

# **DEVELOPING DIGITAL MAP LOCATION MARKER APPLICATION BASED ON MOBILE GIS FOR NAVIGATION PURPOSES USING LOCATION-BASED SERVICE METHOD**

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## **ABSTRACT**

*In today's digital era, map and navigation applications have become essential tools for users seeking to locate destinations, find the fastest routes, and explore new areas. Google Maps is one of the most popular and comprehensive mapping applications, offering a variety of features, including navigation. However, despite its utility, Google Maps has certain limitations, particularly concerning map markers, personalization, individual route creation, and the use of offline maps for navigation. To address these issues, this study developed an innovative application called StellarPath. StellarPath is a mobile-based digital map marker application that utilizes Location-Based Services (LBS) for more effective navigation. This application emphasizes offline usability as a digital map marker. It includes features such as indefinitely stored offline maps, offline navigation, manual route creation, and enhanced personalization, enabling users to save and manage markers with additional information while offline. The test results indicated a success rate of 92.5%, suggesting the efficacy of the application. The conclusion drawn from these results is that the application possesses the capability to download and save maps in an offline state; however, it exhibits deficiencies in the management of downloaded maps. The offline navigation feature enables users to create, save, and manage manual routes on the map. Furthermore, users can create and save location markers with supplementary information in an offline state. The navigation experience is characterized by its adaptability, with the option to initiate navigation by tapping on the map. Additionally, users have the flexibility to turn various features on or off to suit their preferences. The objective of this research is to provide a navigation solution that is more flexible and personalized than the standard map and navigation applications currently available, such as Google Maps.*