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(DDIS)

RESEARCH PROPOSAL ON DESIGN AND DEVELOPMENT OF A BILINGUAL INFORMATION RETRIEVAL SYSTEM ON MALARIA

BY

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Abstract

Malaria remains a significant public health challenge, particularly in sub-Saharan Africa, where limited access to accurate and timely health information continues to hinder prevention and treatment efforts. In Nigeria, the problem is further complicated by language barriers, as much of the available information is published in English. At the same time, a significant portion of the population primarily communicates in indigenous languages, such as Yoruba. This gap reduces the effectiveness of health education and information dissemination on malaria.

This study is justified by the urgent need for an accessible, bilingual platform that can bridge linguistic divides and improve access to malaria-related information for both health professionals and the general public. By integrating English and Yoruba into a single system, the project promotes inclusivity and ensures that information retrieval is not limited by language proficiency.

The primary objective of this research is to design and develop a bilingual information retrieval system that enables users to query malaria-related resources in either English or Yoruba and retrieve results in their preferred language. The system also aims to provide structured informational content, such as symptoms, treatment, and prevention—alongside dynamic search functionalities.

The methodology utilizes web-based technologies, including a React/TypeScript front-end, a Node.js back-end, and a relational SQL database. A translation module and bilingual interface are incorporated to support cross-linguistic queries. The system is modeled using UML diagrams and implemented with a modular, component-based design to ensure scalability, usability, and accessibility.

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