

Republic of the Philippines  
CAVITE STATE UNIVERSITY  
(CVSU)

DON SEVERINO DE LAS ALAS CAMPUS

**CONSTRUCTION AND EVALUATION OF A MICROCONTROLLER DEVICE  
FOR COFFEE PULPER AND SORTER**

COLLEGE OF ENGINEERING AND INFORMATION TECHNOLOGY  
Department of Computer and Electronics Engineering

An Undergraduate Design Project  
Submitted to the Faculty of the  
Cavite State University  
Indang, Cavite

In partial fulfillment  
of the requirements for the degree of  
Bachelor of Science in Computer Engineering



00001201

Construction and evaluation of  
microcontroller for coffee pulper and  
620.0042  
DP-125

**MARY JANE H. DESACOLA**

**RICHARD A. PEREA**

**RHONA M. POLICAR**

April 2004



## ABSTRACT

**DESACOLA, MARY JANE HERNANDEZ, PEREA, RICHARD ARGUELLES and POLICAR, RHONA MOJICA.** "Construction and Evaluation of a Microcontroller Device for Coffee Pulper and Sorter." Bachelor of Science in Computer Engineering. Cavite State University, Indang, Cavite. April 2004. Adviser: Mrs. Marivic G. Dizon.

The study generally aimed to construct and evaluate a microcontroller device for coffee pulper and sorter machine that would automatically pulp the coffee berries and separate the pulp from unpulped beans.

The constructed hardware of the system consists of the microcontroller circuit, push button switches, LCD, opto sensor, relay, contactor, power supply, AC motor and the coffee pulper and sorter machine.

Assembly language was the language used to develop the software of the system and to control the operation of the entire system.

The design project was evaluated at the Physical Planning Service Building, Cavite State University.

Results revealed that the microcontroller device for coffee pulper and sorter was applicable, useful and efficient compared to the mechanical coffee pulper. The design project also provided less human intervention aside from easy operation of the machine.



## TABLE OF CONTENTS

	Page
BIOGRAPHICAL DATA.....	iii
ACKNOWLEDGEMENT.....	iv
ABSTRACT.....	vii
LIST OF TABLES .....	x
LIST OF FIGURES.....	xi
INTRODUCTION .....	1
Significance of the Study.....	3
Objectives of the Study .....	4
Time and Place of the Study.....	4
Scope and Limitation of the Study .....	4
Definition of Technical Terms.....	6
REVIEW OF RELATED LITERATURE.....	10
MATERIALS AND METHODS.....	24
Materials.....	24
Microcontroller Circuit.....	24
Switch Unit Circuit.....	24
Coffee Pulper and Sorter .....	24
Methods.....	27
Construction of Microcontroller Circuit.....	27
Construction of Switching Unit Circuit.....	27
Coffee Pulper with Sorter .....	30