

ANALYZING THE IMPACT OF SEMI-AUTOMATED MACHINE IN JUST-IN-TIME PRODUCTION LINES AT A TOY COMPANY, IN CIKARANG, JAWA BARAT

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Submitted as one of the requirements

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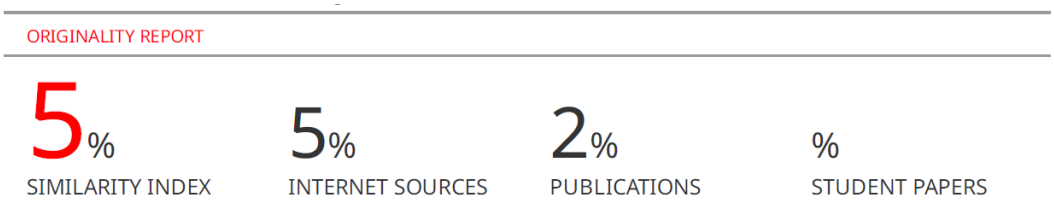
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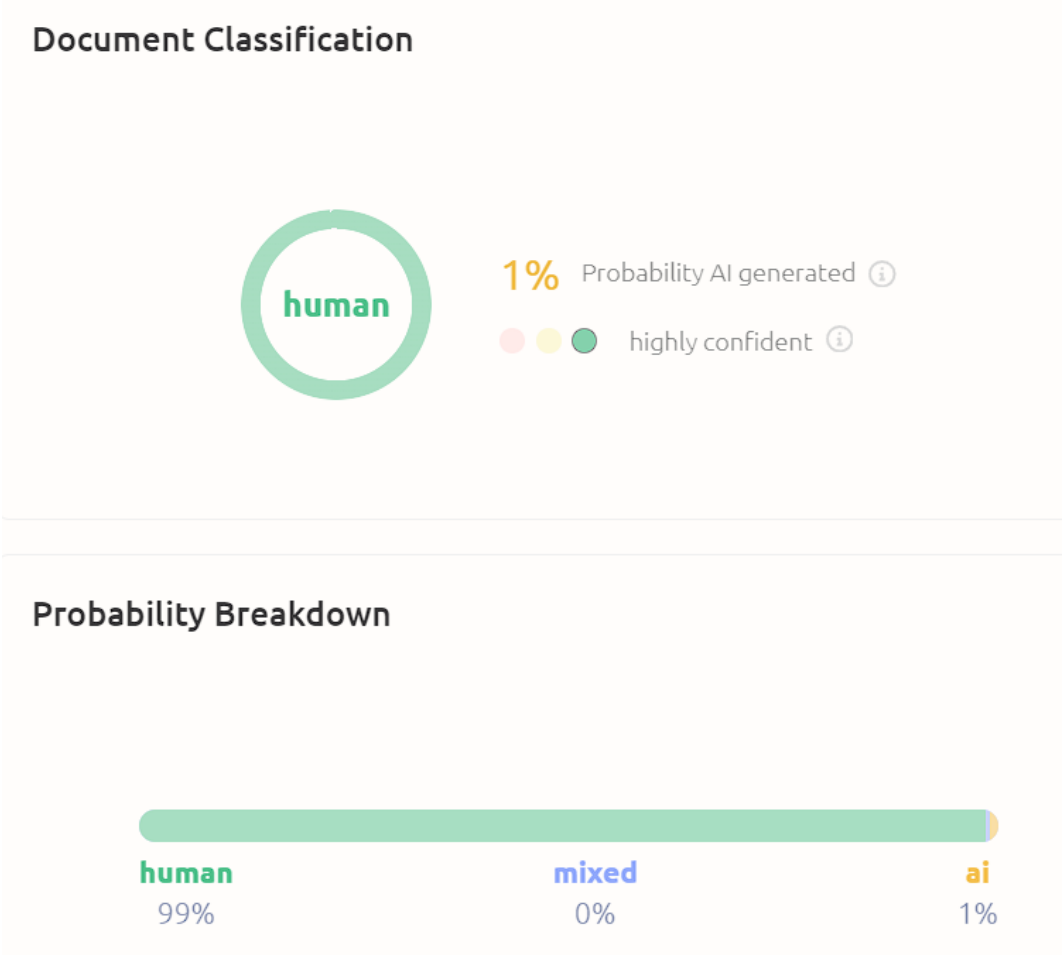
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SIMILARITY CHECKING RESULT



AI BASED PLAGIARISM CHECKING RESULT



ABSTRACT

The JIT Lines in PT. XYZ is one of the several special lines set up in the production floor of the Final Assembly stage. And with growing demands, PT. XYZ also needs to automate its production efforts. In 2022 – 2023, almost 70.000 products were produced in the JIT Lines alone, but many technical aspects of those lines are still problematic. In terms of the efficiency aspect, the current process produced only 473 pieces per shift, although the target is at 500 pieces. Furthermore, from the quality aspect, several problems like defect and missing parts are found and measured at 9% of the entire output, higher than the 4% standard, and several positions using the current machine still causes postural risks. PT. XYZ, based on the current situation that's been analyzed in the actual lines, are considering to buy a semi-automated machine to improve these issues. Ideally, the impact of the new machine should result in the improvement of those three aspects in the JIT Lines, should increase product output to more than 500 pieces per shift. In terms of quality, the targeted missing parts and defect issues should be 4% or lower, and the postural risk should be low.

Keywords: *JIT Lines, Line balancing, Quality, Bottlenecks, Vision Camera, Piloting*

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LIST OF TERMINOLOGIES

PMD	: Pre-Measured Data or the Cycle Time unit used in PT. XYZ.
Labor Distribution	: the distribution and control of labor force among various jobs or projects in order to maximize output and resource line balancing
House of Quality	: a method for translating customer requests into precise engineering specifications and product attributes in quality management.
PSER	: Pre-Start EHS Review or a safety process carried out in advance of activities to detect and reduce possible threats to the environment, human health, and safety.
Runrate	: Quantity / Shift or Demand of Product per Shift.
Takt Time	: Product assembly time to meet demand
Fatigue	: Tiredness or stiffness of muscles due to a repetitive job or action.
Sealing	: The process of locking paperbags.
Payback Period	: The length of time
REBA	: Rapid Entire Body Assessment is a worksheet analysis to determine the scoring of Postural Risk Assessment in a workplace environment.