



**IMPLEMENTING LOOPS SYSTEM FOR CONTROLLING TOOL
MOVEMENT**

**MUHAMMAD FAIZUL RIZAL B.ZAINAL ALAM
(2005388876)**

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**Faculty of Mechanical Engineering
Universiti Teknologi MARA (UiTM)**

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ABSTRACT

Today's manufacturing industry has increasingly demanding productivity and profitability requirements. Such demands can be satisfied only if production systems are highly automated and extremely flexible. One of the main activities the manufacturing industry has to deal with is machining. In machining, as in any production process, optimal performance is always to be desired. This project focusing in designing a machine and its controller consist of Machine Control Unit (MCU) the brain of the Numerical control machine (NC), The Data Processing Unit (DPU) which reads the part program and The Control Loop Unit (CLU) that controls the machine tool operation. By implementing Open Loop Systems for Controlling Tool Movement, stepping motor are used to create movement. Motors rotate a fixed pulse for each signal received from the MCU. The motor sends a signal back indicating that the movement is completed. No feedback to check how close the actual machine movement comes to the exact movement programmed. This project significantly to integrate the manufacturing technology knowledge and individuals skills in order to apply in the real field and to improve the capability of the current Computer Numerical Control (CNC) milling machine with auditioning of advance equipment that enhances the precision, smoother machine action and upgraded control system.

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