**AUTOMATED TIMETABLE SCHEDULING SYSTEM USING BACKTRACKING ALGORITHM**

An Undergraduate Thesis

Submitted to the Faculty of the

Department of Computer Studies

Cavite State University-Cavite College of Arts and Trade Campus

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In partial fulfillment

Of the requirements for the degree

Bachelor of Science in Computer Science

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June 2023

**APPROVAL SHEET**

**BIOGRAPHICAL DATA**

Hernando Jr. J. Costelo, the youngest among three siblings, was born on November 17, 1999, in Tejeros Convention, Rosario, Cavite. He demonstrated exceptional dedication and industriousness during his elementary years, earning recognition as the most hardworking student in his batch.

Throughout junior high school, he held various student officer positions at Tanza National Comprehensive High School. Continuing his education, he chose the TVL-ICT strand for senior high school, aligning with his interest in computer-related fields. This led him to pursue a Bachelor of Science degree in Computer Science at Cavite State University CCAT Campus.

Michelle Emmanuel S. Gaetos is the eldest son of Miss. Beverly Anne S. Gaetos, he was born on December 07, 1999 in Makati City. He has 1 sibling named Mican Paulo Martin S. Gaetos they are now residing in Tanza, Cavite.

He finished his primary education in Makati Elementary School last 2012, and secondary in General Pio Del Pilar National Highschool in 2016 and Finished Senior High School in 2018 in Saint Paul College of Makati.

In his Tertiary Education he pursued Bachelor of Science in Computer Science in a University Called Cavite State University CCAT Campus last 2018.

Johnuel Javier, born on August 11, 1998, in Sariaya, Quezon, is the eldest among the three children of Mr. Wilfredo Javier and Mrs. Carmen Javier. His siblings are named Micah Mhariey Javier and John Wheslie Javier. He currently resides in Tejeros Convention, Rosario, Cavite.

He completed his elementary education at Concepcion Pinagbakuran Elementary School in 2011. For his secondary education, he attended Lutucan National High School in Sariaya, Quezon, where he completed both high school and senior high school in 2018.

In the same year, he enrolled at Cavite State University CCAT Campus to pursue a Bachelor of Science degree in Computer Science.

Ren Russel E. Lavilla, the youngest child of Renato G. Lavilla and Consorcia E. Lavilla, was born on June 13, 2000, in Tingloy, Batangas. He has two siblings, Ren Rochelle E. Lavilla and Ren Rannie E. Lavilla, and they reside in Grand Riverside Subdivision, City of General Trias, Cavite.

He completed his primary education at General Artemio Ricater Memorial School (GARMS) in 2012, followed by his secondary education at Governor Ferrer Memorial National High School, graduating in 2016. He then finished his Senior High School education in 2018 at Luis Y. Ferrer Junior Senior High School.

Continuing his academic journey, he enrolled in the Bachelor of Science in Computer Science program at Cavite State University CCAT Campus for his tertiary education.

Lester D. Quijano, born on April 13, 2000, in Amaya, Tanza, Cavite, is the youngest child of Pedro Jr. L. Quijano and Merly D. Quijano. His siblings are Edmer D. Quijano and Kris Mae D. Quijano, and they reside in Bijia, Calibuyo, Tanza, Cavite.

He completed his primary education at Flaviana F. Arayata Elementary School (FFAES) in 2012 and his secondary education at Amaya School of Home Industries (ASHI) in 2016. In 2018, he successfully finished his Senior High School education at Amaya School of Home Industries (ASHI).

For his tertiary education, he chose to pursue a Bachelor of Science degree in Computer Science at Cavite State University CCAT Campus.

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**HERNANDO JR. J. COSTELO**

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# ABSTRACT

**COSTELO, HERNANDO JR J., GAETOS, MICHELLE EMMANUEL S., JAVIER, JOHNUEL M., LAVILLA, REN RUSSEL E., QUIJANO, LESTER Automated Timetable Scheduling System using Backtracking Algorithm** Undergraduate Thesis. Department of Computer Studies Cavite State University-Cavite College of Arts and Trades Campus, Rosario, Cavite. June 2023. Adviser: Mr. Karlo Jose E. Nabablit

The research entitled "Automated Timetable Scheduling System using Backtracking Algorithm" was conducted from May 2022 to May 2023. The objectives of the study were as follows: 1) document and analyze the existing process of scheduling classes, 2) design and develop a web application that automate the generation of class schedules. 3) test the reliability of generated schedules based on testing conditions and test the functionality of system modules. b) Evaluate the system using modified ISO-IEC 25010, 4) Create an implementation plan for the deployment 5) to evaluate the system using the ISO/IEC 25010.

ATS System showcased its effectiveness and high satisfaction among IT Experts and end users. The system successfully achieved its objectives of automating class schedule generation and enhancing the scheduling process in educational institutions. It demonstrated reliability, functionality, and compliance with ISO-IEC 25010 standards. The positive evaluations from both experts and users highlight its value and efficiency.

By offering an efficient and user-friendly solution, the system improves productivity, streamlines scheduling processes, and enhances overall satisfaction in educational institutions. Its successful evaluation establishes it as a dependable tool for optimizing class scheduling and supporting institutions in effectively achieving their scheduling goals.

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