

CHAPTER III

DESIGN AND METHODOLOGY

This chapter will be able to discuss the methodologies that are being used on the process of system development. The information included in this Chapter are included by the researchers in a simple manner in order for the user as well as the reader to easily understand how the system works.

Project Concept

The system entitled "Web-Based Lemery Colleges Student Affairs and Services with Android Support" was developed in order to help the students and teachers of Lemery Colleges when it comes to the process of Student Affairs and Services. The system will be in a form of website whereas students and teachers can access it everywhere.

The students will simply access the website, log-in and choose the services they need, then the students will fill-up a form regarding the service. The teachers or admin can manage student affairs and services easily, they can access the students record accordingly and more organized. They can also send SMS/announcements to students regarding the student affairs and services. With this, teachers are able to guide and help the students with ease.

Requirement Analysis

The developed system will be a website wherein the students can access student affairs and services of the school much easier and to help the teachers in managing student's record about the services. The following are the functional and non-functional requirements of the website.

Functional Requirements

This defines the specific functions required for the website. The system will accomplish the following.

1. The website will allow the student to log-in once they successfully provide their information.
2. The website will provide the different services of the school.
3. The website will have the admin access the student services records and can manage student's information as well.
4. The system has the capability wherein the admin can send SMS to the students when they have an announcement.
6. The website has the capability where the students can send a report or complain in the discipline office.

Non-Functional Requirements

This will define the different ways in order for the researchers to measure the impact of the website to the users.

1. Efficiency

- a) The system makes the process of services much faster and easier for both the teachers and students.
- b) The system helps the teachers in managing student's record with ease.
- c) Once logged in, the students can automatically choose the student services they need.
- d) The admin can access and manage the system efficiently.
- e) The system can save the students information easily.

2. Accuracy

- a) The system provides accurate information about the student affairs and services, so students can easily distinguished what student services they need.
- b) The system provides the exact forms for the different offices of student services that students can fill-up.
- c) The system can be accessed by the admin to send accurate announcements to students.
- d) The system provides students record to be manage by the admin.
- e) The student services are based on the services present in Lemery Colleges

3. User-Friendliness

- a) The system is easy to use.
- b) The interface and it's functions are easy to understand.
- c) The system provides information about the student affairs and services.
- d) The website can be access by the students and teachers anytime.
- e) The admin can manage students record accordingly.

Design of Software, Systems, Product and/or Processes

This section describes in detail how the developers designed the system in accordance with the standards needed or required.

Operational Framework

The below figure displays the operational framework of the developed system. The figure includes the requirements needed to develop the system as well as the design and language used for the project to work.

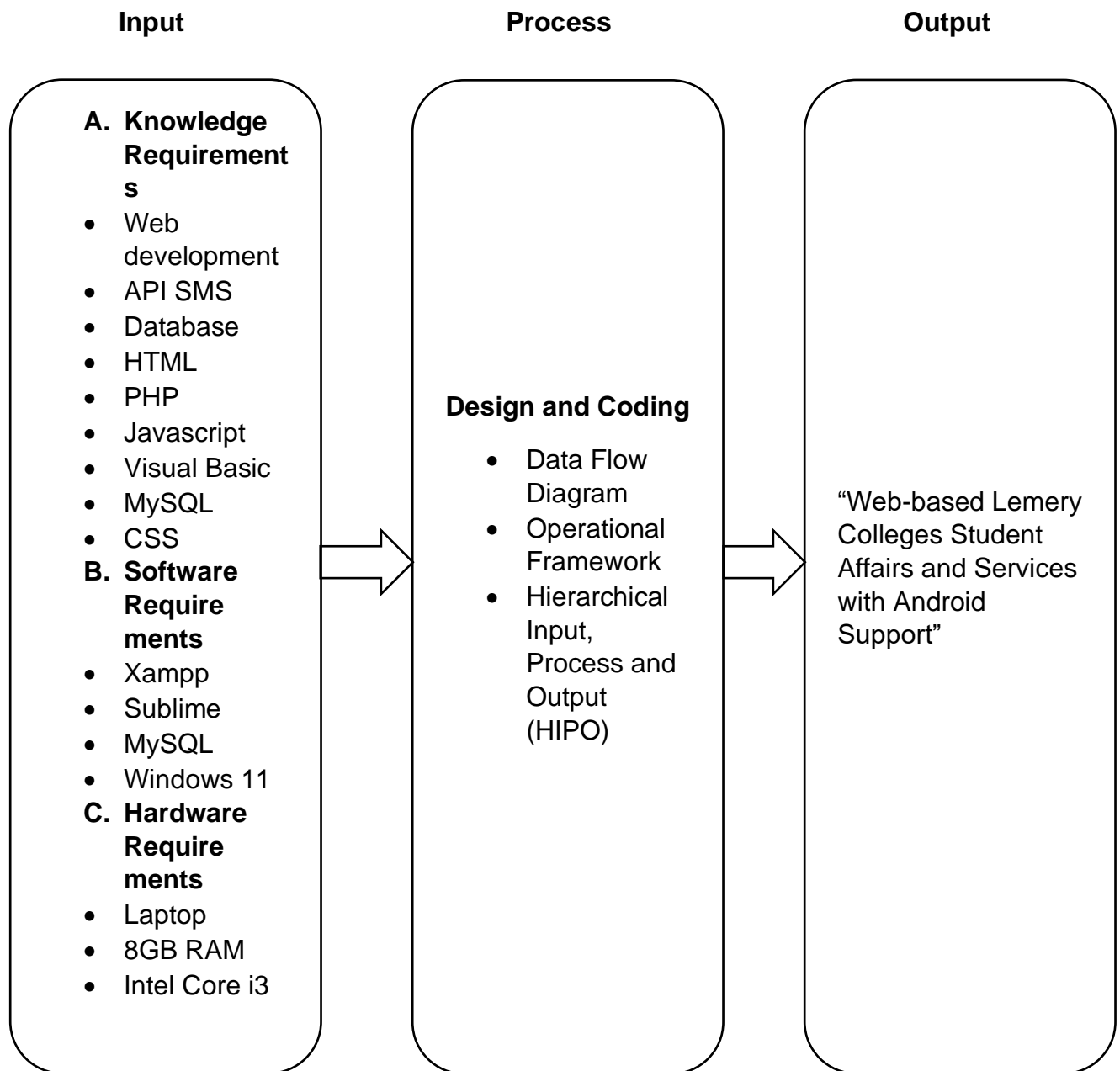
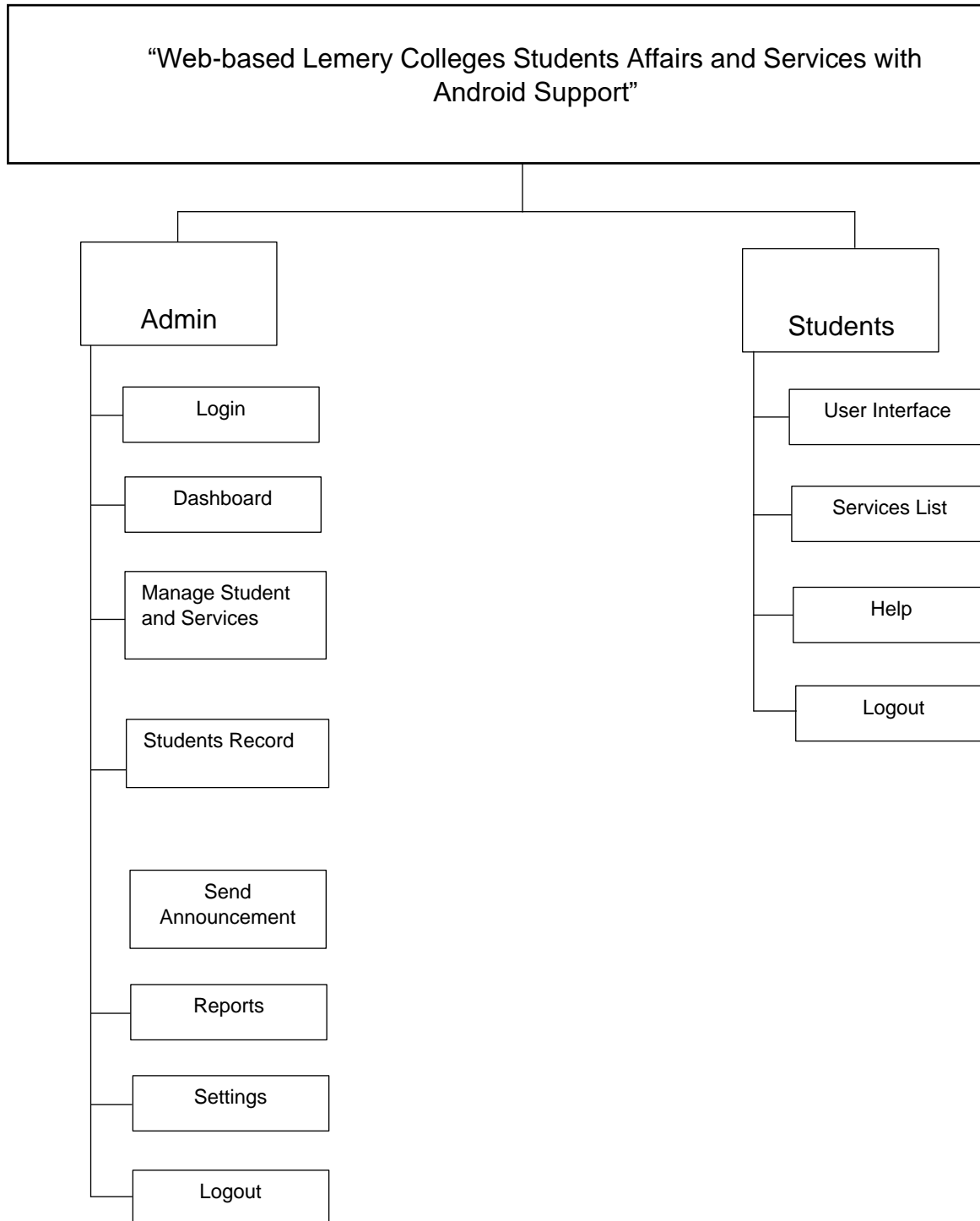


Figure 1. Operational Framework

HIPO Chart

“Web-based Lemery Colleges Students Affairs and Services with Android Support”



Development Model

The developed system was designed to provide “Web-Based Lemery Colleges Student Affairs and Services with Android Support” to the students and teachers of Lemery Colleges.

The researchers used a theoretical model for the interpretation of the process of the system development. System Development Life Cycle (SDLC) is used to describe the step by step methods involved in an information system development project. The SDLC Methodologies are essential because it is used to structure and plan the requirements of the system. Once a specific phase in the development is completed, the system development proceeds to the next phase.

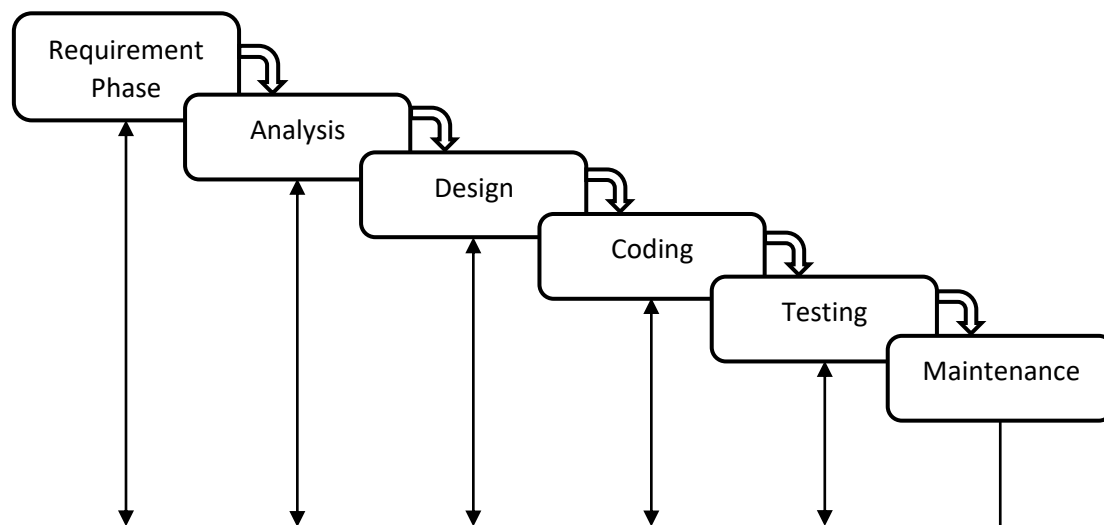


Figure 2. The Waterfall Model

The researchers used the Waterfall Model for everyone to easily understand and interpret the step by step process of the development. The phases that are of the model are, requirements, analysis, design, coding, testing and maintenance phase. These are essential for the completion of development of the proposed system.

Requirement Phase

The requirements phase is a part of the development of website applications. The system's requirements are established during the requirements phase. The reason requirements are so crucial is that they provide a variety of concepts that can be applied to the system development.

The researchers admitted the important requirements of the study for benefits of the proposed system.

Analysis

In the Analysis Phase, the researchers analyzed the data collected in order to create a comprehensive web-based system. During this phase, the researchers identified the features that would be included in the system. These requirements were examined for validity, and the possibility of incorporating them into the system under development was also investigated.

Design

Software design involves in problem and planning a software solution. This includes both low level component and algorithms design.

The researcher designed the interface and the flow of the website. In the design phase, the researchers created the design of the website. They made the interface and the data flow diagram for the website to be developed. This Design phase took long weeks to be created since the needed details of the system will be discussed by the researchers.

Coding

The coding phase is typically handled by the whole team. The development team can have certified programmers having done certifications of the given target technology. The researchers create the website during the coding phase using the programming language such as HTML, PHP, and CSS. This phase took a week or month to be created.

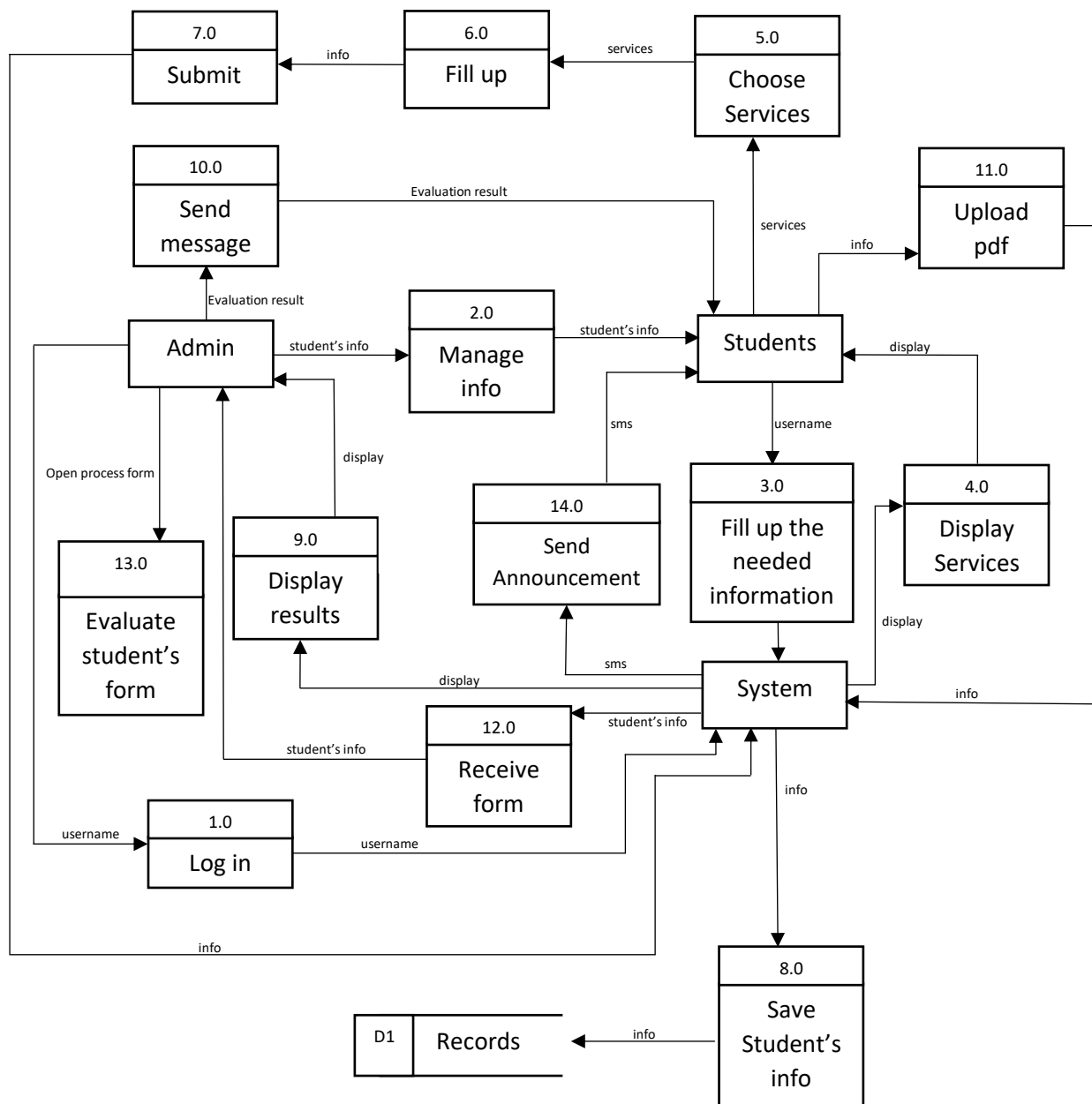
Coding is the process of transforming data into a format that computer programs can understand. In order to prepare data for computer processing with statistical software, classification of the information is a crucial step.

Testing

After the coding phase, certain tests were implemented in order to guarantee that the system will function properly. The testing phase is where the software is checked for any errors or defects. It is also important to undergo testing phase to determine and verify that the entire system works accordingly. This process continues until the software is bug-free, stable, and working according to the needs of the system.

Maintenance

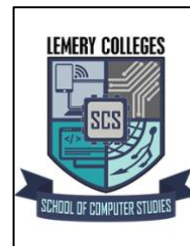
The final phase of the model is the maintenance phase. It is also the last stage of the cycle. After software passes the design stage and is implemented, the maintenance phase of the software life cycle begins. This phase is important to ensure that the system is fully functional and working properly. The system is improved due to changing environment.



Data Flow Diagram



Web-based Lemery Colleges Student Affairs and Services with android support



Name (Optional): _____

Directions: Please read each statement carefully and determine your agreement in each item every criterion provided below. Put a check mark (✓) on the box of your chosen answer.

I. Problems encountered by the students, teachers and registrar when it comes to the dissemination of information about student affairs, the management and process regarding student affairs and services.

Items	Yes	No
1. There is no website about student's affairs and services available in Lemery Colleges.		
2. There are lots of students that have no sufficient knowledge about student's affairs and services.		
3. There are students who are hesitant to approach the school offices.		
4. Organizing and managing loads of student records are quite stressful to teachers.		
5. The students often forgot the appointment regarding the student service and announcements from school.		

II. Benefits of the website in Lemery Colleges Students, Registrar, and the Teachers.

Items	Yes	No
1. T Students are equipped with knowledge regarding the school student affairs and services.		
2. All the students who register on the website will be updated to the announcement of the school.		
3. The students are guided and can easily choose the services that they want.		
4. The registrar and the teachers can manage and organize student's information with ease.		
5. The students are easily informed through the announcements.		

III. Efficiency - it refers to the extent to which time is well used for the intended task; it is doing a certain task in a shorter period of time.

Items	Yes	No
1. The system makes the process of services much faster and easier for both the teachers and students.		
2. The system helps the teachers in managing student's records with ease.		
3. Once logged in, the students can automatically choose the student services they need.		
4. The admin can access and manage the system efficiently.		
5. The system can save the students information easily.		

IV. Accuracy - Accuracy – the ability of the website to provide accurate results

Items	Yes	No
1.The system provides accurate announcements to the students.		
2.Every information is saved to the database.		
3.The information of the students can be updated by the admin to make sure that everything is correct.		
4.The system provides the exact forms for the different offices of student services that students can fill-up.		
5.The student services are based on the services available in Lemery Colleges		

V. User-friendliness – the ability of the system to user-friendly interface to the user

Items	Yes	No
1.The interface of the website is easy to understand		
2.The students can easily manage their profiles		
3.The design and controls of the website is simple for the admin to easily update or manage the students.		
4.The website can be accessed by students and teachers anytime.		
5.The website provides information about the student affairs and services in Lemery Colleges.		

Respondents of the Study

The respondent of the study is the College Students in Lemery Colleges. The response from the respondents is for gathering information for the development of the study. There are Four Hundred Seven (407) Criminal Justice, one thousand six hundred ninety eight (1698) Business and Management, five hundred seven (507) Computer Studies, five hundred forty (540) Teacher Education and one hundred fifty-eight (158) Arts and Sciences for a total of one-hundred one (101)) respondents.

This shows the sample size of the respondents based on the total population.

RESPONDENTS	Number of Respondents	Sample Size	Percentage
Criminal Justice	407	58	19%
Business and Management	1698	68	22%
Computer Studies	507	63	20%
Teacher Education	540	68	22%
Arts and Sciences	158	53	17%
Total	3310	310	

Statistical Treatment of Data

Percentage Formula

$$P = (N/n) * 100;$$

Where:

P = percentage

N = total number of population size

n = total number of respondents

Percentage was used to determine the quantitative relation in the whole response. To compute for the percentage (P) the frequency (sum of responses) is divided by the total number of response.

$$N = N / (1 + Ne^2)$$

$$N = 158 / (1 + 158 (0.0144))$$

$$N = 158 / (1 + 2)$$

$$N = 158 / 3$$