

ABSTRAK

Oktav Dwi Ariyanto, 2026. Rancang Bangun Visual *Product Configurator* Pakaian Menggunakan Teknik *2D Layering* dan *State Management* Berbasis Web. Skripsi. Program Studi Teknik Informatika, Fakultas Teknik, Universitas PGRI Madiun. Pembimbing (I) Sri Anardani, S.Kom., M.T. Pembimbing (II) Moch Yusuf Asyhari, S.Tr.Kom., M.Kom.

Perkembangan kebutuhan pakaian kustom menuntut proses pemesanan yang cepat, akurat, dan terstruktur. Pada Nata Bordir, pemesanan masih didominasi komunikasi melalui WhatsApp dan pencatatan manual sehingga detail model, warna, ukuran, dan posisi bordir tersebar dalam percakapan yang tidak terstruktur. Kondisi ini berdampak pada tingginya potensi kesalahan produksi. Berdasarkan hasil observasi dan wawancara dengan pemilik Nata Bordir pada tahun 2025, rata-rata tingkat kesalahan produksi mencapai 13,64% dengan rata-rata waktu pelayanan 37,9 menit per pelanggan. Penelitian ini bertujuan merancang dan membangun visual *product configurator* pakaian berbasis web menggunakan teknik *2D layering* dan *state management* untuk menampilkan konfigurasi pakaian secara interaktif, mendukung kalkulasi harga *real-time*, *checkout*, pelacakan pesanan, serta menghasilkan Surat Perintah Kerja (SPK) digital. Metode pengembangan sistem yang digunakan adalah Agile Scrum melalui tahapan penyusunan *product backlog*, *sprint planning*, *sprint*, *sprint review*, dan *sprint retrospective*. Pengujian sistem dilakukan menggunakan metode *smoke testing* pada sisi pelanggan dan admin untuk memastikan fitur utama berjalan sesuai kebutuhan. Hasil penelitian menunjukkan bahwa sistem yang dibangun mampu memvisualisasikan komponen pakaian dan warna secara dinamis, menyimpan pilihan kustomisasi secara terstruktur, menghitung estimasi harga otomatis, mendukung unggah desain, *checkout*, riwayat dan pelacakan pesanan, verifikasi pembayaran, pengelolaan data master, serta pembuatan SPK PDF. Dengan demikian, sistem dapat membantu meningkatkan ketepatan informasi pesanan dan mendukung proses layanan serta produksi yang lebih rapi dan efisien.

Kata kunci: *visual product configurator, 2D layering, state management, pakaian kustom, smoke testing, SPK digital.*

ABSTRACT

Oktav Dwi Ariyanto, 2026. Design and Build of a Clothing Visual Product Configurator Using 2D Layering Techniques and Web-Based State Management. Undergraduate Thesis. Informatics Engineering Study Program, Faculty of Engineering, Universitas PGRI Madiun. Supervisor I: Sri Anardani, S.Kom., M.T. Supervisor II: Moch Yusuf Asyhari, S.Tr.Kom., M.Kom.

The growing demand for custom apparel requires an ordering process that is fast, accurate, and well structured. At Nata Bordir, orders are still dominated by WhatsApp communication and manual recording, causing details such as model, color, size, and embroidery placement to be scattered across unstructured conversations. This condition increases the risk of production errors. Based on interviews and observations with the owner of Nata Bordir in 2025, the average production error rate reached 13.64% with an average service time of 37.9 minutes per customer. This study aims to design and build a web-based visual product configurator for apparel using 2D layering and state management to provide interactive garment visualization, real-time price calculation, checkout, order tracking, and digital work order generation. The system development method used in this study is Agile Scrum through the stages of product backlog preparation, sprint planning, sprint, sprint review, and sprint retrospective. System testing was conducted using the smoke testing method on customer and admin modules to ensure that the main features run according to user requirements. The results show that the developed system can dynamically visualize garment components and colors, store customization choices in a structured manner, calculate prices automatically, support design upload, checkout, order history and tracking, payment verification, master data management, and PDF-based work order generation. Therefore, the system helps improve order information accuracy and supports a more organized and efficient service and production process.

Keywords: *visual product configurator, 2D layering, state management, custom apparel, smoke testing, digital work order*