

Real-Time Land Use and Land Information System in Homagama Divisional Secretariat Division

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Abstract : Lands are valuable & limited resource which constantly changes with the growth of the population. An efficient and good land management system is essential to avoid conflicts associated with lands. This paper aims to design the prototype model of a Mobile GIS Land use and Land Information System in real-time. Homagama Divisional Secretariat Division situated in the western province of Sri Lanka was selected as the study area. The prototype model was developed after reviewing related literature. The methodology was consisted of designing and modeling the prototype model into an application running on a mobile platform. The system architecture mainly consists of a Google mapping app for real-time updates with firebase support tools. Thereby, the method of implementation consists of front-end and back-end components. Software tools used in designing applications are Android Studio with JAVA based on GeoJSON File structure. Android Studio with JAVA in GeoJSON File Synchronize to Firebase was found to be the perfect mobile solution for continuously updating Land use and Land Information System (LIS) in real-time in the present scenario. The mobile-based land use and LIS developed in this study are multiple user applications catering to different hierarchy levels such as basic users, supervisory managers, and database administrators. The benefits of this mobile mapping application will help public sector field officers with non-GIS expertise to overcome the land use planning challenges with land use updated in real-time.

Keywords : Android, Firebase, GeoJSON, GIS, JAVA, JSON, LIS, Mobile GIS, real-time, REST API

Conference Title : ICMMT 2021 : International Conference on Mobile Mapping Technology

Conference Location : Montreal, Canada

Conference Dates : May 24-25, 2021