

**CODE REFACTORING AND PWA IMPLEMENTATION OF  
FORUM KERUKUNAN UMAT BERAGAMA WEBSITE  
FOR THE ENHANCEMENT OF USER EXPERIENCE**

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**ABSTRACT**

This paper focused on code refactoring and PWA implementation in an E-Government website called Forum Kerukunan Umat Beragama Batam. As computer science and information technology become more common, software development consisting of desktop, web and native mobile development becomes popular. In particular, web development, more organizations and institutions develop websites or web apps to endorse their activities and offer their services via the internet for better accessibility. Websites are created and need to be maintained. In order to save cost and development time in the future, code refactoring is a proven solution to be implemented in the Forum Kerukunan Umat Beragama website. Besides refactoring, cross-platform development also becomes a big issue in the process of development. Problems from device and platform compatibility to lack of resources in developing different versions of the same application. Therefore, the developer chose to use Progressive Web App approach introduced by Google as the solution to those problems.

The technology stack used to develop the refactored web app was the same as the previous one. PHP as the backend language, MySQL for relational database management, HTML and CSS for the basic construction of the website, along with Javascript for the addition of enhanced features. As the result of this paper, code refactoring is proven to be a good approach to reduce both time and cost during the development. Progressive Web Apps can be a good alternative to other cross-development approaches.

Keywords: PWA, progressive web apps, lighthouse, code refactoring