DESIGN AND DEVELOPMENT OF A MICROCONTROLLER-BASED COIN OPERATED LOCKER FOR THE COLLEGE OF ENGINEERING AND INFORMATION TECHNOLOGY, CAVITE STATE UNIVERSITY MAIN CAMPUS

Undergraduate Design Project
Submitted to the Faculty of the
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In partial fulfillment
of the requirements for the degree of
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Design and development of a microcontroller-based coin operate for the
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LEONIDES Q. AMANTE
GIRLIE I. GOMEZ
ARABEL P. PUNONGBAYAN
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ABSTRACT

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The Design and Development of a Microcontroller-Based Coin Operated Locker for the College of Engineering and Information Technology, Cavite State University Main Campus was constructed at Pasong Kawayan I, General Trias, Cavite. The general objective of the study was to develop a coin operated locker for the College of Engineering and Information Technology, Cavite State University Main Campus.

The design project provided ease and convenience to students carrying many loads. Aside from convenience, students were guaranteed that their things are safe and secured. It was secured of six-digit pin code or password that would be entered on the keypad before inserting a coin. The available locker could be rented by inserting a five-peso coin for twenty-four hours rental period. Intruders would find it hard to break the password since three mistakes would cause an alarm of the system.

The Design and Development of a Microcontroller-Based Coin Operated Locker comprised both software and hardware. Assembly language was used to develop the software. The primary component of the system was the PIC16F873 microcontroller, which controlled the whole system. The system also provided the following components: DS1287 Real Time Clock used for saving data and time settings; 74HC373 integrated

circuit that served as link between PIC16F873 and ULN2003. It also provided the following controls for the function of the machine: an LCD for viewing the time and operation of the system; and solenoid for locking and opening mechanism.

The design project was presented to the design project adviser and technical critic at the second floor of the Three-Storey Engineering Building of the College of Engineering and Information Technology. The whole system underwent a series of testing and evaluating through pilot testing and questionnaires. One hundred questionnaires were distributed to students conducting classes in the said building. Based on the final evaluation, the performance of the system had been found satisfactory.

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