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I. PROJECT TITLE

SUBJECT'S TASK MANAGEMENT SYSTEM

II. INTRODUCTION

"The Roots of Education is bitter, but the Fruit is Sweet," is probably a wellknown saying by one of the greatest philosophers of his time; Aristotle. Although quite compelling, the hardships that are being poured down when it comes to education should not be taken for granted. In fact, due to the progressive passing of time and advancements of technology in our current generation, it is guite undeniable the struggles of fitting something traditional into a contemporary thing. Just taking education for example, traditional learning was great during the old times, but right now, with the ever-growing population plus the different complications around the environment, learning is becoming duller and duller. This is where contemporary learning comes. With it so many forms, the one that might be well-known is E-Learning. E-Learning is a learning system based on formalized teaching but with the help of electronic resources ("What is E-Learning?", n.d.). Since the advent of e-learning, gaining useful information and learning something has not been any easier. In fact, e-learning is becoming and becoming more ubiquitous because it scales, saves and money and time ("What is elearning?", 2018). Because through electronic media and technology students and educators worry less of the topics and things that they might miss. Because one thing's for sure is that technology will not be going away so soon, thus the benefits of elearning.

Moving forward, education escalates faster and further as a person's achievements in life go on. College students of Cavite State University – Bacoor City Campus are not excused in the said predicament. Just only imagining the paper works, the tasks and much more that a college student indulges is a no joke. Students of CvSU are feeling this at first hand. In the campus, nothing much is

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done automatically, because of the lack using systems and concepts of technology that might ease the operations on the said campus. That being said, even being an ordinary college student has its processes per se. Before learning something new, instructors distribute hand-outs that students study and pay for. This is exactly what is happening even when the examinations come. Students must be ready to pay an amount of money to just get a piece of paper and answer some questions. Might be a little less important, but it tolls overtime. Other than that, above all, having a good coordinated system between students and instructors might solve such issues.

Regarding this, a Management System of Tasks will be a good supplement for the current situation of the students and instructors of CvSU - Bacoor City Campus. Nonetheless, having such tool will ease the processes of distributing tasks and avoid lapses in dissemination of different tasks on each student.

III. SYSTEM CONCEPT AND REQUIREMENTS

The System has only two levels of access – the student and the instructor. The creation of account for the system is for both the students and the instructors. In the instructors' side, they are the ones who will manage the creation of the courses. Each student is able to join in a course that is created and handled by an instructor. The instructor will be notified about the students who want to join in his or her class in a specific handled course. The task creation system enables the instructor to create a simple multiple-itemed task. These tasks can be scheduled or disseminated immediately depending on the choices of the instructors. They will be able to view the scores of each student enrolled in his or her handled course in a particular task. In the student's side, a notification will be sent to notify the students of the incoming or to do tasks. This includes the tasks' deadline and availability. On the other hand, the instructor will receive a notification about each student that has finished a task in their handled courses. The students are able to view the results of his or her finished tasks.

In our Entity Relationship Diagram using Reingruber's notation, (see Figure 9) we made twelve entities which are TBL_EDUCATOR, TBL_STUDENT, TBL_YEARL_LEVEL, TBL_TASK, TBL_SECTION, TBL_PROGRAM, TBL_NOTIFICATION, TBL_NOTIFICATION_ENTRY TBL_DEPARTMENT,

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TBL_COURSE, TBL_CATEGORY, TBL_CATEGORIZED_TASK, TBL_CLASS, TBL_CLASS_STUDENT. All of these have relationships with each other. In entity TBL_STUDENT which signifies the students who enroll in CvSU Campus. The student have the attributes Student Number which his or her unique identity inside the school, first name, middle name, last name, gender, address with block and lot number, street, barangay, city and province, contact number, email, section and the password for the creation of account of the user for the system. The student must enroll in just one program — student's chosen field of study like Bachelor Science in Information Technology, Bachelor Science in Computer Science and etc. and each program can be enrolled by one or more students. Each program can have one or more sections and each section contains students who enroll in a specific program. A student who belongs in a section has a specific year level whether he or she is a 1st year, second year and so on.

In the entity TBL EDUCATOR is all about the instructors of CvSU Bacoor Campus. Same as the process with the students, the creation of the account for the system will get the personal information of the instructor and only his or her username will serve as a unique identification for the system. Each instructor must belong in just one department like the Department of Computer Studies, Department of Education and so on, and each department can have one or many instructors. The instructor can create courses with a unique and specific course code in the system and all the instructors can see the courses that have been created by any instructor. But once it is created, any instructor cannot create a course with same course code anymore. Only the creator of the course can change all of the details except the course code which is a unique identifier for the system. The instructor can choose the course that he or she wants to handle based on what his or her department head has given. Once an instructor has handled a course, he or she can now make a multiple choice task and categorize it according to his or her liking. In addition, the instructor can handle a class that refers to a prior section. The students can immediately see all the courses that have been created by an instructor and they are able to join in a course's particular class. Once an instructor created a task for a handled course, all of students who have joined in his or her classes in that particular course will receive a notification about the

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specific details of the task including the deadline and completion days of the particular task.

Figures 1 - 7 show the database normalization of the system. Figure 1 represents the table of the educators or instructors. The fields or attributes of the TBL_EDUCATOR are the personal information of the instructor and each instructor has its unique identification which is his or her username. Figure 1 has many fields and shows improper creation of the table for the educator. The columns Block Number, Lot Number, Street, Subdivision, Barangay, City and Province in Figure 1 can be combined into one column. Figure 2 is the revised table for TBL EDUCATOR with proper creation of columns. As stated in Figure 2, column Address is a multi-valued attribute because the attributes Block Number, Lot Number, Street, Subdivision, Barangay, City and Province are all in this column just to avoid too much creation of fields. Table TBL DEPARTMENT which is about the name of departments that are present in CvSU Bacoor Campus (see Figure 2.1) is connected to the TBL_EDUCATOR because each of the educator belongs to a specific department. With the creation of the table TBL_DEPARTMENT, the attributes have been organized such as the attribute Department ID which refers to the more thorough details about a department.

TBL_STUDENT has the same concept of the table TBL_EDUCATOR (see Figure 3) as the column Student Number is the student's unique key for his or her account in the system. Additionally, a new column has been created for the combined details of the address of a student but it is a multi-valued attribute and has been named as Address. In table TBL_PROGRAM (see Figure 4.1), a new table for column Program ID in the table TBL_STUDENT (see Figure 4) has been created for the other details of the program that a student is enrolled to. But in Figure 5, in case of the attribute Program ID, it is referenced in the table TBL_SECTION, and this table is referenced in the table TBL_STUDENT and named as Section ID in its columns (see Figure 5). Table TBL_SECTION is for the details of the student's program, section and year level. Table TBL_SECTION has columns Section ID which a primary key, Program ID which is a foreign key for the table TBL_PROGRAM which is about the other description of the student's program, Year Level which is a foreign key for the table TBL_YEAR_LEVE which

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pertains to the descriptions of a student's year level and section number which is about block section number.

Table TBL_TASK (see Figure 6) is about the created tasks of the instructors. It has fields named Task ID which is the primary key, Class ID which is a foreign key for the table TBL_CLASS (see Figure 6.1). The Content, Status, Date of Dissemination and Time Limit are all about the details of the particular task. Table TBL_CLASS is for the classes that will be made in a particular handled course (see Figure 6.1). It has columns Class ID which is the primary key or unique key, Handled Course ID which is the foreign key for table TBL_HANDLED_COURSE (see Figure 6.2) and Section ID which is a foreign key for table TBL SECTION (see Figure 5.1). Table TBL_HANDLED_COURSE is about contains the courses that are handled by a specific instructor (see Figure 6.2). It has columns Handled Course ID which is the primary key, Course Code which a foreign key for TBL COURSE and Handler Username which refers to the username of the instructor in the table TBL_EDUCATOR. Table TBL_COURSE is all about the created courses of an instructor. The examples of the details are the columns Course Code which is a unique key for creating a course, Course Suffix, Course Title, Course Creator – name of the instructor who created the course and so on.

IV. SYSTEM DESIGN SPECIFICATION AND CODING

The system is planned out of the goal of creating a system that will ease the dissemination of tasks from the instructors to the students. It is planned to run across different platforms, thus yielding to the choice of using web development tools in order to develop the desired system.

Technically, the system is meant to be up and online in the cloud, but since doing so will result in using a custom or free domain name, the system was later on developed using a local server. An AMP stack (Apache, MySQL and PHP) was used to develop the system through a local server. Specifically speaking, **WAMP 3.2.0 – 64 bit** is used as the official AMP stack application for the system. In this stack, includes the following: **Apache 2.4.41**, **PHP 7.4.0** and **MySQL 8.0.18**. Apache is used as the main server for the local emulation of the website, while PHP is used as the main server-side scripting language for the system, and lastly, MySQL is the official database of the system. Some DBMS tools are also used such as **PhpMyAdmin 4.9.2** for the management of MySQL database.



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To make the process of development less tedious and laborious, the authors of the system uses a front-end framework for the design and interactive experience. **Fomantic UI 2.8.0** is the framework that gives the system some leeway when it comes to the design and interactivity. Additionally, some manual adjustments must be made to some of the prebuilt designs of the framework. These design adjustments are created through the use of **SASS 1.23.0** which is an implementation and extension of the CSS framework.

The frameworks that are already used in the system maybe seems good on the default basis, but since the authors want to decide some interactivity in the system, some scripting languages are used. **JQuery 3.4.1**, a library for the Javascript client-side scripting language, is used mainly for the custom behaviors and interactions around the system. Lastly, the browser used for the development is **Mozilla Firefox 71.0 – 64 bit**.

Going through, the system has main pages that will be visited by the end-user frequently when using the system. First is the sign in and sign up pages for both the instructors and educators.

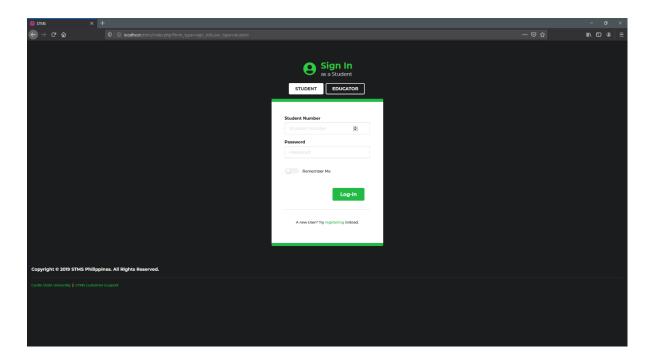


Figure 12. Sign In Form of Returning Users



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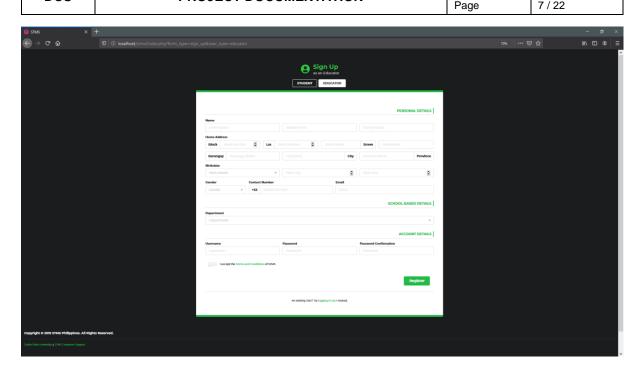


Figure 13. Sign Up Form of New Users

Having successful inputs and correct credentials will redirect users to their proper home pages depending on their type.

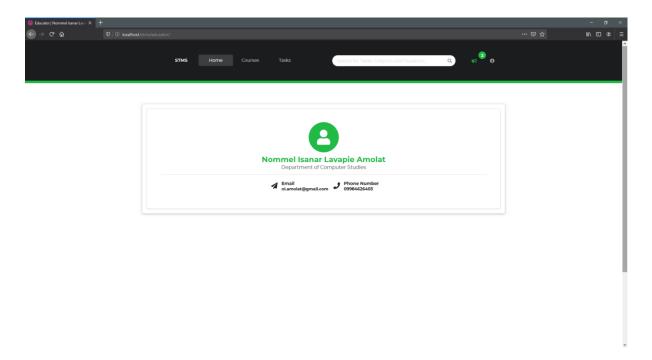


Figure 14. Home Page of Logged In Users



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In the Educator's side, the page Course will allow the Educators to create a course and add classes to it. A class refers to a section that is handled by an educator in his or her specific handled course. It is also worth mentioning, that once the course has been created, no Educator is allowed to tamper the information with regards to that course, except if the Educator who is modifying it is also the curator of the course.

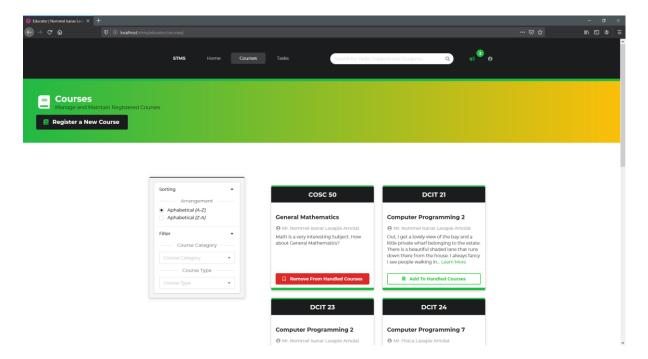


Figure 15. Educator's side of General Course View

In the General Course View, the courses are displayed as cards and can be filtered and sorted using the panel on the left side right before the courses. The black labels on each card are link to their respective specific course view where more options are available with regards to that specific course.



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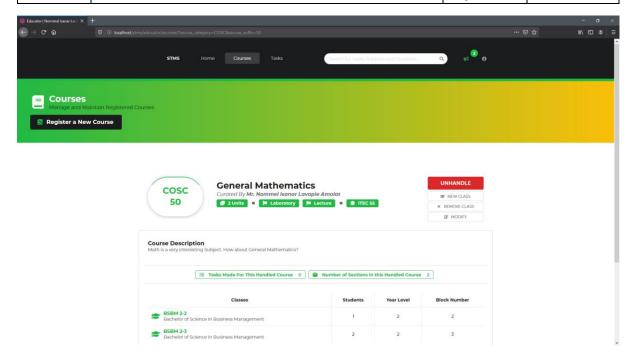


Figure 16. Educator's side of Specific Course View

Once a course is handled by an instructor, it will be added to his or her pool of options to distribute in, in the task creation module of the system.

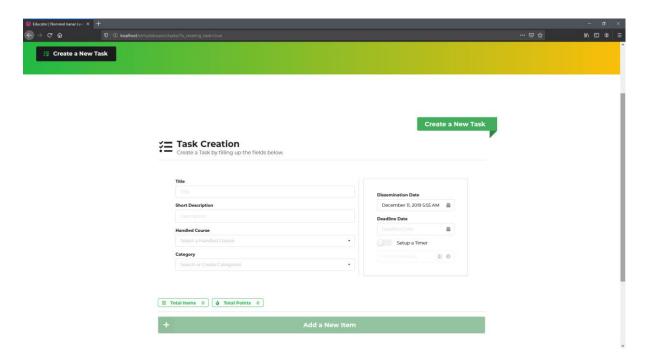


Figure 17. Task Creation Module of the System



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The task creation module enables the educators to create a single task having multiple-itemed questions. He or she can create as many as possible items for his or her questionnaire and he or she can customize the points for each item and mark the right choice for each item. Once submitted, it will be added to the pool of tasks that the educator has made. He can then delete it according to his need.

Going on to the Student's side, some functions are quite similar with the educator, except only that the student cannot create courses or modify them, he or she can only view it and the classes available to it.

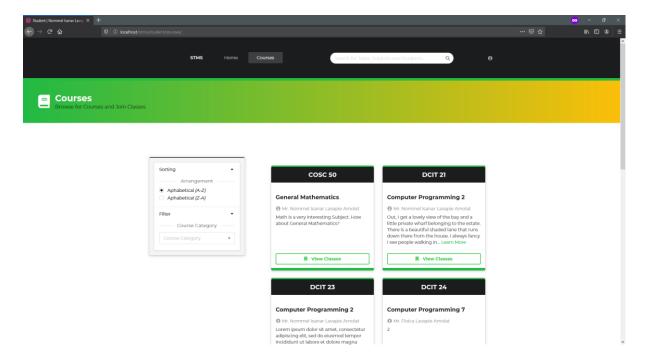


Figure 18. Student's side of Specific Course View

The same as the educator's side of navigating through the courses. The student can specifically isolate the view only to one course and view the classes in it and join a specific class made in that specific course.



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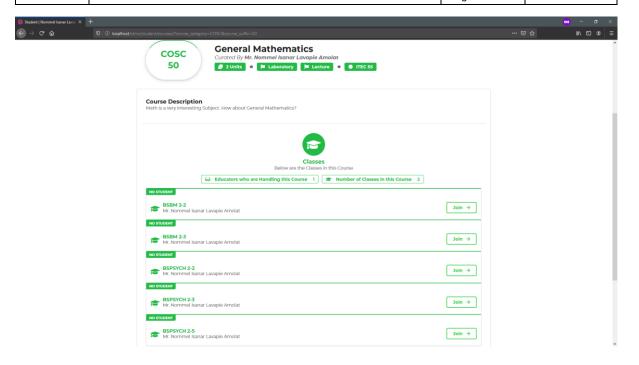


Figure 19. Student's side of Specific Course View

Once the student settled a permission to join a class, the educator will be notified immediately with regards to the student who asked to join in one of his or her classes.

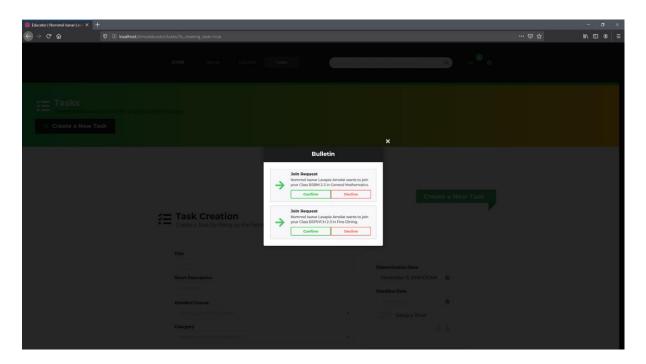


Figure 20. Educator receiving Notification right after a Student asked for Permission

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V. SUPPORTING DOCUMENTS

TBL_EDUCATOR			
COLUMNS			
Username			
Given Name			
Middle Name			
Family Name			
Block Number			
Lot Number			
Subdivision			
Barangay			
City			
Province			
Birthdate			
Gender			
Contact Number			
Email			
Department			
Password			

Figure 1. Unnormalized Table of Educators

TBL_EDUCATOR		
COLUMNS		
Username		
Given Name		
Middle Name		
Family Name		
Address		
Birthdate		
Gender		

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Contact Number		
Email		
Department		
Password		

Figure 2. 2NF of Figure 1

TBL_DEPARTMENT			
COLUMNS			
Department			
Department Title			

Figure 2.1. 2NF of Figure 2

TBL_STUDENT				
COLUMNS				
Student Number				
Given Name				
Middle Name				
Family Name				
Block Number				
Lot Number				
Subdivision				
Barangay				
City				
Province				
Birthdate				
Gender				
Contact Number				
Email				
Program ID				
Year Level				
Block Section				

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Password

Figure 3. Unnormalized Table of Students

TBL_STUDENT		
COLUMNS		
Student Number		
Given Name		
Middle Name		
Family Name		
Address		
Birthdate		
Gender		
Contact Number		
Email		
Program ID		
Year Level		
Block Section		
Password		

Figure 4. 2NF of Figure 3

TBL_PROGRAM			
COLUMNS Program ID			

Figure 4.1. 2NF of Figure 4

TBL_STUDENT	TBL_SECTION	TBL_PROGRAM	TBL_YEAR_LEVEL
COLUMNS	COLUMNS	COLUMNS	COLUMNS
Student Number	Section ID	Program ID	Year Level ID



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Given Name	Program ID	Program Title	Student Description
Middle Name	Year Level ID		Year Level Description
Family Name	Section Number		Description
Address			
Birthdate			
Gender			
Contact Number			
Email			
Section ID			
Password			

Figure 5. 3NF of Table of Students

TBL_TASK
COLUMNS
Task ID
Class ID
Content
Status
Date of Dissemination
Time Limit

Figure 6. Unnormalized Table of Tasks

TBL_CLASS
COLUMNS
Class ID
Handled Course ID
Section ID

Figure 6.1. 2NF of Figure 6



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TBL_CLASS	TBL_HANDLED_COURSE	
COLUMNS	COLUMNS	
Class ID	Handled Course ID	
Handled Course ID	Course Code	
Section ID	Handler Username	

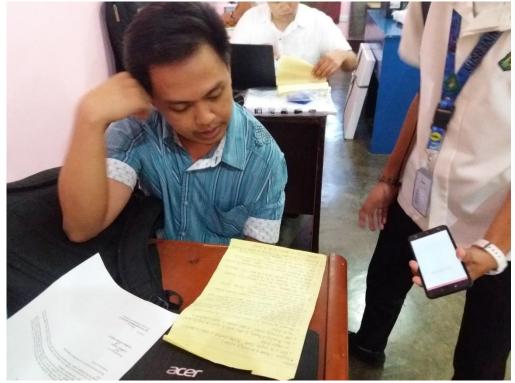
Figure 6.2. 3NF of Figure 6



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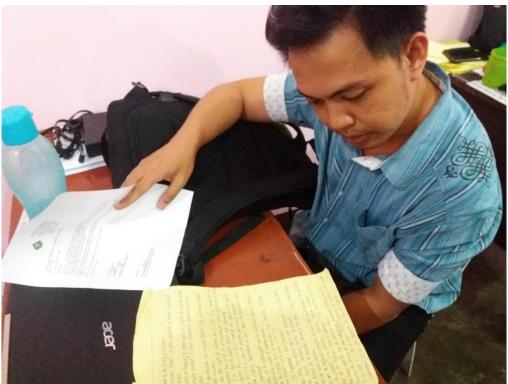


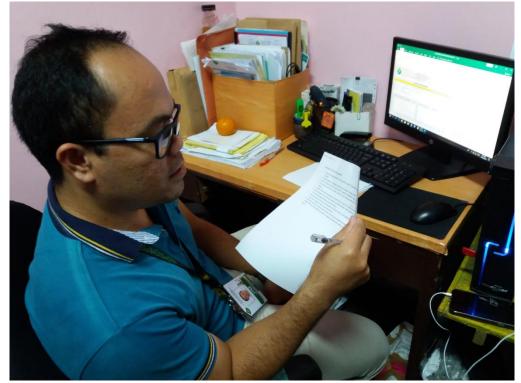
Figure 7. The Interview with Mr. Roneson Angelo Abug with regards to the Categories of the Tasks that they give to the Students in CvSU Bacoor Campus



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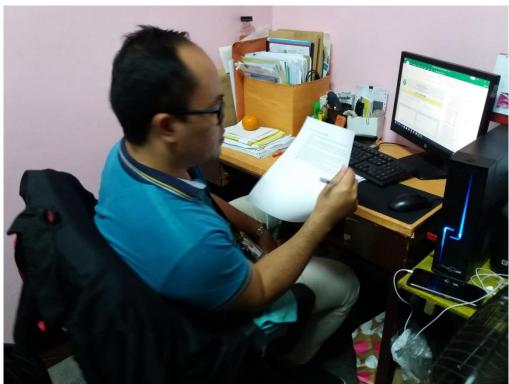


Figure 8. The Interview with Mr. Jim Dacanay with regards to distribution of Courses to the instructors of CvSU - Bacoor City Campus



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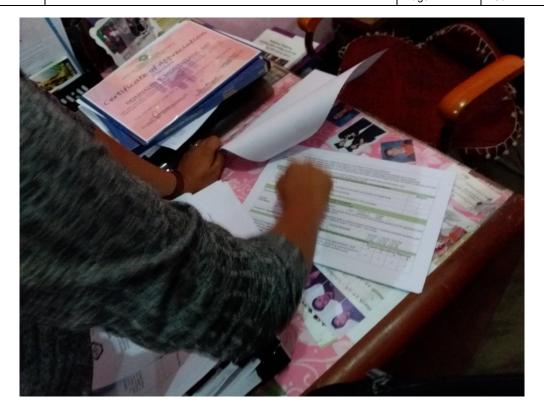


Figure 9. The Interview with Ms. Donnalyn B. Montallana with regards to the proper naming of terminologies involves in the System

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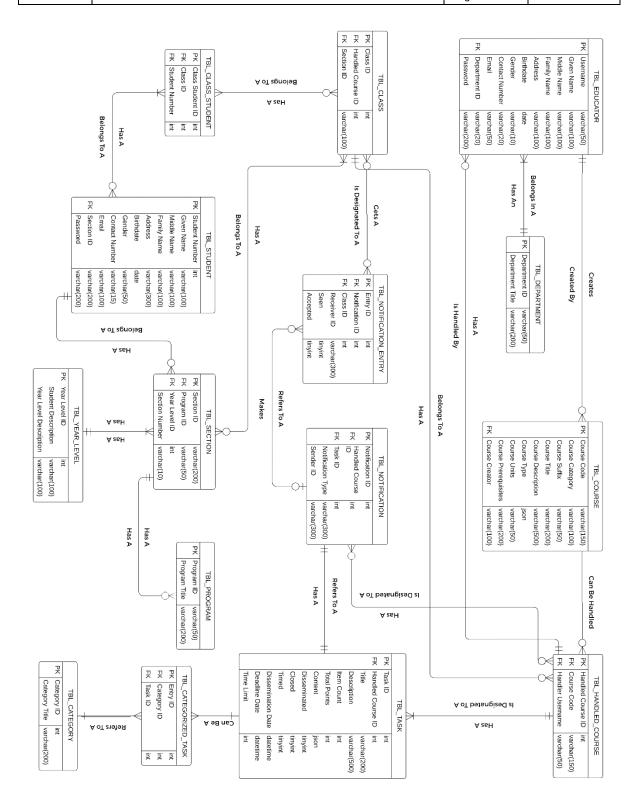


Figure 10. The Entity Relationship Diagram of the System using Reingruber's approach



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CAVITE STATE UNIVERSITY

Bacoor City Campus



Soldiers Hills IV, Molino VI, City of Bacoor, Cavite (046) 476 – 5029 www.cvsu.edu.ph

Cavite State University – Bacoor City Campus Bacoor City

Sir / Ma'am / Mr. / Ms.:

Greetings!

We the 2nd Year Information Technology students are currently on the process of creating a project entitled, "Subject's Task Management System" as a subject requirement in DCIT 24: Information Management. This system aims to bridge the gap between the hectic and laborious dissemination of tasks from the instructors with regards to their handled subjects to the students enrolled in their specific subjects.

With this, may we request you to allow us to take your leisure to conduct some data gathering in relevant to the proposed system. Rest assured that this will only take up a few minutes of your time.

We are looking forward for your favorable response.

Thank you so much.

Respectfully yours,

LORENZO VERAN

NOMMEL ISANAR AMOLAT

Noted by:

MS. KHWEEN PRINCES MONCAYO Information Management Instructor

Figure 11. The Approval Letter approved by the Instructor



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KHWEEN PRINCES H. MONCAYO