

LOCAL GOVERNMENT UNIT 4: BARANGAY CRIME DATA ANALYTICS AND REPORTING (REAL-TIME ANALYTICS MANAGEMENT, DATA INTEGRATION FROM MULTIPLE SOURCES AND CRIME MAPPING MANAGEMENT AND VISUALIZATION USING ARCGIS)

ABSTRACT

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The Barangay Crime Data Analytics and Reporting (CDAR) system is a digital platform designed to improve crime monitoring and response at the barangay level. It integrates real-time analytics, multi-source data collection, and geospatial crime mapping through ArcGIS to support informed decision-making among local officials. The system consolidates information from barangay personnel and community reports into a centralized dashboard. Key features include predictive analytics, crime visualization, and automated notifications that enhance the timeliness and effectiveness of local interventions. Scalable, secure, and user-friendly, CDAR aims to replace fragmented manual processes with a unified, data-driven solution for barangay crime prevention and governance. The system was developed using the Agile Scrum methodology, which emphasizes iterative progress and ongoing user feedback. Development was organized into sprint cycles, each targeting critical features such as real-time dashboards and ArcGIS integration. Daily coordination supported cross-functional collaboration, while periodic reviews enabled barangay stakeholders to test, evaluate, and refine system components. This approach ensured that the resulting platform addressed the specific needs of the community and remained both practical and adaptive. CDAR facilitated real-time crime tracking and successfully merged data from various sources into a unified view of local crime activity. The use of ArcGIS allowed barangay officials to visualize hotspots and analyze spatial crime trends. Residents were able to report incidents anonymously, access simplified dashboards, and receive timely alerts. The system also complied with data privacy regulations and was accessible via both web and mobile platforms. The implementation of CDAR addressed longstanding challenges in barangay-level crime management, particularly delayed reporting and fragmented data access. Its real-time analytics and geospatial capabilities empowered local leaders to make faster, evidence-based decisions. The Agile Scrum approach supported continuous user engagement and technical flexibility, resulting in a system that is both community-centered and operationally effective. Overall, CDAR promotes transparency, public participation, and proactive governance, contributing to safer and more responsive barangays.

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