

Development of a Web-Based Application for Intelligent Fertilizer Management in Rice Cultivation

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Abstract : In the era of rapid technological advancement, information technology (IT) has become integral to modern life, exerting significant influence across diverse sectors and serving as a catalyst for development in various industries. Within agriculture, the integration of IT offers substantial benefits, notably enhancing operational efficiency. Real-time monitoring systems, for instance, have been widely embraced in agriculture, effectively improving crop management practices. This study specifically addresses the management of rice panicle fertilizer, presenting the development of a web application tailored to handle data associated with rice panicle fertilizer management. Leveraging the normalized difference red edge index, this application optimizes the quantity of rice panicle fertilizer used, providing recommendations to agricultural stakeholders and service providers in the agricultural information sector. The overarching objective is to minimize costs while maximizing yields. Furthermore, a robust database system has been established to store and manage relevant data for future reference in rice cultivation management. Additionally, the study utilizes the Representational State Transfer software architectural style to construct an application programming interface (API), facilitating data creation, retrieval, updating, and deletion for users via the HyperText Transfer Protocol methods. Future plans involve integrating this API with third-party services to incorporate it into larger frameworks, thus catering to the diverse requirements of various third-party services.

Keywords : application programming interface, HyperText Transfer Protocol, nitrogen fertilizer intelligent management, web-based application

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