

ABSTRAK

Pengelolaan data Tes Kesamaptaan Jasmani (TKJ) berkala anggota Polisi Republik Indonesia di Polda Sumatera Selatan masih melibatkan formulir fisik dan rekap Microsoft Excel, sehingga berisiko menimbulkan kesalahan input, kesalahan perhitungan, duplikasi data, kesulitan pencarian riwayat nilai, serta perubahan data yang sulit ditelusuri. Penelitian ini bertujuan membangun aplikasi pengelolaan data TKJ berbasis *website* dengan menerapkan metode V-Model. Metode V-Model digunakan karena memiliki tahapan pengembangan yang terstruktur, mulai dari pengumpulan kebutuhan, perancangan sistem, perancangan arsitektur, perancangan modul, implementasi, hingga pengujian. Aplikasi dikembangkan menggunakan *framework* Laravel dan basis data MySQL dengan lima hak akses pengguna, yaitu Admin Biro SDM, Operator Biro SDM, Validator Propam, Pimpinan Biro SDM, dan Anggota. Sistem yang dibangun menyediakan fitur pengelolaan akun, data satker, kriteria *score*, *input* nilai, import nilai, perhitungan *score* otomatis, validasi nilai, perbaikan nilai ditolak, log aktivitas, monitoring pimpinan, rekap nilai, *export* PDF dan Excel, pengumuman, serta akses nilai pribadi anggota. Pengujian dilakukan melalui *Unit Testing*, *Integration Testing*, System Testing dengan metode *Black Box Testing*, dan *User Acceptance Testing* (UAT). Hasil Unit Testing menunjukkan 20 kasus pengujian dengan 30 *assertion* berhasil dijalankan. *Integration Testing* dan *System Testing* menunjukkan seluruh fungsi berjalan sesuai alur dan hak akses. Hasil UAT menunjukkan 39 dari 41 fungsi diterima dan 2 fungsi diterima dengan catatan, kemudian diperbaiki hingga seluruh fungsi utama dinyatakan diterima. Dengan demikian, aplikasi ini dapat membantu pengelolaan data TKJ agar lebih terpusat, terstruktur, terdokumentasi, serta mendukung proses validasi dan *monitoring* nilai TKJ di Polda Sumatera Selatan.

Kata Kunci: Manajemen Data, Tes Kesamaptaan Jasmani, V-Model, Laravel, MySQL, *Black Box Testing*, *User Acceptance Testing*.

ABSTRACT

The management of periodic Physical Fitness Test (TKJ) data for Indonesian National Police (Polri) personnel at the South Sumatra Regional Police (Polda Sumatera Selatan) still relies on physical forms and Microsoft Excel spreadsheets. This manual process introduces risks of input errors, calculation mistakes, data duplication, difficulty in retrieving score histories, and untraceable data modifications. This study aims to develop a web-based TKJ data management application using the V-Model method. The V-Model was selected for its highly structured development phases, spanning requirement gathering, system design, architectural design, module design, implementation, and testing. The application was built using the Laravel framework and a MySQL database, featuring five distinct user access levels: HR Bureau Admin, HR Bureau Operator, Propam Validator, HR Bureau Chief, and Personnel. The system provides features for account management, work unit data, scoring criteria, score input, score import, automated score calculation, score validation, rejected score revision, activity logs, leadership monitoring, score recaps, PDF and Excel export, announcements, and personal score access for personnel. Testing was conducted through Unit Testing, Integration Testing, System Testing via the Black Box method, and User Acceptance Testing (UAT). Unit Testing results showed that 20 test cases with 30 assertions were successfully executed. Integration Testing and System Testing demonstrated that all functions operated correctly according to the workflow and access privileges. UAT results indicated that 39 out of 41 functions were accepted, while 2 functions were accepted with revisions, which were subsequently fixed until all primary functions were fully accepted. In conclusion, this application effectively streamlines TKJ data management to be more centralized, structured, and documented, while supporting the validation and monitoring processes of TKJ scores at the South Sumatra Regional Police.

Keywords: Data Management, Physical Fitness Test, V-Model, Laravel, MySQL, Black Box Testing, User Acceptance Testing.