AND DEVELOPMENT OF A PROGRAMMABLE LOGIC
NTROLLER-BASED TABLE TOP COFFEE GRINDER

DESIGN PROJECT

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DESIGN AND DEVELOPMENT OF A PROGRAMMABLE LOGIC CONTROLLER-BASED TABLE TOP COFFEE GRINDER

Undergraduate Design Project
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ABSTRACT

DELLONA, MARK ANTHONY S and SALCEDO. NELIZA E.. Design and Development of a Programmable Logic Controller-based Table-top Coffee Grinder. Undergraduate Design Project. Bachelor of Science in Computer Engineering. Cavite State University, Indang Cavite. March 2008. Adviser: Ms. Emeline C. Guevarra.

The Programmable Logic Based Table Top Coffee Grinder was designed and developed to grind the roasted coffee beans from the roasting unit that was connected to it. The machine grinds the roasted coffee beans from the roasting unit automatically.

The machine has four major components, the PLC, grinding blades, power supply and the 110V DC motor. The grinding unit had a dimension of 49.5 centimeters by 12.7 centimeters weighing approximately 4.5 kilograms. The blades were approximately 10.2 centimeters in length. The machine's operation is controlled by the PLC.

The PLC used was FX 0n 40MT. Ladder diagram was used in the development of the software.

The machine has a total cost of Php 24,888.00 including all the expenses incurred in the development and construction of the machine.

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DESIGN AND DEVELOPMENT OF A PROGRAMMABLE LOGIC CONTROLLER-BASED TABLE-TOP COFFEE GRINDER[1/]

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[1/]An undergraduate thesis presented to the faculty of the Department of Computer and Electronics Engineering, Cavite State University (CvSU). Indang Cavite. In partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Engineering (BSCoE). Contribution No. CoE-2007-08-004. Prepared under the supervision of Mrs. Emeline C. Guevarra.

INTRODUCTION

Coffee, common name for any of a genus of evergreen trees of the madder family, and also for their seeds (beans) and for the beverage made from them. There are 59 species but only four are of commercial importance. The shrub or small tree, 4.6 to 6 m (15 to 20 ft) high at maturity, bears shiny green, oval leaves that persist for three to five years and white, fragrant flowers that bloom for only a few days. During the six or seven months after the appearance of the flower, the fruit develops, changing from light green to red and, ultimately, when fully ripe and ready for picking, to deep crimson. The mature fruit, which resembles a cherry, grows in clusters attached to the branches by very short stems, and it usually contains two seeds, or beans, surrounded by a sweet pulp.

Coffee beans are then ready to be roasted to develop the aroma, flavor and color desired. Finally, it was grinded using coffee grinder. The grinded coffee beans were packed, sealed and ready for marketing. Coffee processing operations included roasting,