

DEVELOPMENT OF A PARKING-CAPACITY MONITORING SYSTEM FOR AYALA MALLS FAIRVIEW TERRACES

ABSTRACT

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Urban shopping malls are major traffic generators because of their commercial and social functions. Ayala Malls Fairview Terraces in Quezon City experiences high visitor volume, particularly during peak hours, placing pressure on parking capacity, customer convenience, and operational efficiency. Manual parking monitoring may result in counting errors and delays in identifying available spaces. This study aimed to develop an automated parking-capacity monitoring system intended to provide accurate, real-time parking information, improve traffic flow, and support operational performance. The study used quantitative, developmental, and descriptive research approaches and was guided by Queuing Theory. Purposive sampling was used to select ten respondents comprising five computer engineers and five parking attendants. Quantitative data were collected to evaluate the proposed system's acceptability, functionality, and effectiveness. The developmental approach guided system creation and refinement, while the descriptive component assessed current parking conditions and the system's potential contribution to parking availability. Computer engineers and parking attendants evaluated the proposed parking-capacity system positively, emphasizing its technical efficiency, operational practicality, and potential to improve traffic flow. Testing identified minor issues, including false sensor detections and programming delays, which were reportedly addressed to improve accuracy and reliability. The favorable evaluator feedback indicates that the system may be practical for parking monitoring at Ayala Malls Fairview Terraces. Minor technical concerns were addressed through system adjustment and calibration. Regular maintenance and further testing are recommended to assess sustained performance. Claims that the system reduces congestion, improves customer satisfaction, or materially improves operations require field-based outcome data.

RECOMMENDED CITATION

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