RANCANG BANGUN APLIKASI PENCATATAN DATA KAPAL MASUK DAN KELUAR BERBASIS WEB

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ABSTRAK

Vessel Traffic Service (VTS) merupakan unit pelayanan navigasi yang berperan dalam mendukung keselamatan dan kelancaran pelayaran melalui pengelolaan informasi lalu lintas kapal. Di VTS Dumai, proses pencatatan data kapal masuk, keluar, dan melintas masih dilakukan secara manual menggunakan buku jurnal dan Microsoft Excel. Proses tersebut menimbulkan beberapa kendala, seperti keterlambatan pelaporan, potensi kesalahan pencatatan, duplikasi data, serta kesulitan dalam pengelolaan dan pencarian data kapal. Penelitian ini bertujuan merancang dan membangun aplikasi pencatatan data kapal masuk dan keluar berbasis web pada VTS Dumai untuk mempermudah proses pencatatan, pengelolaan, pencarian, dan pelaporan data kapal. Aplikasi dikembangkan menggunakan bahasa pemrograman PHP dengan framework Laravel serta basis data MySQL. Sistem menyediakan fitur pengelolaan data kapal, pencatatan aktivitas kapal, pencarian data berdasarkan nama kapal, *callsign*, dan *Maritime Mobile Service Identity* (MMSI), serta pembuatan laporan harian dan bulanan dalam bentuk PDF dan grafik. Hasil pengujian menunjukkan bahwa aplikasi dapat berjalan sesuai kebutuhan operasional VTS Dumai dan mampu membantu operator dalam mengelola data kapal secara lebih cepat, akurat, dan terstruktur, sehingga meningkatkan efektivitas dan efisiensi proses pencatatan data kapal.

Kata Kunci: pencatatan data kapal, Vessel Traffic Service (VTS), aplikasi berbasis web, Laravel, MySQL.

DESIGN AND DEVELOPMENT OF A WEB-BASED SHIP ARRIVAL AND DEPARTURE DATA RECORDING APPLICATION

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ABSTRACT

Vessel Traffic Service (VTS) is a navigation service unit that plays an important role in supporting maritime safety and the smooth flow of shipping activities through the management of vessel traffic information. At VTS Dumai, the process of recording ship arrival, departure, and passing data is still carried out manually using logbooks and Microsoft Excel. This process causes several problems, including delays in reporting, potential recording errors, data duplication, and difficulties in managing and retrieving ship data. Therefore, this study aims to design and develop a web-based ship arrival and departure data recording application for VTS Dumai to facilitate the recording, management, searching, and reporting of ship data. The application was developed using the PHP programming language with the Laravel framework and MySQL as the database management system. The system provides features for ship data management, ship activity recording, data searching based on ship name, call sign, and Maritime Mobile Service Identity (MMSI), as well as daily and monthly report generation in PDF format and graphical visualization. The testing results indicate that the developed application operates in accordance with the operational requirements of VTS Dumai and assists operators in managing ship data more quickly, accurately, and systematically. Consequently, the application is expected to improve the effectiveness and efficiency of the ship data recording process.

Keywords: *ship data recording, Vessel Traffic Service (VTS), web-based application, Laravel, MySQL*