**DEPARTMENT OF COMPUTER SCIENCE, COLLEGE OF SCIENCE**

**SUPERVISOR: DR. KATE TAKYI PROJECT TITLE: WEBLINGO**

**NAME: ABDULLAHI ALHASSAN BAABA INDEX NUMBER: 4234020**

**1.1 Introduction to WebLingo – A Language Enhancement Chrome Extension**

The purpose of this proposal is to outline the development and implementation of WebLingo. WebLingo, a chrome extension, aims to provide users with seamless access to language translation, word breakdown and definition features while browsing on the web. This proposal highlights the problem statement, project’s objectives, methodology, proposed features, resource requirement and project timeline.

**1.2 Problem Statement**

In today’s connected world, language barriers and difficulties of comprehending complex vocabulary make it hard for internet user to communicate effectively and access information online. Existing translation tools and language resources are often not user-friendly and don't work well with web browsers, which makes them less convenient to use. WebLingo solves these problems by offering an easy-to-use language enhancement solution that works seamlessly in the Chrome browser.

**1.3 Aim**

The aim of this project is to develop a software application that enhances language accessibility and comprehension for internet users. By leveraging translation APIs and language resources, the project aims to empower users with seamless language translation and word breakdown features within the web browsing experience.

**1.4 Key Objectives**

Below are the key objectives of the WebLingo project:

* Develop a Chrome extension that seamlessly integrates with the browser and provides language translation and word breakdown features.
* Enable users to translate selected text to their preferred languages using popular translation APIs of their choice.
* Provide word breakdown functionality to assist users in understanding complex words by including synonyms, meanings, and usage examples.
* Integrate the translation and breakdown feature with the browser’s context menu for easy access and seamless user experience.
* Customize the display options of translation and word breakdown features, allowing users to choose between tooltips or pop-up windows.
* Implement user settings to enable personalization, including automatic language detection, source and target language selection, and API preferences.

**1.5 Project Scope**

The scope of this project will encompass the development of a browser extension that integrates with popular web browsers, such as Chrome. The extension will provide users with quick translation capabilities, language detection, comprehensive translations, contextual word breakdowns, and customizable display options. The scope will not include the development of additional browser features unrelated to language translation and comprehension.

**1.6 Project Methodology**

The project will follow the following methodology:

* Conduct research and analysis of existing language-related Chrome extensions and APIs.
* Design and develop the front-end components, including the pop-up window, user interface elements and context menu integration.
* Implement the back-end functionality for translation and word breakdown, utilizing popular translation APIs and language resources.
* Integrate the front-end and back-end components to create a seamless user experience within the Chrome browser.
* Test the functionality, performance, and usability of the WebLingo extension across various webpages and scenarios.
* Refine and iterate the development based on user feedback and testing results.

**1.7 Project Justification**

This project is justified by the increasing need for language accessibility and comprehension in the digital age. With the rapid growth of global connectivity, overcoming language barriers has become essential for effective communication and information access. By developing this language translation and comprehension tool, we aim to improve the browsing experience for users, facilitate cross-cultural communication, and promote inclusivity in the online space.

**1.8 Proposed Features**

WebLingo will have the following features:

* Quick Translation: Instantly translate a selected text.
* Language Detection: Automatically detect the source language without manual selection.
* Accurate Translations: Choose from multiple languages for precise and relevant results.
* Word Breakdown: Get in-depth word analysis with meanings, synonyms, and examples.
* Customizable Display: Choose between tooltips or pop-up windows for preferred display.
* User-friendly Settings: Customize preferences, languages, and display options easily.
* Chrome Integration: Access translation and language features directly from the browser’s context menu.

**1.9 Resource Requirements**

The successful implementation of the WebLingo project will require the following resources:

* Development Software: JavaScript, HTML, CSS, Node.js and Express.js.
* Development Tools: VS Code, Chrome browser, API Documentation, Webpack and indexDB as a local database.
* Debugging Tools: Chrome Developer Tool and Postman.
* API access: Integration with selected translation and word breakdown APIs, such as Google Cloud Translation and Microsoft APIs for translation and Merriam-Webster and Oxford Dictionary APIs for word breakdown.
* Hardware and infrastructure: Computers, Internet Connectivity, Testing Devices, and Hosting Platforms, Live Server and Chrome Web Store.

**1.10 Project Timeline**

The proposed timeline and four phases for the development of WebLingo is as follows:

* Phase 1 - Research and Planning: Define project requirements, objectives and plan development approach and technologies
* Phase 2 - Design and Development: This includes creating the UI/UX design for the extension, Implementing the backend functionalities and integrating the APIs
* Phase 3 - Testing and Refinement: Perform comprehensive testing, gathering feedback and making necessary improvements to optimize performance and user experience
* Phase 4 - Deployment and Launch: Prepare the extension for deployment and submit to the Chrome Web Store.

**1.11 Conclusion**

WebLingo enhances language skills on Chrome by providing a user-friendly tool for translations and word breakdown. Overcoming language barriers, it improves browsing with simple access to language resources. With a well-defined plan, WebLingo ensures seamless communication and comprehension online.