. This iterative process helps us create a palette that not only looks appealing but also supports the functionality and usability of the website.

In the end, we produced a wide color scheme that satisfies the various needs of the stakeholders, editors and users. In this scheme there are shades for user interface (UI) elements, as well as highlights, distinctive error color (different from the iconic red maple leaf seen on Canadian flag), as well as shades to highlight texts and creating visual emphasis (Figure 11).

This approach reflects our commitment to creating a thoughtful, user-centered design that extends beyond the website to encompass all aspects of the CED's digital presence. By allowing the color palette to evolve naturally from the high-fidelity prototypes, we ensured that it will be both aesthetically pleasing and functionally appropriate for the dictionary's diverse user base.

Recolouring the Canadian English Dictionary Logo

In the process of improving the UX design for the Canadian English Website, one of the challenges I encountered was refining the dictionary's logo. The initial design, while a good starting point, was not professionally polished and presented some usability issues that became apparent as we progressed into the high-fidelity design phase.

As we began implementing colors and more detailed wireframes, it became clear that the original color scheme of red and dark gray (Figure 5) was limiting our ability to create a user-friendly and engaging design. The lack of variety in the color palette was hindering our efforts to create a

visually appealing and accessible interface. Recognizing this issue, I embarked on a mission to reimagine the logo's color scheme while maintaining its original design.

My first step was to evaluate the logo's visual accessibility. This assessment revealed a critical flaw: the low contrast between the logo's elements would make it challenging for individuals with low vision to discern its components clearly (Figure 4). This underscored the importance of enhancing the logo's accessibility without compromising its aesthetic appeal or brand identity.

Using Adobe Color's contrast checker, it was found that the logo's color foreground and background had a contrast ratio of 2.29:1, which fails the WCAG 2.1 level for all types of use (Kirkpatrick et al, 2018). Texts and images of text should have at least a contrast ratio of 4.5:1, except for large texts and purely decorative elements (Kirkpatrick et al, 2018).

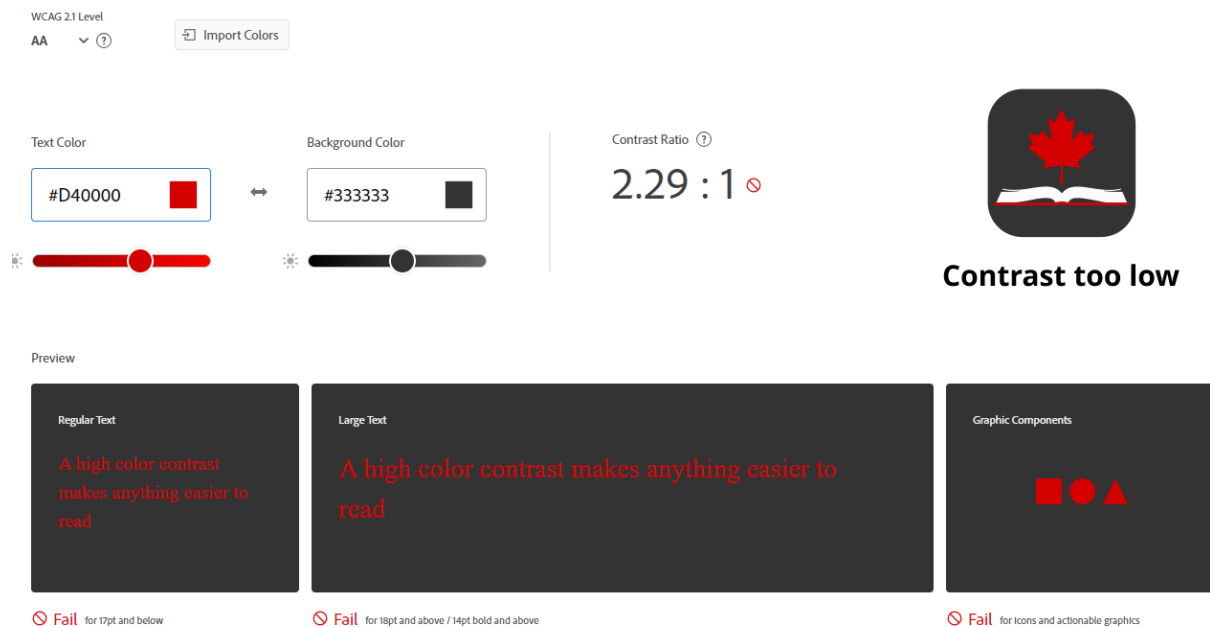


Figure 5: Contrast checks failed on original logo (ratio of 2.29:1)

Mindful of the stakeholders' desire to incorporate red as a nod to the Canadian flag, I explored various color combinations that would improve contrast while honoring this request. I created a few distinct versions of the logo, each maintaining the original design but with different color treatments. These iterations were then presented to the editor-in-chief Mr. John Chew (the client) in our project meetings.

We examined each version, adjusting brightness levels and experimenting with color inversions to achieve optimal results. This iterative process allowed us to refine our options and move closer to a solution that would meet both aesthetic and functional requirements.

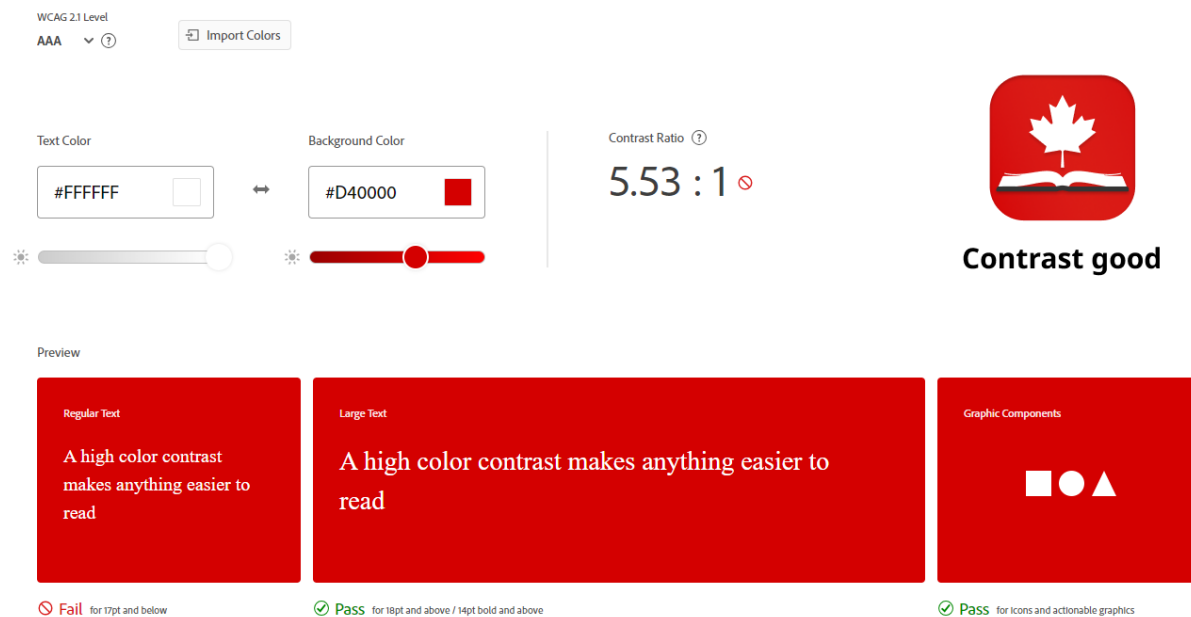


Figure 6: New logo passed contrast check (ratio of 5.53:1)

Ultimately, we reached a consensus on a design that featured a pure red background with white elements and a touch of dark gray as the bookbinder (Figure 5). This combination struck the perfect balance – it maintained the desired connection to Canadian identity through the use of red and keeping the iconic maple leaf, significantly improved visibility with its high-contrast elements, and achieved an aesthetically pleasing look that resonated with all stakeholders.

This experience reinforced the importance of balancing multiple factors in design: brand identity, accessibility, aesthetics, and user experience. It also highlighted the value of collaborative decision-making and iterative design processes. By remaining open to feedback and willing to explore multiple options, we were able to transform a potential UX obstacle into an opportunity for significant improvement.

FUTURE RECOMMENDATIONS

In addition to enhancing the user experience for English speakers, we believe it is essential to explore the development of a Canadian French version of this dictionary in future. Canadian French, with its unique characteristics and linguistic nuances, is an integral part of Canada's cultural identity. This variant of French has evolved distinctly from its European counterpart, influenced by historical, social, and geographical factors (Sala and Posner, 2024).

Creating a Canadian French dictionary would not only serve the significant population of French speakers in Canada—primarily located in Quebec and other provinces—but also promote the rich diversity of the French language as it is spoken in Canada (Noorani, 2024). This dictionary could include Canadianisms, regional dialects, and vocabulary derived from Indigenous languages, providing users with a comprehensive resource that reflects the linguistic landscape of the country.

Furthermore, a Canadian French dictionary would facilitate bilingualism in Canada, aligning with the country's commitment to recognizing both English and French as official languages. As we move forward with the Canadian English Dictionary project, the potential for a Canadian French version represents an exciting opportunity to expand our reach and impact, ensuring that we cater to the diverse linguistic needs of all Canadians.

CONCLUSION

The current phase of CED user experience improvement project was a success as it was informed by user research and tried and tested design principles. The stakeholders are adopting this design with a demo page (see Figure 7) available at: <https://canadianenglishdictionary.ca/dev/>

The final Figma prototype can be viewed at:

<https://www.figma.com/proto/uI2jBmqkJrbAEqm2Rij6MU/CED?page-id=664%3A500&node-id=923-6640&viewport=254%2C-473%2C0.06&t=4s2Lgx5A9cyrCZ8x-1&scaling=min-zoom&content-scaling=fixed&starting-point-node-id=923%3A6640&show-prototype-sidebar=1>

APPENDIX 1: FIGURES

Figure 7: A screenshot of the CED's demo entry page allows viewers to search the letter Q.

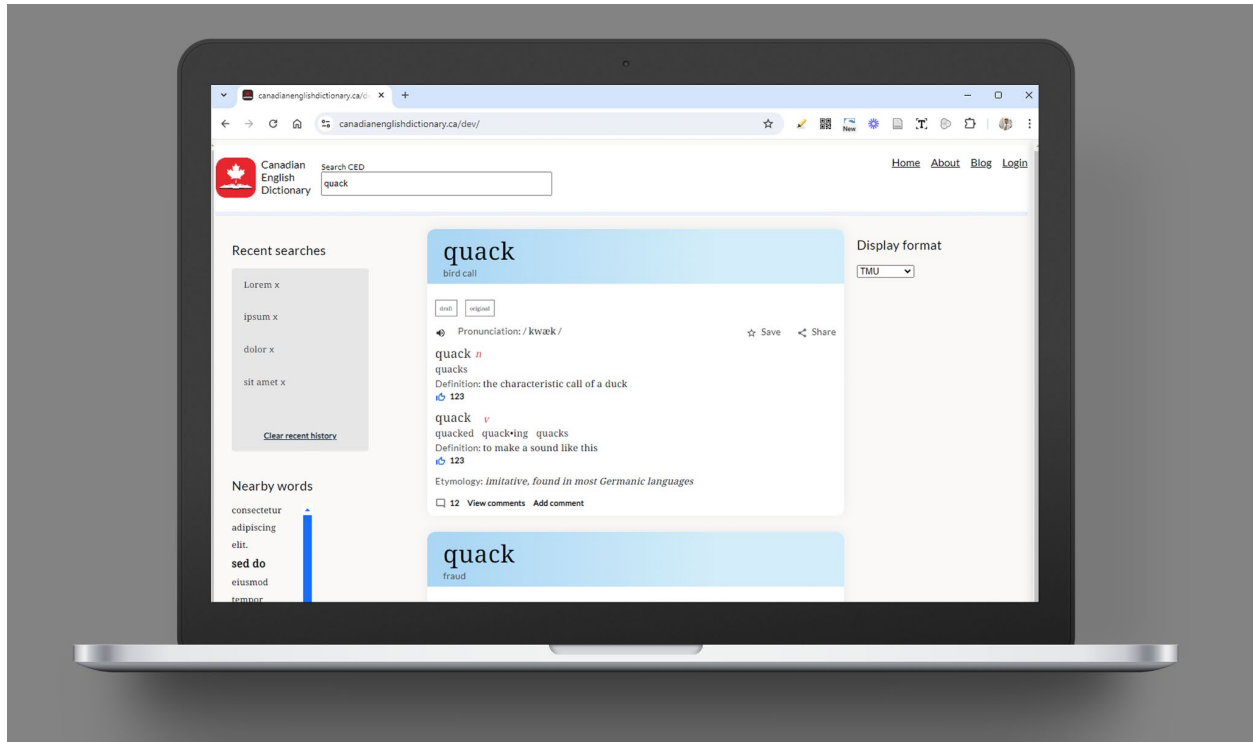


Figure 8: CED design (before)



Canadian English Dictionary: Public Demo

This sample is provided solely as an example of what the eventual CED might look like, and will vary substantially from the final version.

Status: draft original

Pronunciation: kju:

q

q's n (also Q Qs (also Q's))

Definition 1. *n* the 17th letter of the English alphabet, or its sound
2. the 17th member of a sequence

Etymology: Latin *Q*; Phoenician Φ (*qōp*)

Status: draft original

Pronunciation: 'kagik

qag•giq

Definition: *n* Canadian 🍁 Northern a large, communal iglu built for a spring festival

Example: *Neighbouring camps and communities came together in a Qaggiq to share food, play traditional games, drum dance and sing traditional songs*

Etymology: Inuktitut ᑭᑭᑭᑭ (*qaggiq*)

Status: draft original

Pronunciation: 'kaɪ, æk

qaj•aq

n **qaj•aqs** (also **qa•ja•it**, pronounced **ka 'jait**) (also **kay•ak kay•aks**)

Definition: a small, narrow watercraft based on a traditional design of the Aleut, Inuit, and Yup'ik peoples

Example: *qajait were traditionally used for hunting*

qaj•aq v (also **kay•ak kay•aked kay•ak•ing kay•aks**) **qaj•aqed qaj•aq•ing qaj•aqs**

Definition: to operate a qajaq

Etymology: Inuktitut ᑭᑭᑭᑭ (*qajaq*) man's boat

USAGE: *Qajaq* is more respectful of the word's Indigenous roots, and is preferred when referring to watercraft that are of traditional or near-traditional design. The Inuktitut plural *qajait* may be unfamiliar to Southern readers, and should be used with due concern for clarity. Outside of Canada, the term may be applied to a wider range of watercraft, where *kayak* is more appropriate.

Figure 9: CED entry page design (after)

Canadian English Dictionary

Search CED

Search

[Home](#)
[About](#)
[Blog](#)
[Login](#)

Recent searches

- [pertinent](#)
- [Mississauga](#)
- [qabala](#)
- [vermillion](#)
- [QFF](#)
- [pertinent](#)
- [Mississauga](#)
- [qabala](#)
- [vermillion](#)
- [QFF](#)

[Clear recent history](#)

Nearby words

- [qtv](#)
- [qu](#)
- [qua](#)
- [qualude](#)
- [quack](#)**
- [quackgrass](#)
- [quackhood](#)
- [quackishly](#)
- [quackium](#)

Report an issue

quad·ru·ped snow·shoe

the actions characteristic of a quack

Pronunciation: /kwæk/

☆ Save ↻ Share

quadruped snowshoes *n*

Definition: *archaic* a snowshoe worn by a draught animal

i121

quack *n*

Definition: the characteristic call of a duck

158

quack *v*

quack quacked quacking quacks

Definition: to make a sound like this

Etymology: *imitative, found in most Germanic languages*

i121

5 View comments Add comment

Start a healthy conversation on this entry

Type here

Comments will be moderated

Submit

quad·ru·ped snow·shoe

the actions characteristic of a quack

Pronunciation: /kwæk/

★ Saved ↻ Share

quack *n*

Definition: a person who fraudulently practises medicine

i121

quack *adj*

Definition: ineffective due to insufficient training

Example: quack medicine

i121

quackish *adj*

Definition: pertaining to or resembling a quack

Example: quack methods

i121

quackery *n*

Definition: the actions characteristic of a quack

Etymology: English *quacksalver* quack; Dutch *quacksalver* salve-hawker; Dutch *quacken* quack (talk like a duck) + Dutch *salv* salve

i121

5 View comments Add comment

Jaded Jack

My favorite sound in all animals. It's just fun. QUACK!!

6 Reply

Waded Wayne

While it may seem like a lighthearted observation, your fondness for a particular animal sound invites us to explore deeper philosophical questions about the nature of joy, perception, and our relationship with the natural world. The simple pleasure you derive from an animal's vocalization speaks to the innate human capacity to find delight in the seemingly mundane aspects of our environment. This appreciation for natural sounds reflects a form of mindfulness - an awareness of the present moment and the beauty that surrounds us, often overlooked in our busy lives.

i121 Reply

Marbled Moe

@WadedWayne easy bro! don't take it too seriously! LOL

i121 Reply

Add comment

Close

quad·ru·ped snow·shoe

the actions characteristic of a quack

quad·ru·ped snow·shoe

the actions characteristic of a quack

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Figure 10: New CED pages for mobile (left to right): Homepage, Interactive entry, Compact entry

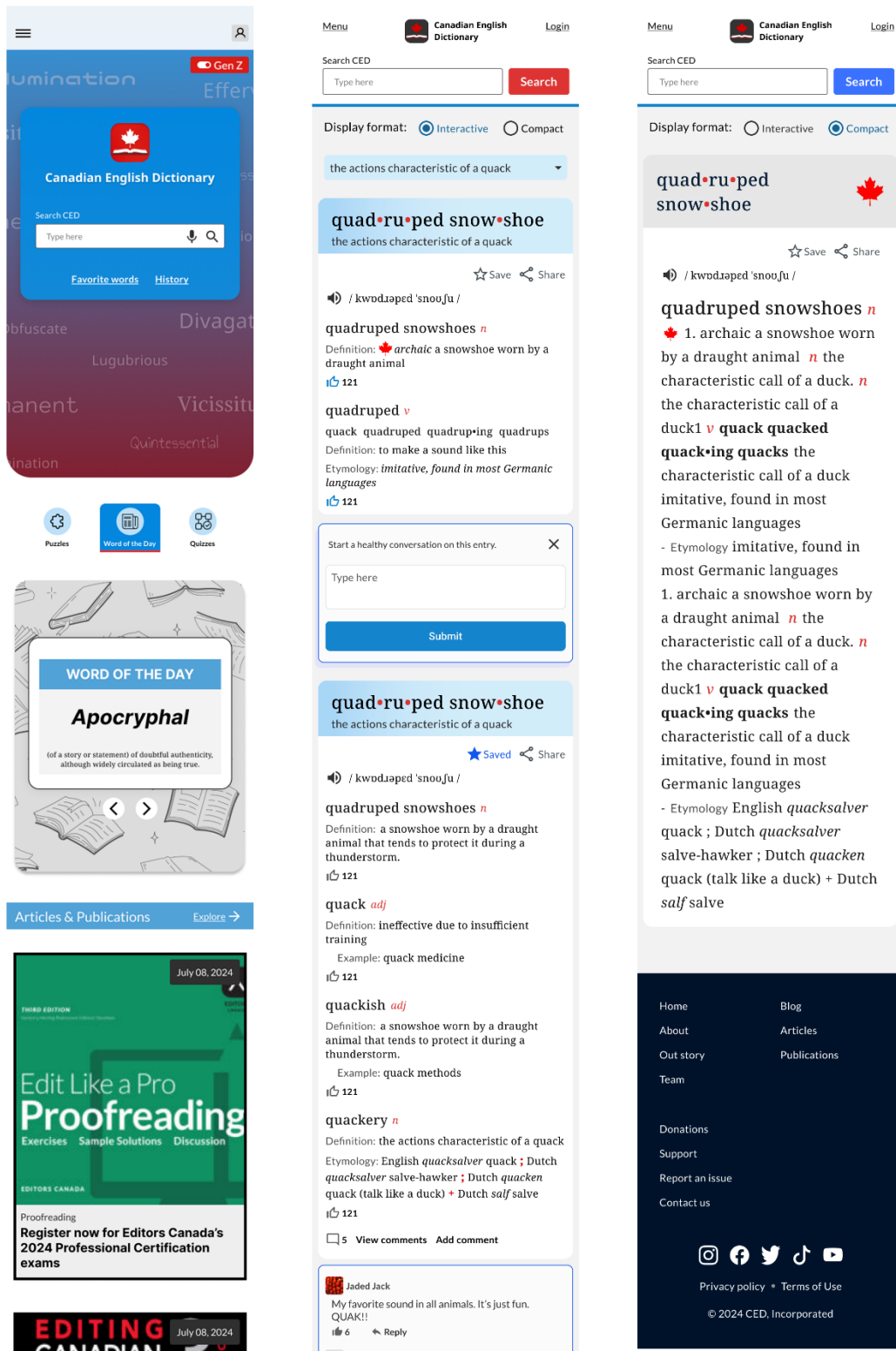


Figure 11: New color palette

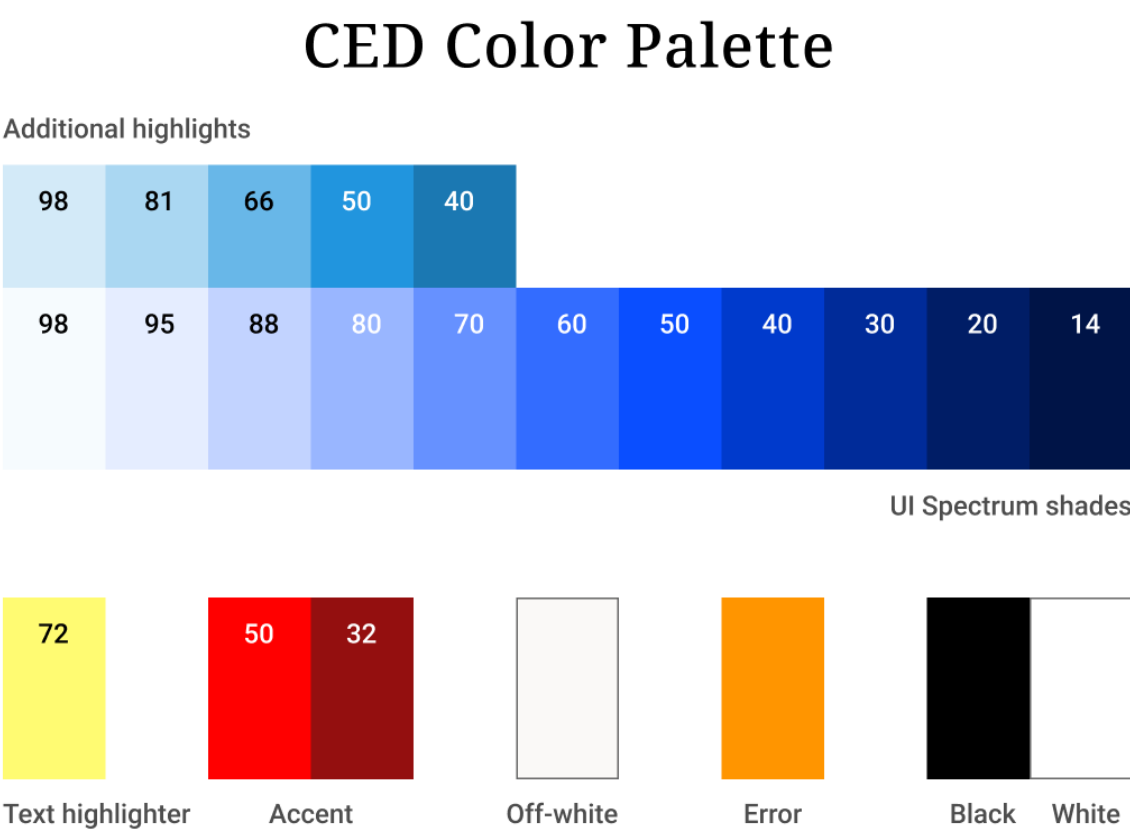


Figure 12: Original color palette

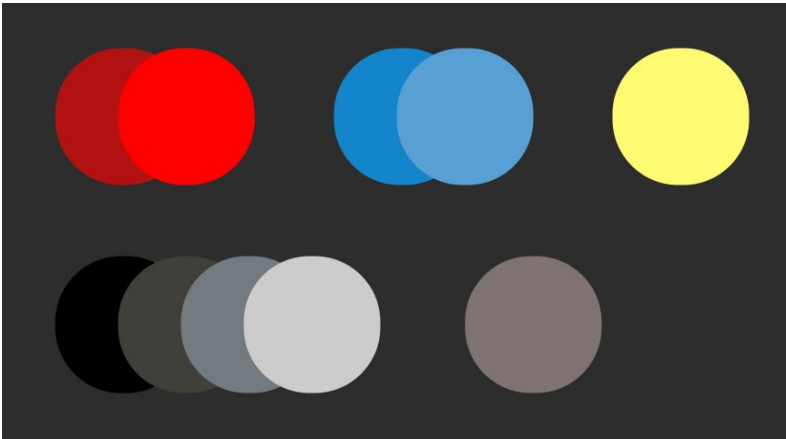


Figure 13: Comment section


Start a healthy conversation on this entry.

Type here



Comments will be moderated


Submit

Figure 14: Sample view of comments

**Jaded Jack**



My favorite sound in all animals. It's just fun. QUAAAACK!!


 16  Reply

**Waded Wayne**



While it may seem like a lighthearted observation, your fondness for a particular animal sound invites us to explore deeper philosophical questions about the nature of joy, perception, and our relationship with the natural world.

The simple pleasure you derive from an animal's vocalization speaks to the innate human capacity to find delight in the seemingly mundane aspects of our environment. This appreciation for natural sounds reflects a form of mindfulness - an awareness of the present moment and the beauty that surrounds us, often overlooked in our busy lives.

 1  Reply

**Marbled Moe**

@WadedWayne easy bro! don't take it too seriously! LOL

 3  Reply

Add comment

Close

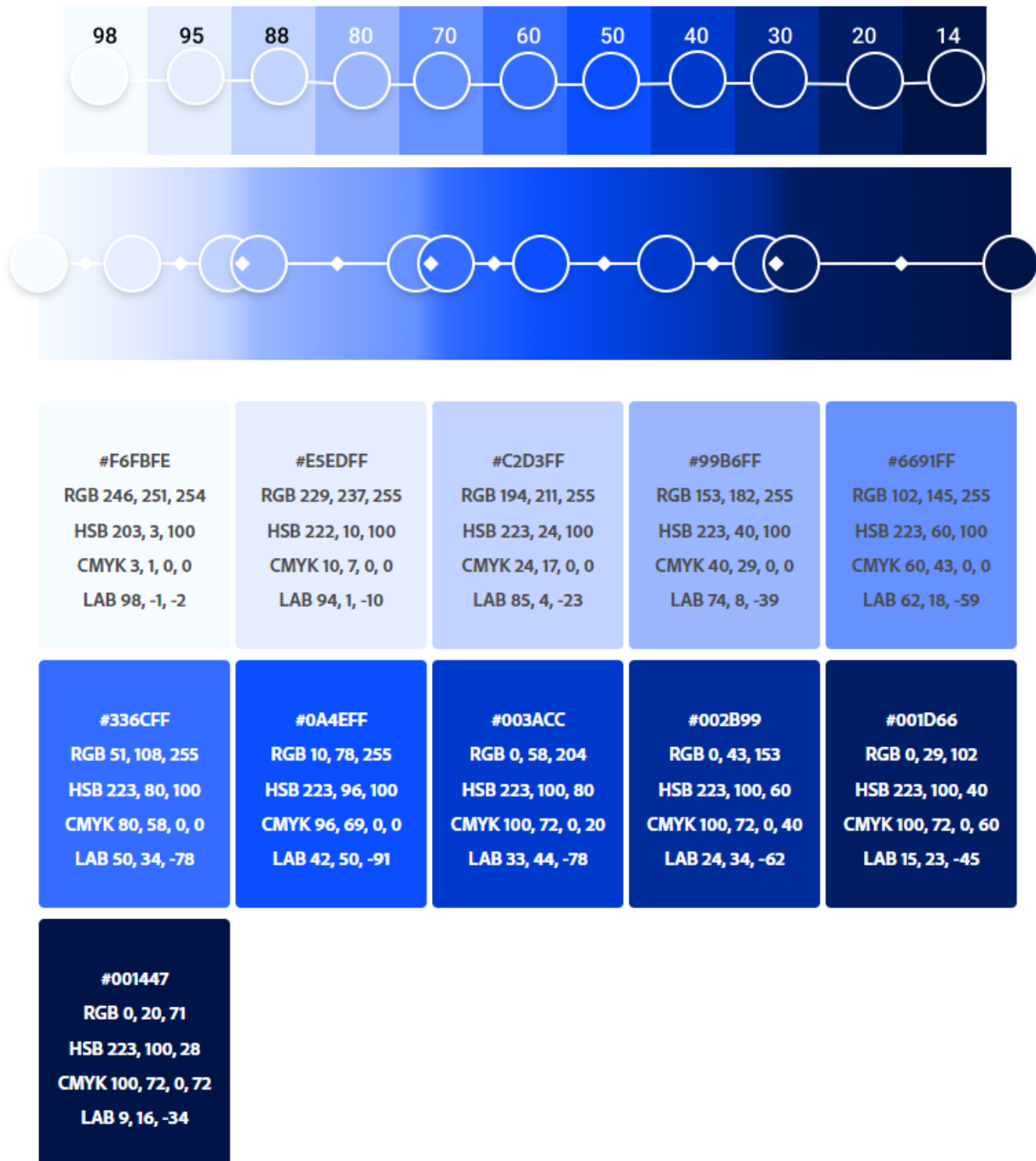


Figure 15: Primary UI color scheme

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