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Proposal For Machine Learning Model that Incorporates with ICT Incidents Reporting System

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The primary objective of this paper is to develop a machine learning model capable of classifying all incidents reported to the ICT office at Government Computing and Logistics Agency (GCLA). This classification aims to determine whether the incidents are caused by network-related issues or non-network related problem. The purpose of this classification is to optimize the prioritization of incidents, ensuring that if multiple users from the same location encounter similar network problems, this indicates presence of switch or router malfunctions. The system will automatically notify the ICT staff, prompting immediate resolution of all related incidents from that location, as the network issue affects a significant number of users. The model is designed to work in tandem with the ICT incident reporting system, addressing current challenges at GCLA, where incidents are often reported via phone calls or by visiting the ICT office in person. This traditional reporting method results in unresolved incidents and a lack of proper records, which the proposed system aims to rectify. The proposed system will consist of two subsystems: user and device management, and incident submission. The frontend will be developed using React.js, while the backend will utilize Spring Boot and MySQL. A machine learning model (embed-English-v2.0,) will be trained to classify incidents and the classification results will be used to prioritize incidents. The model's evaluation demonstrated exceptional performance, achieving an accuracy, recall, and F1-score of 99%. This indicates the model's high effectiveness in accurately classifying and ICT incidents, significantly improving the efficiency of incident management at GCLA.

Keywords: Machine learning , incident classification , Flask , Reacts and springboot