LYCEUM OF ALABANG
BASIC EDUCATION
SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS

THE DEVELOPMENT AND EVALUATION OF VAS PROTOTYPE UTILIZING ARDUINO TECHNOLOGY

A Thesis Presented to the Faculty of Basic Education Department
Lyceum of Alabang
Km. 30 National Road, Tunasan, Muntinlupa City

In Partial Fulfillment of the Requirements for the
Research Project
by

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APPROVAL SHEET

This thesis entitled **""The Development and Evaluation of Vas Prototype Utilizing Arduino Technology",** prepared and submitted by **De Juan, Beyonce Nicole O., Hirondo, Maruh Claire M., Lat, Joshua B., Musa, Walid O., Navergas, Zyren B., Punzalan, Mark Joshua B., Rago, Trixzy L., Santos, Emmanuel P., Vinluan, Deserre C., and Yumol, Angelo Gabriel P.,** in partial fulfillment of the requirements for the **Basuc Education Program** has been examined and is recommended for Final Defense.

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The Researchers

DEDICATION

The researchers dedicate this research project to our dear parents, who have been a source of inspiration and courage when we felt like giving up, and who continue to give moral, spiritual, emotional, and financial support. to our siblings and sisters, relatives, mentors, friends, and classmates who have shared words of advise and support to help us accomplish this study. And, of course, we devote our research to the almighty god, thanking him for the direction, strength, mental power, protection, and abilities, as well as for providing us with a healthy existence. We provide you with all of these services.

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THESIS ABSTRACT

Title: **THE DEVELOPMENT AND EVALUATION OF VAS PROTOTYPE UTILIZING ARDUINO TECHNOLOGY**

Author: : **De Juan, Beyonce Nicole O., Hirondo, Maruh Claire M., Lat, Joshua B., Musa, Walid O., Navergas, Zyren B., Punzalan, Mark Joshua B., Rago, Trixzy L., Santos, Emmanuel P., Vinluan, Deserre C., and Yumol, Angelo Gabriel P.**

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Research Summary

The researchers conducted a study about how to be prepared for inevitable earthquakes by utilizing Arduino technology. Most people, particularly those inside their homes, do nothing during an earthquake or are unaware that one is occurring. That is why our group came up with the idea of making or building something that can warn people and make them prepare for the earthquake's effects. It can be used to detect vibrations in the Earth. This high output is used to sound alarm and to light LED. When the vibration sensor detects vibration, the LED begins to

blink. The purpose of this project is to develop a device that can be placed directly on a vibrating surface, learn its vibration patterns, and detect potential anomalies in its behavior. A Vibration of Sound Sensors measure (sense) the surroundings and convert the data into a digital or analog data signal that a computer or observer can understand. They can also measure sound levels. Lastly, with the help of LCD display, we can notice a movement in Earth's crust depending on how deep the technology is placed. LCD display are a big help in order to people make their actions to be safe in their houses in case of earthquake occuring.

CHAPTER 1

THE PROBLEM AND ITS BACKGROUND

Introduction

An earthquake occurs when two pieces of the ground suddenly move apart from each other. The surface where they break is called a "fault." Faults are breaks in the rock mass where appreciable movement of rocks on opposite sides of the break has occurred. The hypocenter is the point beneath the earth's surface where the earthquake occurs, while the epicenter is the position directly above it on the earth's surface. Earthquakes can occur naturally or as a result of human activity. Many disasters are caused by urbanization and deforestation of the countryside. The trees can contribute in soil binding, which helps to prevent landslides and earthquakes. Earthquakes are mostly generated by the tearing of geological faults, although they can also be triggered by landslides, mine explosions, volcanic eruptions, and nuclear testing. Earthquakes are caused by tectonic plates breaking as a result of these catastrophes. They affect the earth's surface, resulting in the loss of lives and properties.

There are aftershocks that occur after an earthquake. These are lesser earthquakes that occur near the major earthquake that follows. Scientists won't know if an earthquake is a foreshock until the larger one occurs. The mainshock was the strongest and most severe earthquake yet. It always follows after the aftershock. It can last for weeks, months, or even years after the aftershocks, depending on the magnitude of the earthquake, which represents the amount of energy released from the Earth's crust.

Seismographs are equipment that monitors earthquakes. A heavy weight hangs free from the seismograph's base, which is securely planted in the ground. When an earthquake shakes the ground, the seismograph's base shakes as well, but the hanging weight does not. The Richter scales is also an equipment used to rate the magnitude of an earthquake, its amount of energy released during an earthquake.

The researchers decided to conduct this study at the house of one of the researchers with the help of the instruments that will be used (Arduino UNO, Breadboard, LCD sensor, and other variables), and they will observe the variables to see if they can help them prepare for the repercussions of an earthquake. The researchers will conduct this study to see if it is effective enough and immediately test it to see the best results. And we will do further observation on the subject and further studies to make fewer common mistakes.

The researchers will conduct this research study by describing or observing the Arduino UNO together with the sensors that will be used in order to produce sounds and detect the Earth’s vibrations. The researcher used the Arduino UNO together with a vibration sensor, sound sensor, and an accelerometer sensor as input sensors and LED light, buzzer, and LCD display as output sensors to know their compatibility and effectiveness with each other and to know if they will detect any vibrations on the earth’s surface.

This research was conducted for this study because they wanted to develop a device that could be placed directly on a vibrating surface to learn its vibration patterns and to deepen their knowledge of them. Not only the researchers, but also the other

researchers that wanted to know about the uses of this subject and create something that is easy and usable for us.

This study will be beneficial for earthquake warning preparation for students, parents, and building owners. Most individuals, especially those who are inside their houses, offices, and schools, do nothing or are completely unaware that an earthquake is actually occurring. Through this study, the researchers created a plan to construct something that can warn people and help them prepare for an earthquake that is occurring. It may be used to detect vibrations in the ground.

Background of the Study

National Earthquake Information Center (NEIC) records an average of 20,000 earthquakes every year (about 50 a day) around the world. On average, there are 16 major earthquakes (M 7.0-8.0+) worldwide per year. … So far in 2021 from January through May, there have been 8 major earthquake and 69 strong earthquakes.

Philippine Institute of Volcanology and Seismology (PHIVOLCS) initially reported a magnitude 6.5 earthquake striking at 8:03 am Philippine Standard Time (PST) in Cataingan, Masbate. The report was later revised to a magnitude 6.6 Earthquake. Earthquake was also felt in several parts of Luzon and Visayas. Earthquake's origin is on Masbate section of the Philippine Fault System. Earthquake's origin is on the Masbate part of the Philippine Fault System.

At 4:19 AM (local time) on August 02, 1968 an earthquake with an intensity of VIII in the Rossi-Forel Intensity Scale rocked the town of Casiguran, Aurora. This was considered the most severe and destructive earthquake experienced in the Philippines during the last 20 years. Two hundred seventy (270) persons were killed and 261 were injured as a result of the earthquake. A six-storey building in Binondo,

(Ruby Tower) Manila collapsed instantly during the quake while several major buildings near Binondo and Escolta area in Manila sustained varying levels of structural damages. The cost of property damage was several million dollars. Extensive landslides and large fissures were observed in the mountainous part of the epicentral area. Tsunami was also observed and recorded as far as observation in tide gauge station in Japan.

Conceptual Framework

INPUT:
Knowledge Requirements:

- C/C++ Programming
- Arduino Fundamentals
- Writing Simple Sketches
- Creating circuits on a board

Hardware Requirements:

- Arduino Board
- Computer/Laptop
- Atmel Atmega328

Materials:

- Buzzer
- LED
- Breadboard
- Jumper Wire

Equipments:

- Vibration Sensor
- Sound Sensor
- Arduino Board

PROCESS:

Project Development:

- Planning and Oranizing
- Requirements Analysis
- Designing
- Developing (Prototype)
- Sketching
- Coding
- Testing

OUTPUT:

VAS PROTOTYPE

FEEDBACK

Figure 1. Conceptual Framework

Objectives

General Objectives: To know the advantages of VAS prototype for alerting the residents from the earthquake

1. To identify the purpose of VAS prototype in terms of:

1.1 The Vibration Sensor is responsive in detecting movements from the ground

1.2 The sound sensor will detect the sound from the buzzer module.

1.3 Vibration sensor can also detect movements from the ground.

2. To know if the VAS prototype is a low-cost and effective technology.

2.1 The Arduino sensors is a cheap sensor but it can function as well as the expensive devices.

2.2 It is easy to set up.

3. To know if the VAS prototype can alert the resident's from the earthquake.

3.1 The buzzer will make sound if the sensors detect movements and vibration.

3.2 The LED will blink that can also help to alert the people from the earthquake.
3.3 The alert sound of buzzer is enough to inform people that there's an earthquake.

Scope and Delimitation

The study covers the places where earthquake is prone it was quite valuable to the people at the time of the earthquake. It focuses an earthquake indicator can detect vibration and provide people enough time to leave the dangerous area. It has the potential to rescue the network's life, also to inform the government officials that this alternative technology is low-cost and accurate. Hence, the device has a limitation in its detecting range. We realized that the prototype lacks a component in which measuring the earthquake in 5-10 meters long. It is ideal for small community or institutions use only. This limit the people in urban place because they have the capacities to buy a high price technology that they can provide to the city and most of the urban places is not prone in earthquakes.

Significance of the Study

As we can see, this research will help the user in terms of attentiveness and safety, and we can be protected from injury in the process of developing this prototype. This research can also help community that has high buildings and big structures close to fault lines. Simple disasters can be avoided since they will not worsen; we must constantly remember that prevention is always preferable to cure. We can go overboard, but it's better than doing nothing when the time comes. This prototype is simple to use, inexpensive, and simple to put together. However, the goal of this research is to increase the user's safety and attentiveness in the event of a natural disaster, such as an earthquake. This research can be also be the start of the new age of technologies for the future researchers. Because sound sensors detect sound in the environment, this sensor works best in tranquil areas so it can detect sound if there is a difference in its surroundings. This study can assist us in a variety of ways.

Definition of Terms

Prototype

– A experimental chip or device that designed to implement ideas and gain information such as earthquake prototype.

Arduino UNO

- It is an open-source electronics platform that uses simple hardware and software to make things work.

Breadboard

- It is used to quickly develop and test circuits before finalizing any circuit design.

Sensors

– is a device that responds to a physical stimulus (such as heat, light, sound, pressure, magnetism, or a particular motion) and transmits a resulting impulse (as for measurement or operating a control)

Sketch

- It is the unit of code that is uploaded to and run on an Arduino board.

Data

- Any information that has been collected, gathered, generated, and evaluate in research paper

CHAPTER 2

RELATED LITERATURES AND STUDY

This chapter will discuss the previous and already existing literature and studies related to the main study of the researchers to prove the accuracy of the research to be done

Local Literature

- **According to Morin, et al., (2016)**, Because of the spread of poor materials and the growth of informal urban settlements, many sections still have substandard construction. It makes you more vulnerable to earthquakes and flooding, as well as a rise in the risk of infections linked to WASH. To occur as a result of a lack of infrasructure, poor drainage, and sanitary conditions (**Morin, et al., 2016)**. Many low-lying coastal towns are regularly exposed to high levels of pollution. Many housing units are built with wood on pile foundations and are insured by flood insurance.All of these materials are insufficient to endure a typhoon (or even a hurricane).
- **According to Maminta., (2019)**, Disasters have devastating consequences, including loss of life, loss of access, and loss of property and services. The Philippines' vulnerability to natural disasters costs the government an estimated $1 billion every year. 15 billion pesos on average per year. Knowing where they reside and the dangers they face are prone to this, they can assist government and non-government organizations in developing programs. As well as projects Active participation and response are required to mitigate, prepare for, and respond to natural calamities. Stakeholders' Concerns should be amplified. Involvement of parents in the conduct of their children's activities quarterly earthquake and fire drills are held at the schools, as well as at the General PTA

Assembly. Information through the distribution of information on earthquakes, tropical cyclones, floods, and landslides leaflets or brochures.

- **According to Fernando Jr., Et al. (2020)**, this illustration depicts the progression of an earthquake. Arduino Mega and ADXL335 are used to create a detection unit system accelerometer. The alarm system will be activated. When a microcontroller-based earthquake occurs, make a sound. A ground motion of specified intensity levels is detected by the detector. The container also has a solar panel system built in to generate power. It uses its own generated electric current to power the facility entire system having a solar-powered earthquake detector. The use of a detector with an automatic alarm system will aid in the raising of the alarm. To raise awareness of earthquakes in order to reduce the number of people who are killed or injured as a result of them the amount of human injuries and accidents.

Foreign Literature

- **According to Crisnapati et al., (2018)**, In Indonesia, the degree of damage caused by earthquakes is measured through firsthand observation. The strength of an earthquake's vibrations can cause varying degrees of damage. To deliver sensor data to the end user, this system uses the Telegram API and the MQTT protocol. The system differs by an average of 3.17 percent from the Meteorology, Climatology, and Geophysics Agency's more complex system.
- **According to Mar Nor et al., (2021)**, the study of various types of earthquake detectors that are appropriate, to review the effectiveness of earthquake detectors

and the effects of installation on the environment, and finally to examine the output produced by the earthquake detectors through the created/existing detectors. This section consists of four phases: identification, screening, eligibility, and inclusion. All research' findings were discussed and examined based on the keywords employed, the types of detectors, the output produced by earthquake detectors, and the consequences on individuals, technology, and the environment.

- **According to Priyana et al., (2018)**, it is necessary to have a speedy and accurate early warning system that uses seismic wave data processing. With an Arduino minimal system, ADXL335 accelerometers are utilized as seismic sensors. If there are any mistakes during the transfer, the server will request a resend. This is required to avoid artificial seismic waves.

Synthesis of Literature

- The study's literature contains information on how earthquakes and natural disasters caused varied degrees of damage, such as loss of life, loss of access, and loss of property and services, and cost the government an estimated $1 billion per year. On average, 15 billion pesos are spent each year. In Indonesia, firsthand observation is used to estimate the level of damage caused by earthquakes. An Arduino minimal system, ADXL335 accelerometers are utilized as seismic sensors, illustrated by (**Fernando Jr., Et al., 2020**). The alarm system will be activated. When a microcontroller-based earthquake occurs, make a sound. A ground motion of specified intensity levels is detected by the detector.

Foreign Studies

- **According to Alfaris, et al. (2020)**, Earthquake is a natural event that can not be expected to happen. Earthquakes have a major impact on human existence, resulting in fatalities or material loss. To reduce the likelihood of this loss, an earthquake warning system was created. The method used is earthquake vibration data input, which is then analyzed by an Arduino system. Magnitudes are adjusted to earthquake strength.Sensors mounted on the Arduino will transmit a sound digital, with the expectation of humans being able to respond to earthquakes.The result of this research is the availability of a prototype alarm warning system, which will produce sound to the general public when an earthquake occurs.
- **According to Swami & Jarali (2017)**, the creation and experimental demonstration of a real-time, low-cost laser communication system based on an ATmega328 microprocessor for a water dam module are described in this work. The suggested system is made up of float and motion sensors that track data on water levels and earthquakes in a dam. For improved monitoring outcomes, automation is also available. The suggested system can monitor water levels and inform in earthquake-like disasters with better data transmission speeds, as evidenced by the experimental working of the system.
- **According to Saha, et al. (2016)**, Bangladesh is a country where earthquakes occur frequently. Because the country sits at the crossroads of three tectonic plates, earthquakes in this area are rather mild. As a result, a low-cost automated microcontroller-based system employing affordable locally produced electronic components has been created and built, which detects earthquakes and gas leaks using force sensitive resistors and gas sensors, respectively. During an

earthquake, the microprocessor controls a relay and a motor that switch off electricity and gas supply, respectively, helping to avoid potential calamities.

Local Studies

- **According to Beltran Jr., Et al (2021)**, The Arduino-based disaster management system is proposed in this work. Temperature, soil drift, accelerometer, tilt, and rain sensors are all included in the disaster management gadget. A hardware prototype has been created. It is controlled by the Arduino microcontroller and written in the C programming language. Experimental research back up the usefulness of the proposed strategy. When a sensor is triggered, it sends data to the designated receiver, which is usually a cell phone. This article included data that had been gathered. The proposed system's effectiveness and efficacy are demonstrated by the results. At the conclusion of this document, there is an expressed future direction.

- **According to Sejera, et al. (2020)**, This research focuses on the creation of a landslide early warning system that will deliver messages as mobile SMS alerts using a GSM module with a mobile application with three levels of warning: normal, warning, and danger. Landslides are one of the most prevalent natural disasters in the Philippines, and they are mainly caused by environmental variables like rain and earthquakes. Not only would an early warning system help to detect an impending disaster, but it will also aid to raise disaster awareness and preparedness. The sensors employed in this early warning system can detect environmental conditions that are known to cause landslides. The data collected by the sensors is then evaluated by an Arduino Nano microcontroller.

- **According to Valenzuela, et al. (2018)**, the goal of this research is to create an automated school desk that can detect seismic activity, provide earthquake shelter, and trigger the alarm system to alert the students. The desk was made to fit the size of the table in the kindergarten classroom. It contains an accelerometer as a sensor that is coupled to a Gizduino microcontroller for actuating the linear actuator and providing earthquake protection. Aside from that, the microcontroller sends a signal to the warning system, which alerts everyone on the premises to the magnitude of the earthquake. An earthquake simulator was used to test the prototype's functionality. The system was discovered to respond to seismic activity (intensity 4–8) with a response time of approximately 4.5 seconds.

Synthesis of Studies

The study of the study contains information on how frequently earthquakes occur in a country and focuses on the development of an earthquake alarm warning system that helps in the detection of unexpected and sudden disasters and produces sound to the general public when an earthquake occurs, raising disaster awareness and preparedness. Sensors attached on the Arduino will digitally transmit sound, with the expectation that people will be able to respond to earthquakes. The sensors used in this early warning system are capable of detecting environmental factors known to cause earthquakes.

CHAPTER 3
RESEARCH METHODOLOGY

This chapter discusses how the study was conducted. The type of research methodology that the researchers execute to their study and the statistical method used in conducting the study from identifying the respondents to analyzing the data.

Research Method and Design

The researchers used the descriptive-development research. The method that has been used will describe the functionality and progress of the prototype. This method perfectly suits to the project and to evaluate the device and its components. The used method will prove that the project was effective and also efficient. Lastly, this method will set out the performance and the usability of the Vas Prototype and execute its specific purpose in certain situations and emergencies.

Sampling Method

A stratified random sampling procedure was used for selecting the participants in this study. Stratified sampling is a method of sampling from a population that can be partitioned into subpopulations. The researchers selected students by random from the sections of Grade 12 STEM Engineering strand. The researchers provide a survey questionnaire, which is distributed to sections of the Grade 12 STEM strand, and the random students respond to the survey questionnaire, which serves as the sample data.

Participants of the Study

The Grade 12 STEM Engineering students in Lyceum of Alabang (LOA) are the participants in this study. The number of participants have obtained 156 students in every section based on Slovin's Formula. The information provided by the chosen students will be used to meet the research's needs.

Research Instrument

The questionnaire and survey is done by the researchers for evaluation of the Grade 12 STEM students in Lyceum of Alabang (LOA) for the performance and implementation of the Arduino Sensors for alerting for the upcoming earthquake. The questioner contains the respondents profile such as their name, sex, and section. The respondents are ask for the performance rating and functionality of the Vas Prototype. In addition the questionnaire also contains if they would agree for implementing the product in part of the Philippines.

Requirements Specifications

Marketing Requirements, Engineering Requirements, and Justification for such requirements are all included in the Requirements Specification.

Table 1. Requirements Specification of the Developmental of VAS Prototype.

MARKETING REQUIREMENT	ENGEENIRING REQUUIREMENT	JUSTIFICATION
1	The prototype contains jumper wire	This will connect all the sensors and output devices by connecting the jumper wire to the breadboard.
2	The prototype will be using LED light	The LED will provide as sign of emergency when earthquake occur.
3	The prototype has Buzzer	This output device will make sound as the Arduino sensors detected the movement from the ground.

3	The prototype has Buzzer	This output device will make sound as the Arduino sensors detected the movement from the ground.
4	The prototype contains Arduino sensors	The sound and vibration sensor will be the one that is going to detect the movement from the ground as if connected to the jumper wires.
5	The prototype will be using power bank	The prototype will using a power bank has 3.7 volts as the source of electricity it can be replace of any electricity device that can provide enough electricity as the VAS prototype needed.
6	The prototype would be using a USB connector	The USB has a type B connector it is connected to the power bank so that the electricity will be provided to the device.

6	The prototype would be using a USB connector	The USB has a type B connector it is connected to the power bank so that the electricity will be provided to the device.

Marketing requirements

1. The prototype contains jumper wire
2. The prototype will be using LED light
3. The prototype has Buzzer
4. The prototype contains Arduino sensors
5. The prototype will be using power bank
6. The prototype would be using a USB connector

Data Gathering

PLANNING

1. Determining what project is low-cost and sensors is suitable for alerting residents in earthquake.

DESIGNING

1. Researching how Arduino sensors works and functions.
2. Finding materials for the prototype.
3. Ascertain that the materials are both inexpensive and relevant to the study subject.

PURCHASING

- Arduino Uno
- Sound Sensor
- Vibration Sensor
- Accelerometer Sensor
- Buzzer Module
- Bread Board
- LED
- Jumper Wires

DESIGNING

1. Create a sketch to aid in the design and placement of materials

TESTING:

1. Testing all the materials if it all works.

IMPLEMENTATION:

1. **Connecting the wires**

Procedural Chart

Figure 2 Procedural Chart

Statement of the Problem

This research aims to develop an evaluation of the prototype in connection of Arduino Sensor for alerting the residents in rural.

Its main goal is to respond to the following questions:

1. **What is the purpose of the prototype device in terms of?**

    1.1 The Vibration Sensor detects movement from the ground and responds accordingly.

    1.2 The buzzer module's sound will be detected by the Sound Sensor

    1.3 The ground movements can also be detected by the Vibration Sensor

2. **What factor determines that the device is a low-cost and effective technology?**

    2.1 The Arduino sensor is a low-cost gadget that can perform as well as more expensive ones.

    2.2 It easy to set up

3. **What is the assurance of the device to alert people?**

    3.1 The buzzer will produce a sound if the sensors detects any movements or vibration.

    3.2 The LED will blink that can also help people even in just little information.

    3.3 The buzzer's sound is enough to inform people that there's an earthquake.

Testing Procedure

Test I.

Test Writer: Rago, Trixzy L.

Test Core Name: Output Sensor

Description: The devices provide alerting outputs.

Tester Information

Name of tester: Lat, Joshua B. **Date:** Nov. 3, 2021

Hardware/ Software: HARDWARE **Time:** 12:30 P.M.

Step	Action	Expected Result	Pass	Fail	N/A	Comments
1	Connecting the LED by jumper wires in Breadboard and Arduino.	The LED will Blink to provoke residents.	/			
2	Connecting the Buzzer by jumper wires in Breadboard and Arduino.	The buzzer will make a sound to alert the people for The coming earthquake.	/			

Table 2: Test I

Test II

Test Writer: Rago, Trixzy L.

Test Core Name: Arduino Sensors

Description: Detects sound, movements and vibration.

Tester Information

Name of tester: Rago, Trixzy L. **Date:** Nov. 22, 2021

Hardware/ Software: HARDWARE **Time:** 1:00 P.M.

Step	Action	Expectation	Pass	Fail	N/A	Comments
1	Connecting the Sound sensor, LED and Buzzer to the bread board and Arduino	Detect sounds and LED will blink and the Buzzer makes sound to alert	/			
2	Make a sketch/ code for sound sensor	Detect sound's	/			
3	Connecting the Vibration sensor, LED and Buzzer to the bread board and Arduino	Detect vibrations movements from the ground and LED will blink and	/			

		the Buzzer makes sound to alert				
4	Make a sketch/ code for a vibration sensor	Detect vibrations movements from the ground	/			

Table 3: Test II

Test III

Test Writer: Rago, Trixzy L.

Test Core Name: Arduino Sensors

Description:

Tester Information

Name of tester: Yumol, Angelo Gabriel P. **Date:** Nov. 22, 2021

Hardware/ Software: HARDWARE **Time:** 1:00 P.M.

Step	Action	Expected Results	Pass	Fail	N/A	Comments
1	Connecting all the sensors and output devices by jumper	Vibration Sensor will act as the main sensor and if movements	/			

	wires to the breadboard and Arduino.	on the ground is detected the buzzer will produce sound and sound sensor will detect sa buzzer sound and LED will act as output sensor of the sound sensor and emits light to alert people.				
2	Make a sketch/ code for all the output sensors and Arduino sensors	Make a sketch/code that will detect any movement on the ground and alert people as the idea that researches intended to.	/			

Table 4: Test III

STATISTICAL TREATMENT

The following statistical procedures was used in order to gather and analyze data from the respondents of the study. The researchers will gather data from students in selected sections such as STEM Engineering. Once the data was gathered, the researchers will organize and tally the answers and use the statistical procedures.

Percentage - Is calculated by dividing the frequency in each category by the total number of respondents in the sample.

Formula: $\mathbf{P=\frac{f}{n}x100}$

Where:

P= Percentage

f= Frequency

n= Number of respondents

100= Content Value

Weighted Mean - Is determined by dividing the number of respondents in each category by the total number of respondents in the sample.

Formula: x= $\frac{\sum \mathbf{fx}}{n}$

Where:

X= Weighted mean

∑**fx**= the sum of products of F and N (Frequency of each weight and x as the weight of each operation.

n= the total number of respondents

Slovin's Formula - If the researchers know nothing about the population's behavior, this formula can be used to compute the proper sample size based on the population and margin of error.

Formula: $\mathbf{n=\frac{N}{1+Ne2}}$

Where:

n= Sample size

N= Total population

e= Margin of error 5%

CHAPTER 4

PRESENTATION, INTERPRETATION, AND ANALYSIS OF DATA

This chapter presents the findings of the study based on the requirements stated in the statement of the problem. Whether the study is qualitative or quantitative, the data must be analyzed and interconnections between and among the data must be established

Part 1: Demographic Profile

Gender	Frequency	Percentage
Male	107	60.8%
Female	69	39.2%
TOTAL	176	100%

Table 5: Indicates the demographic profile of the respondents in Terms of Gender

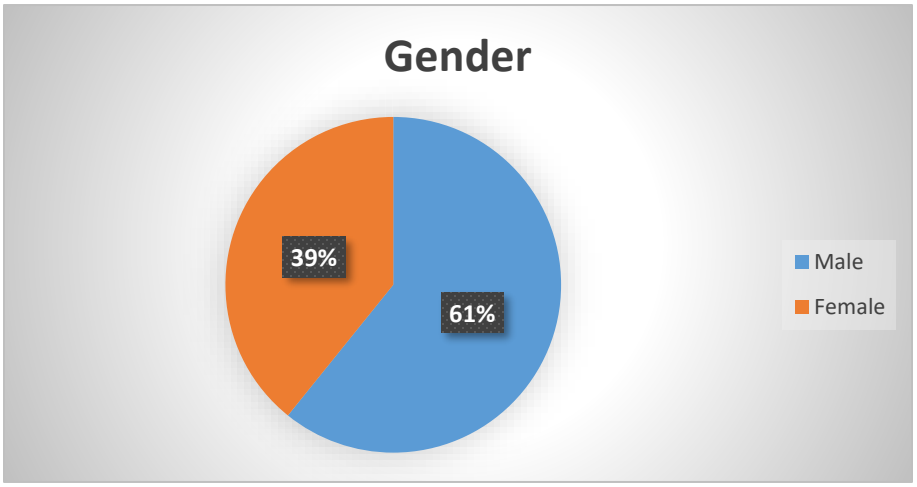

Figure 3. Demographic Profile

RESULTS:

Numerical Rating	Equivalent
4	Strongly Agree
3	Agree
2	Disagree
1	Strongly Disagree

Legend:

Range-Value	Verbal Interpretation
3.26 – 4.00	Strongly Agree
2.51 – 3.25	Agree
1.76 – 2.50	Disagree
1.00 – 1.75	Strongly Disagree

	MEAN SCORE	DESCRIPTION
ALERTNESS		
1. Does the buzzer produces sound when movements from the ground was detected by vibration sensor?	**3.51**	**Strongly Agree**
2. LED's are blinking it will help the people and residents to notice that the ground is shaking.	**3.47**	**Strongly Agree**
3. The alert sound of the buzzer is enough to inform people in a residential house that there is an earthquake occurring.	**3.46**	**Strongly Agree**
EFFICIENCY		
1. Does the vibration sensor responsive of any shaking that will happen on the ground?	**3.43**	**Strongly Agree**
2. It shows that the vibration sensor can detect the shaking of the ground and buzzer will act as alert for people?	**3.47**	**Strongly Agree**

3. The buzzer is producing sound and the sound sensor detects the buzzer and emits light?	**3.48**	**Strongly Agree**
LOW-COST AND EFFECTIVE		
1. It is easy to set up and it works fine as the expensive ones.	**3.44**	**Strongly Agree**
2. The materials are cheap but the products are effective when the earthquake strikes.	**3.36**	**Strongly Agree**
3. The quality of the product and sensors are worth buying for making such innovative project.	**3.42**	**Strongly Agree**
4. The sensors and output devices are working fine and was tested.	**3.45**	**Strongly Agree**

Table 6: Mean Results of the Survey

ALERTNESS

1.1 Does the buzzer produces sound when movements from the ground was detected by vibration sensor?

From the selected students in the STEM Engineering strand in Lyceum of Alabang, Out of 176 respondents, ninety-one (91) have answered strongly agree, and eighty-five (85) have answered agree.

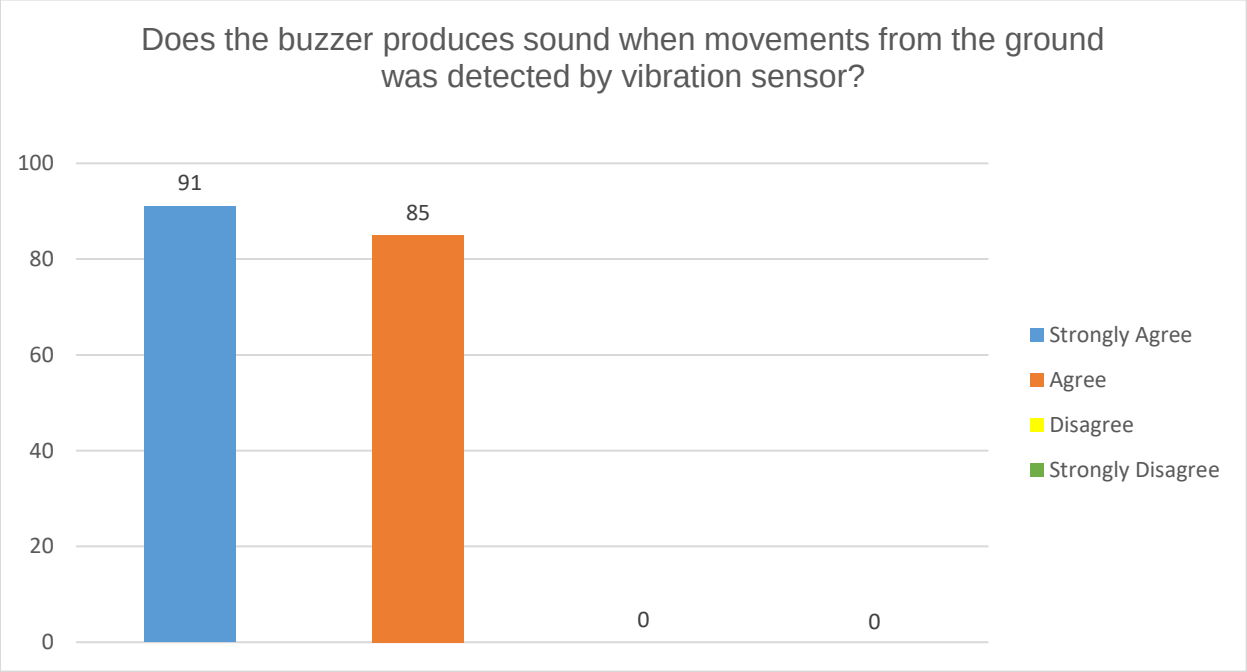

Figure 4. Does the buzzer produces sound when movements from the ground was detected by vibration sensor?

1.2 LED's are blinking it will help the people and residents to notice that the ground is shaking.

From the selected students in the STEM Engineering strand in Lyceum of Alabang, Out of 176 respondents, eighty-seven (87) have answered strongly agree, eighty-seven (87) have answered agree, while two (2) have answered disagree.

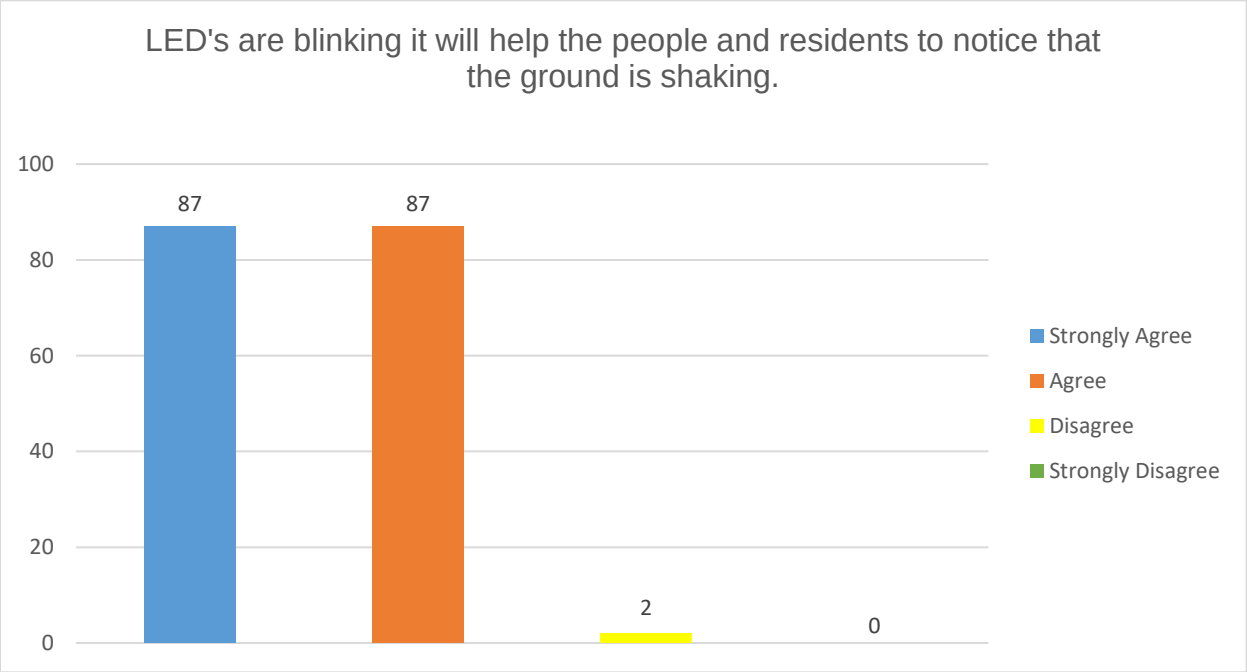

Figure 5. LED's are blinking it will help the people and residents to notice that the ground is shaking.

1.3 The alert sound of the buzzer is enough to inform people in a residential house that there is an earthquake occurring.

From the selected students in the STEM Engineering strand in Lyceum of Alabang, Out of 176 respondents, eighty-three (83) have answered strongly agree, ninety-two (92) have answered agree, while one (1) have answered disagree.

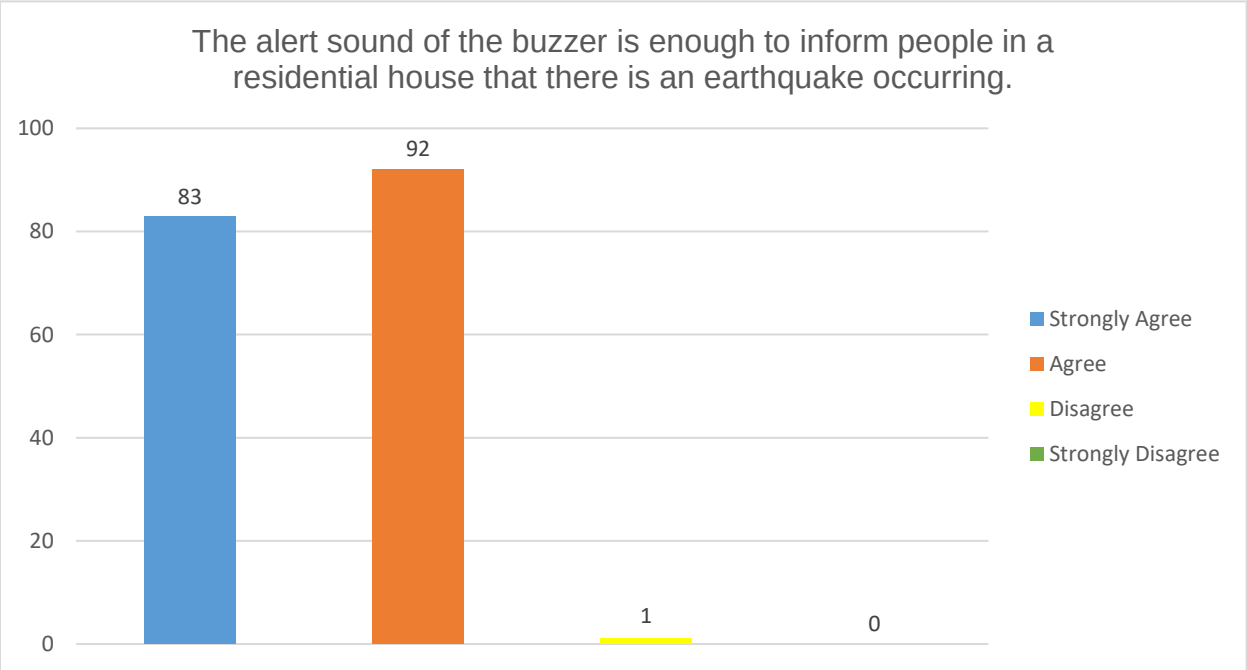

Figure 6. The alert sound of the buzzer is enough to inform people in a residential house that there is an earthquake occurring.

EFFICIENCY

2.1 Does the vibration sensor responsive of any shaking that will happen on the ground?

From the selected students in the STEM Engineering strand in Lyceum of Alabang, Out of 176 respondents, seventy-nine (79) have answered strongly agree, ninety-six (96) have answered agree, while one (1) have answered disagree.

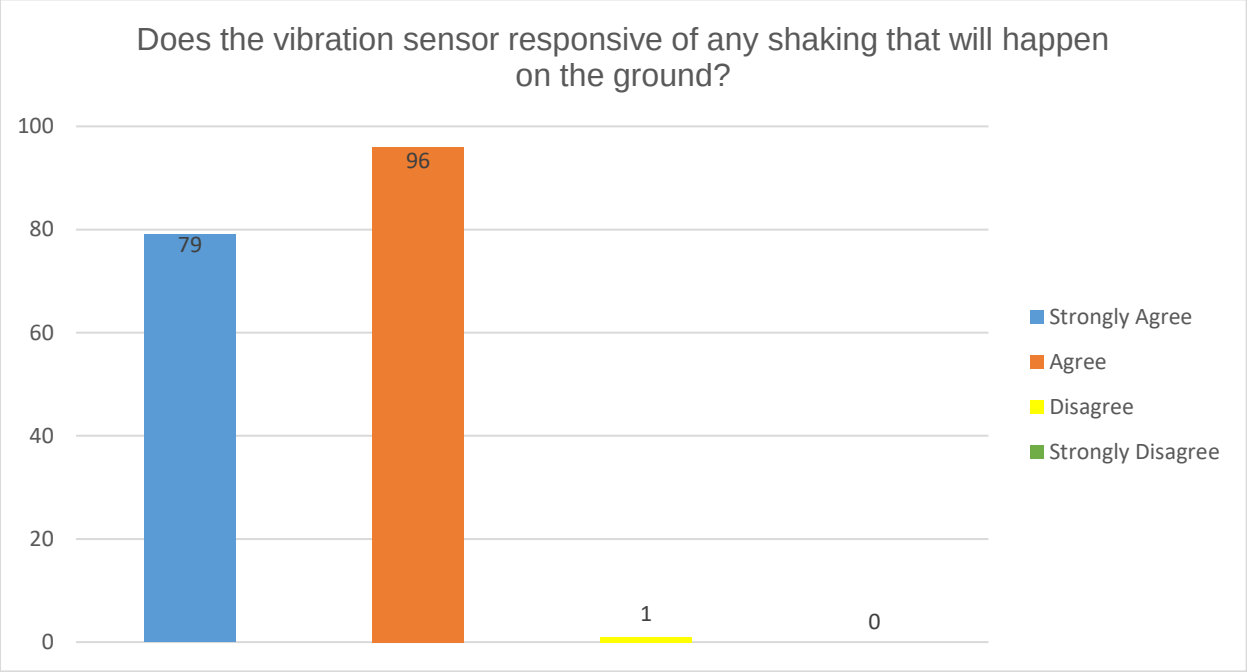

Figure 7. Does the vibration sensor responsive of any shaking that will happen on the ground?

2.2 It shows that the vibration sensor can detect the shaking of the ground and buzzer will act as alert for people?

From the selected students in the STEM Engineering strand in Lyceum of Alabang, Out of 176 respondents, eighty-three (83) have answered strongly agree, and ninety-three (93) have answered agree.

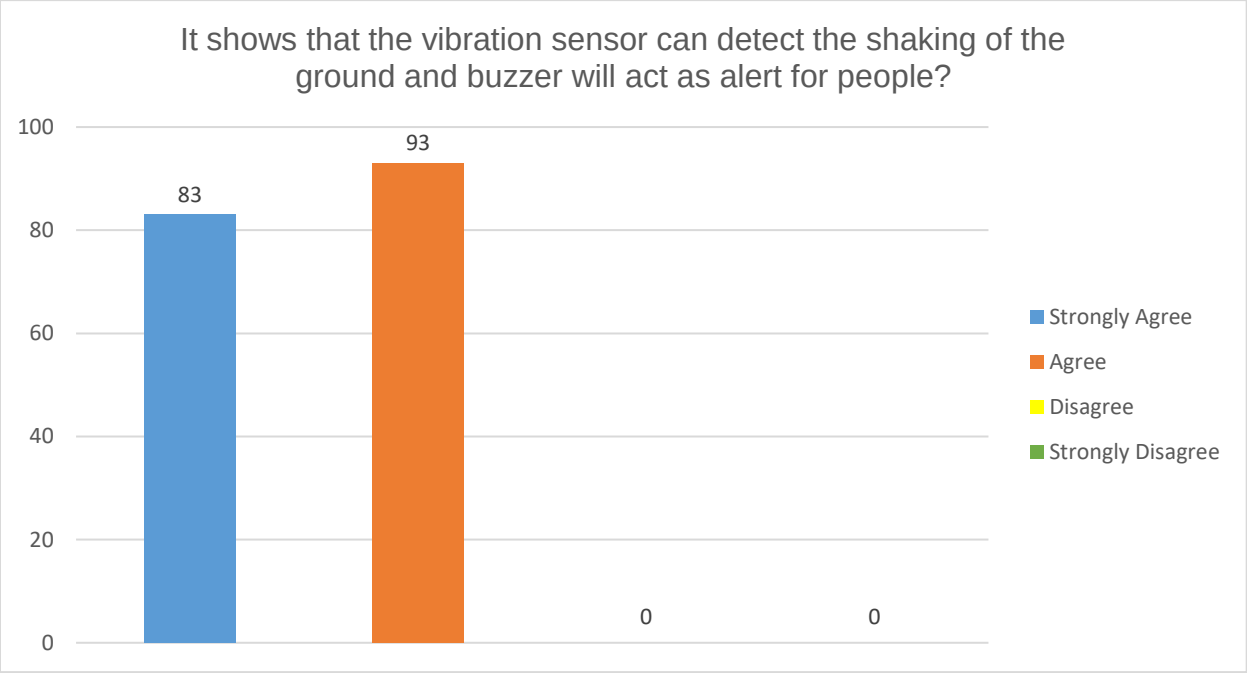

Figure 8. It shows that the vibration sensor can detect the shaking of the ground and buzzer will act as alert for people?

2.3 The buzzer is producing sound and the sound sensor detects the buzzer and emits light?

From the selected students in the STEM Engineering strand in Lyceum of Alabang, Out of 176 respondents, eighty-five (85) have answered strongly agree, ninety (90) have answered agree, while one (1) have answered disagree.

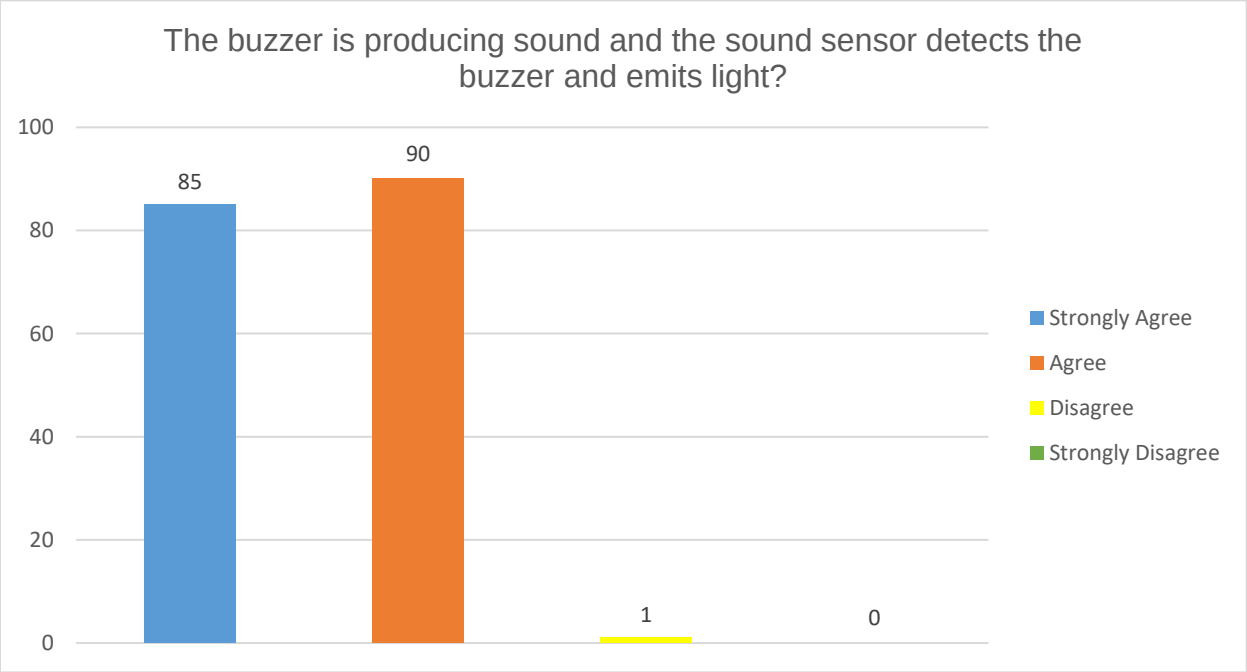

Figure 9. The buzzer is producing sound and the sound sensor detects the buzzer and emits light?

LOW – COST AND EFFECTIVE

3.1 It is easy to set up and it works fine as the expensive ones.

From the selected students in the STEM Engineering strand in Lyceum of Alabang, Out of 176 respondents, eighty-four (84) have answered strongly agree, eighty-seven (87) have answered agree, while five (5) have answered disagree.

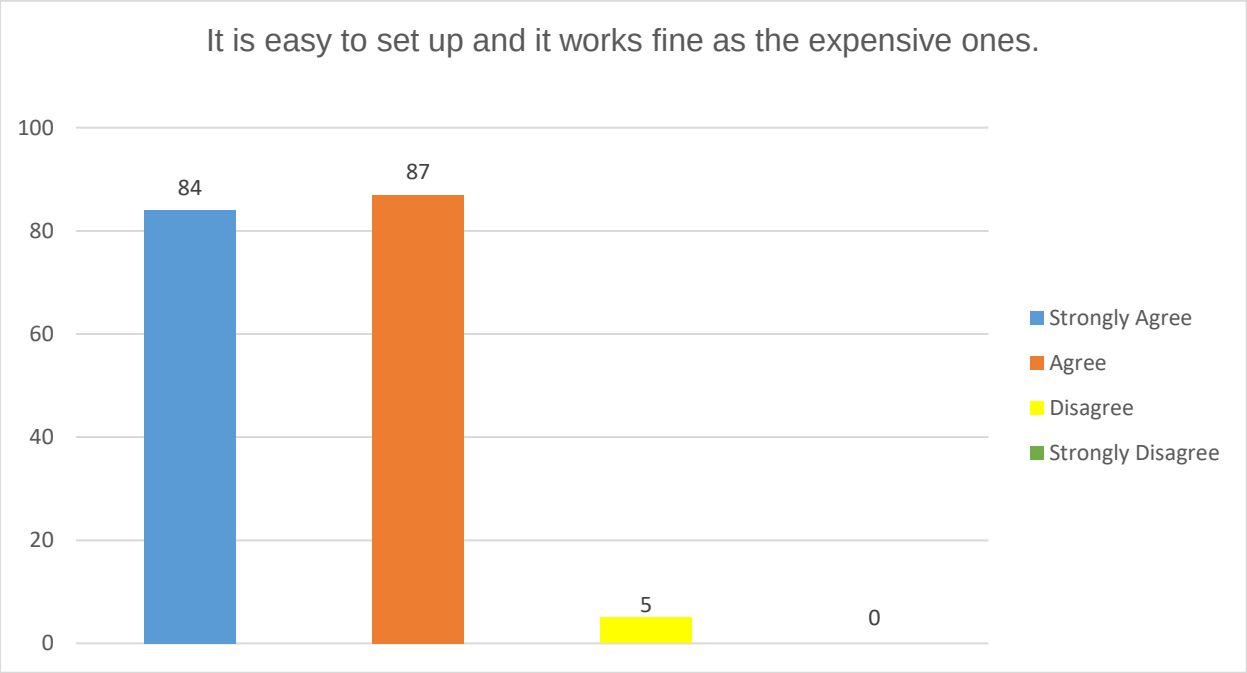

Figure 10 It is easy to set up and it works fine as the expensive ones.

3.2 The materials are cheap but the products are effective when the earthquake strikes.

From the selected students in the STEM Engineering strand in Lyceum of Alabang, Out of 176 respondents, seventy-one (71) have answered strongly agree, one hundred (100) have answered agree, while five (5) have answered disagree.

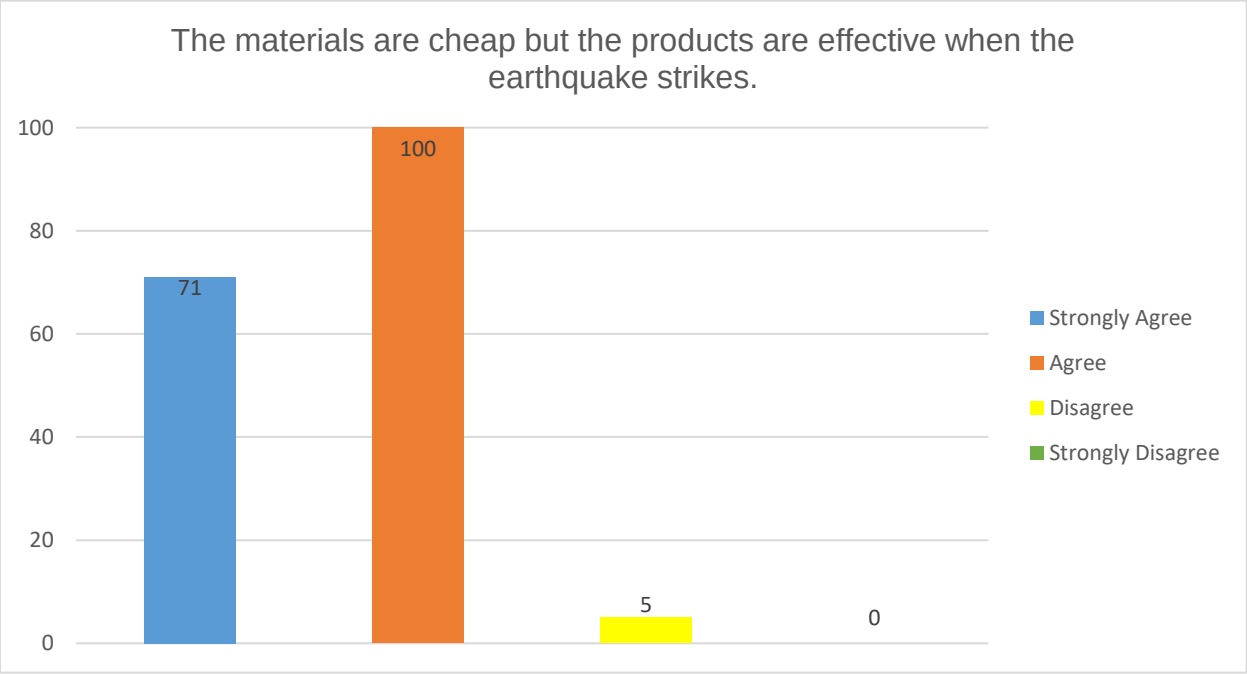

Figure 11 The materials are cheap but the products are effective when the earthquake strikes.

3.3 The quality of the product and sensors are worth buying for making such innovative project.

From the selected students in the STEM Engineering strand in Lyceum of Alabang, Out of 176 respondents, seventy-eight (78) have answered strongly agree, ninety-five (95) have answered agree, while three (3) have answered disagree.

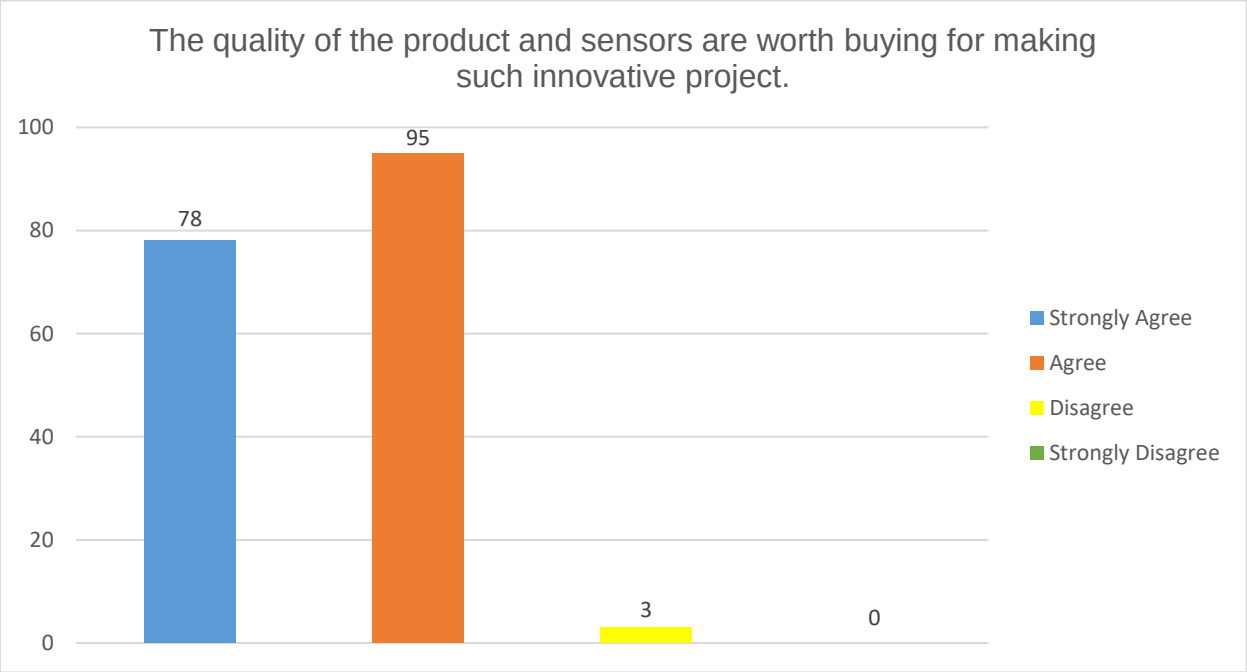

Figure 12 The quality of the product and sensors are worth buying for making such innovative project.

3.4 The sensors and output devices are working fine and was tested.

From the selected students in the STEM Engineering strand in Lyceum of Alabang, Out of 176 respondents, eighty-two (82) have answered strongly agree, ninety-two (92) have answered agree, while two (2) have answered disagree.

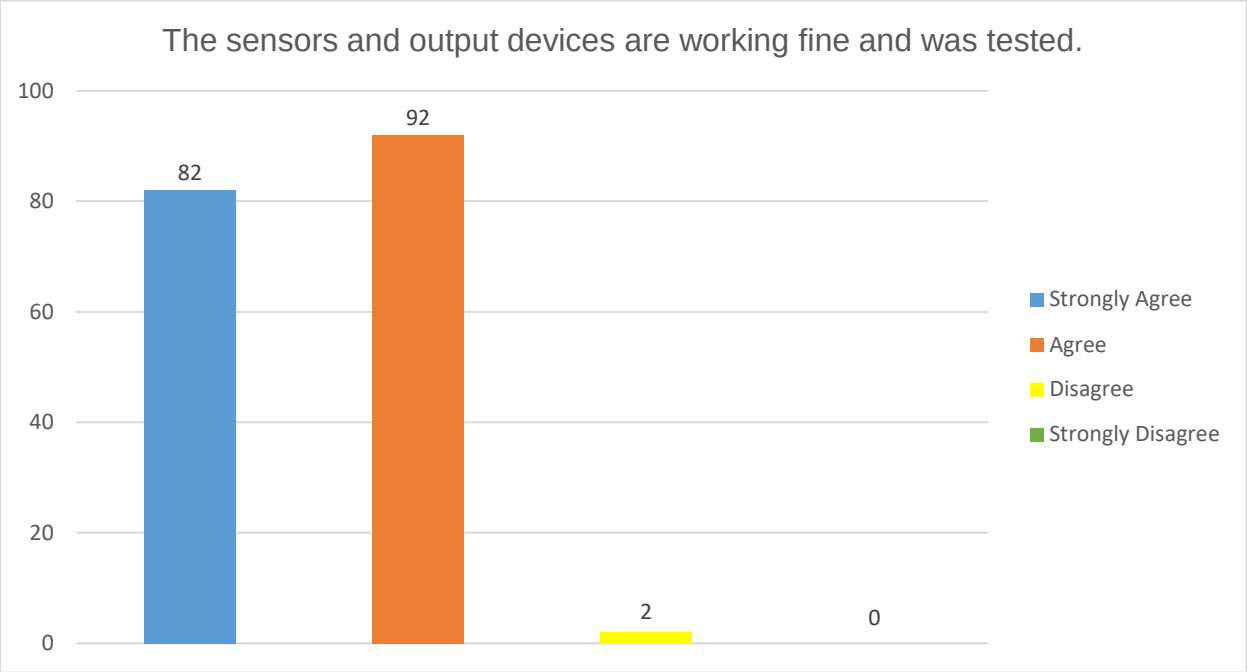

Figure 13 The sensors and output devices are working fine and was tested.

Weighted Mean

Category	Weighted Mean	Equivalent Rating	Rating Scale	
Alertness	**3.48**	**Strongly Agree**	**3.26 – 4.00**	**Strongly Agree**
Efficiency	**3.46**	**Strongly Agree**	**2.51 – 3.25**	**Agree**
Low-Cost and Effective	**3.41**	**Strongly Agree**	**1.76 – 2.50**	**Disagree**
			1.00 – 1.75	**Strongly Disagree**

Table 7: Weighted Mean

OVERALL WEIGHTED MEAN: 3.45 = STRONGLY AGREE

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

SUMMARY OF FINDINGS

The researchers conducted a survey for atleast 2 weeks span, the results shows that mostly of the answers is ”Strongly Agree”. There are three categories in the survey that the researches have indicated such as alertness, efficiency and low-cost and effective, these categories were indicated “strongly agree” by the majority of the respondents.

- The category alertness were rated “strongly agree” most of the respondents.
- Majority of the respondents chose “strongly agree” for the category efficiency.
- The category low-cost and effective was rated mostly as “strongly agree”.

The lowest rating given during the survey regarding to the three categories alertness, efficiency, low-cost and effective was “strongly disagree”.

CONCLUSION

- With every movement of the earth, our prototype displays information about an earthquake event, and we also hear a warning that there is an earthquake. We can use it so that we humans can be alert and have the idea to be prepared and follow the proper procedures.
- This study showed that the VAS prototype is capable of detecting vibration from the ground as well as producing sound that alerts people to the occurrence of an earthquake.
- Our prototype displays information on an earthquake event with every movement of the earth, and we also hear an earthquake warning. We can use it to keep ourselves aware and have the foresight to be prepared and follow right procedures.
- With this study, we humans can have the benefit of alertness through the VAS Prototype. We also can receive the signal from the prototype through the shaking of the ground.

RECOMMENDATION

- A stronger external frame casing is recommended to extend the product's lifespan and make it more handy and durable.
- To be more alert, a louder sound buzzer with a wide range of sound capacity is recommended.
- We recommend using LCD for the output sensor, to add a digital sign for the warning when detecting the movement from the ground.
- To improve movement detection, add an accelerometer sensor it can detect noises with sensitivity 20 times greater than current-based seismometers. The use of an accelerometer is capable as seismic pressure waves can travel faster than corresponding land motions, enabling sensors to detect those waves on the x and y-axis.
- To increase prototype safety, I recommend this prototype; for a more proactive scenario, this project should be placed in a safer, unoccupied area whenever there is a crisis.
- We recommend placing the prototype in places where it can’t detect minor movements such as moving vehicles, walking people. We recommend placing it to high wall or in ceiling to avoid unnecessary sound detections.

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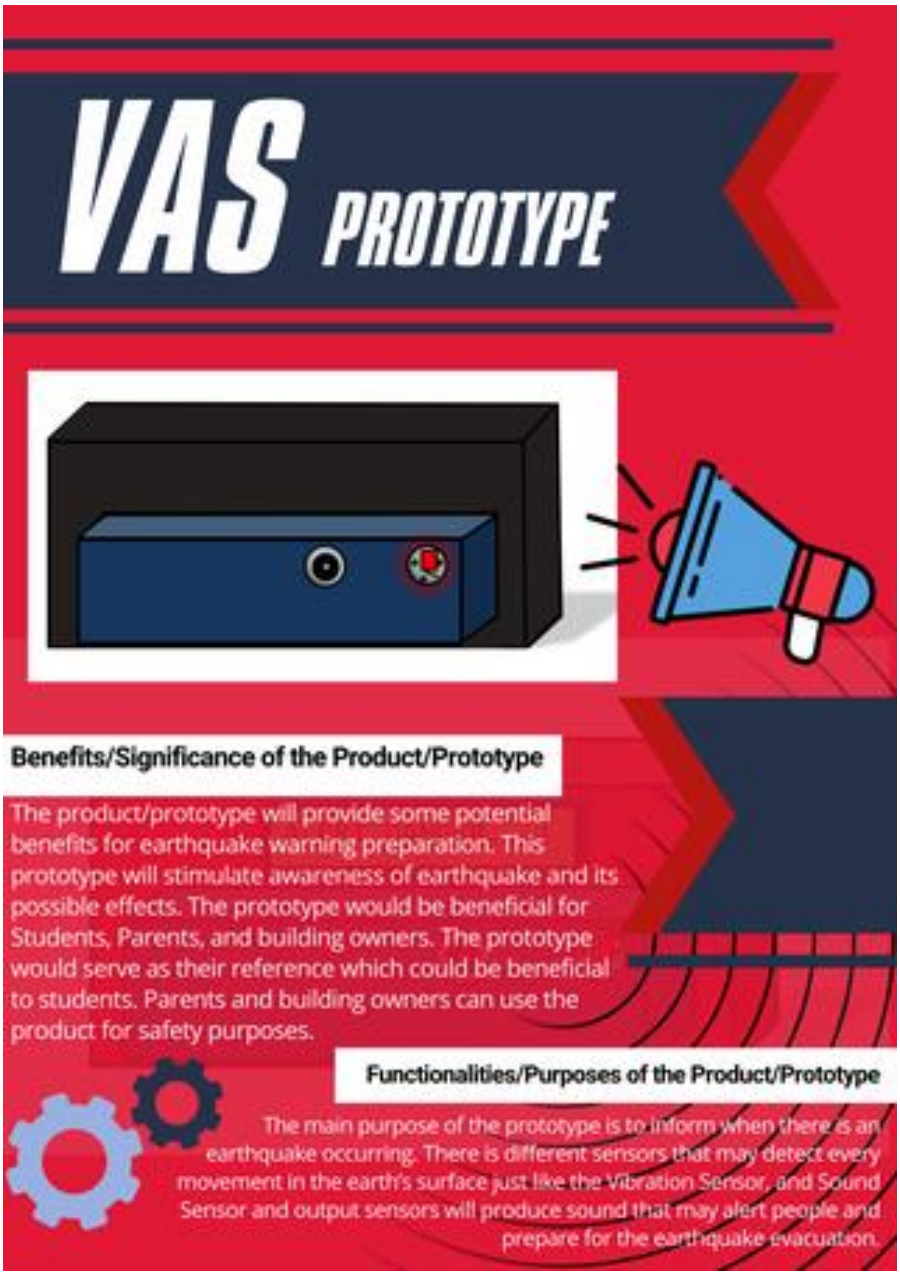
APPENDICES

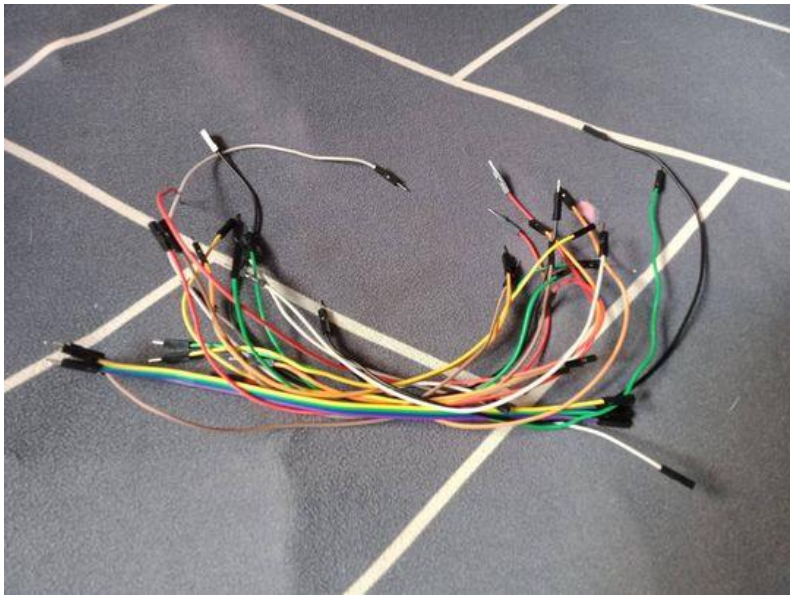
APPENDIX A

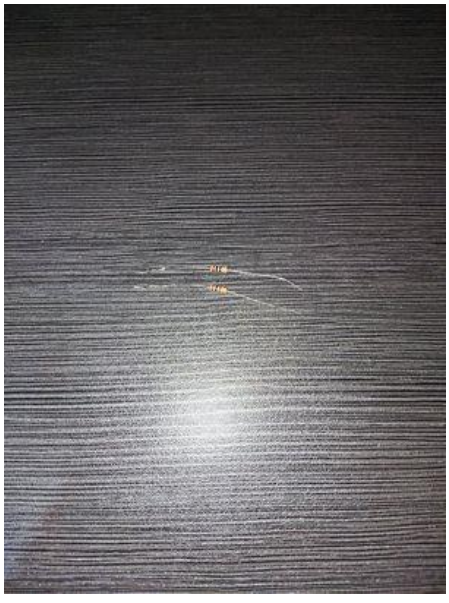
RESEARCH POSTER



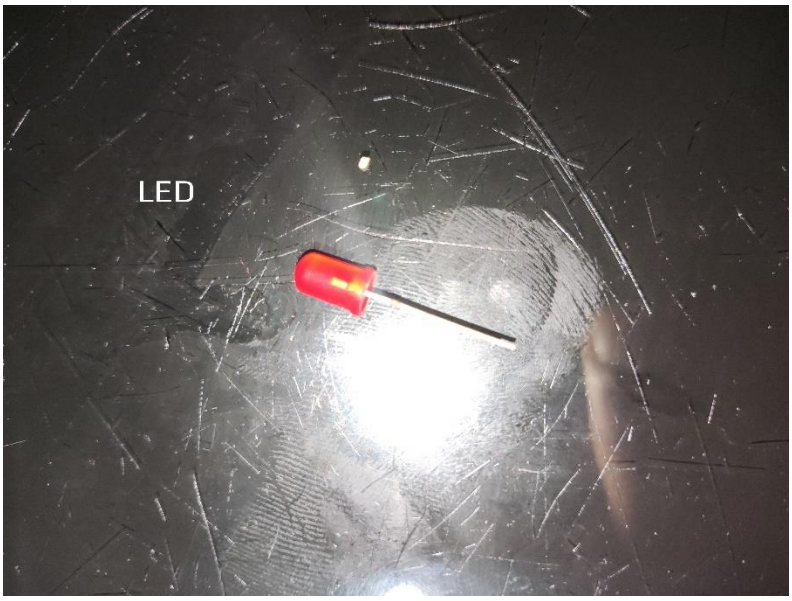
APPENDIX B

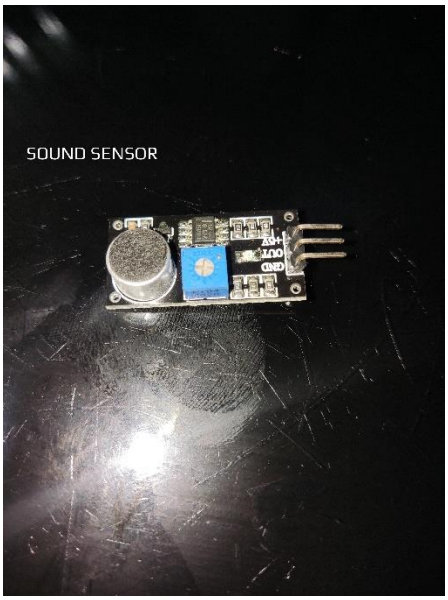
MATERIALS



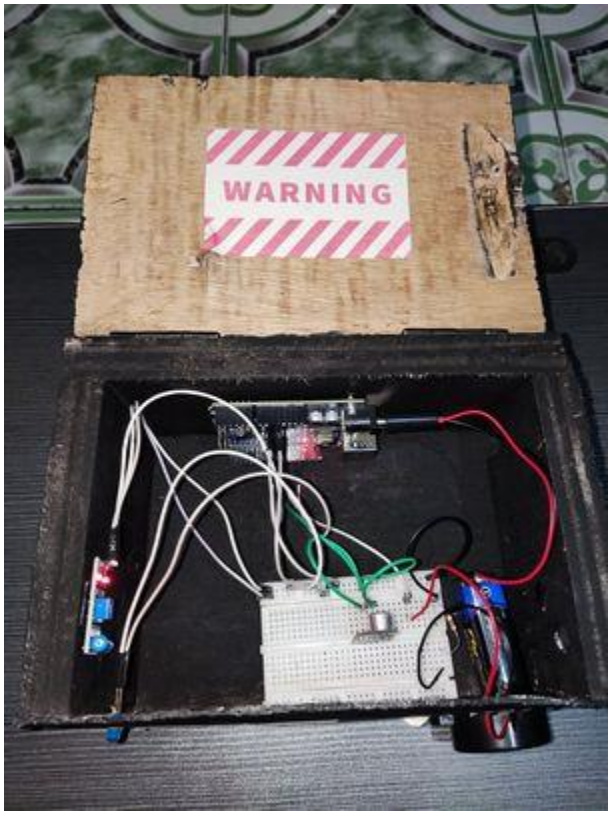



VIBRATION SENSOR


LED


SOUND SENSOR

OUTPUT



APPENDIX C

BUDGETARY PLAN

Materials	Quantity	Price
Arduino Uno	1	₱299.00
Vibration Sensor	1	₱69.00
Sound Sensor	1	₱65.00
Buzzer Module	1	₱50.00
Breadboard	1	₱45.00
LED	2	₱20.00
Jumper Wire F-M	20	₱48.00
Jumper Wire M-M	20	₱38.00
Battery	1	₱60.00
Casing		₱300.00
Shipping Fee		₱78.00
	TOTAL:	₱1072.00

Table 8: Budgetary Plan

APPENDIX D

TIME TABLE

SEPTEMBER

1st WEEK	Arduino Discussion
2ND WEEK	Sketching Blink LED and Other Arduino Sensors
3RD WEEK	Research Title Proposal and Literature Review
4TH WEEK	Making a Sketch/Design of Prototype from the Approved Topic, and Budgetary Plan

OCTOBER

1ST WEEK	Discussion of Nature of Inquiry and Quantitative Research
2ND WEEK	Discussion of Identifying the Inquiry and Stating the Problem
3RD WEEK	Contribution for the Materials and Designing Schematic
4TH WEEK	Purchasing of Materials

NOVEMBER

1ST WEEK	Making the Prototype
2ND WEEK	Drafting of Chapter 1 and 2
3RD WEEK	Inspection of Prototype
4TH WEEK	Continuation of testing the System/Prototype

DECEMBER

1ST WEEK	Continue to Develop Prototype
2ND WEEK	Drafting of Chapter 3
3RD WEEK	Continue Testing the System
4TH WEEK	Continue Testing the System

JANUARY

1ST WEEK	Finalizing the Device
2ND WEEK	Submission of Prototype
3RD WEEK	Defense
4TH WEEK	Defense

FEBRUARY

1ST WEEK	Preparing Documents in Chapters 4-5
2ND WEEK	Revisions for Research Document Chapters 1-3, Final Video, Time Table (SchedulesDeadlines) for 2nd Semester, Letter of Consent (For Respondents) Letter of Request (For Principal)
3RD WEEK	Submission of Survey Documents
4TH WEEK	Consultation of Prototype

MARCH

1ST WEEK	Data Analysis Discussion
2ND WEEK	Research Project Brainstroming
3RD WEEK	Preparation and Creating of Survey Forms
4TH WEEK	Disseminating of Survey Forms per Section in STEM Engineering Strand

APRIL

1ST WEEK	Continuation of Survey Dissemination
2ND WEEK	Checking of Respondents
3RD WEEK	Begin to Create Chapters 4-5
4TH WEEK	Submission of Chapters 1-5, and Final Oral Defense PPT

Table 9: Time Table

APPENDIX E:

SURVEY DOCUMENTS

SAMPLE SURVEY QUESTIONNAIRE

The students from STEM 12 – Sheba, are conducting a survey and evaluation for our research entitled "**THE DEVELOPMENT AND EVALUATION OF VAS PROTOYPE UTILIZING ARDUINO TECHNOLOGY",** for the subject requirement in our Research Subject.

In this regard, we would like to request your assistance in providing some data or information for our research project. It is our pleasure that any information acquired will be kept strictly confidential and will only be used for academic purposes.

NAME (not optional): _____

SEX: ☐ Male ☐ Female Section: _____

Kindly fill in the blanks and be honest with your answers. Refer to the legend below.
4 – Strongly Agree **3 – Agree** **2 – Disagree** **1 – Strongly Disagree**

	Strongly Agree	Agree	Disagree	Strongly Disagree
Efficiency				
1. Does the vibration sensor responsive of any shaking that will happen on the ground?				
2. It shows that the vibration sensor can detect the shaking of the ground and buzzer will act as alert for people?				
3. The buzzer is producing sound and the sound sensor detects the buzzer and emits light?				
Low-cost and Effective				

4. The materials are cheap but the products are effective when the earthquake strikes.				
5. It is easy to set up and it works fine as the expensive ones.				
6. The quality of the product and sensors are worth buying for making such innovative project.				
7. The sensors and output devices are working fine and was tested.				
Alertness				
8. Does the buzzer produce sound when movements from the ground was detected by vibration sensor?				
9. LED's are blinking it will help the people and residents to notice that the ground is shaking.				
10. The alert sound of the buzzer is enough to inform people in a residential house that there is earthquake occurring.				

LYCEUM OF ALABANG
BASIC EDUCATION
SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS

LETTER OF CONSENT

Greetings!

The students from STEM 12 – Sheba, are conducting a survey and evaluation for our research entitled "**THE DEVELOPMENT AND EVALUATION OF VAS PROTOYPE UTILIZING ARDUINO TECHNOLOGY",** for the subject requirement in our Research Subject.

In this regard, we would like to request your assistance in providing some data or information for our research project. It is our pleasure that any information acquired will be kept strictly confidential and will only be used for academic purposes.

.

Thank you for your cooperation!

Sincerely,

Leader: Lat, Joshua B.

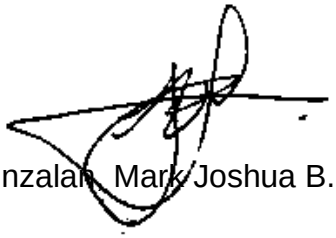
Rago, Trixzy L.

Yumol, Angelo Gabriel P.

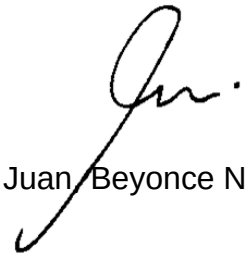
Vinluan, Deserre C.

Santos, Emmanuel P.

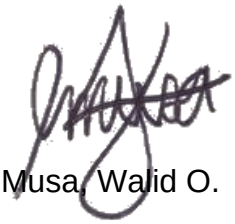
Hirondo, Maruh Claire



Punzalan, Mark Joshua B.



De Juan, Beyonce Nicole O.



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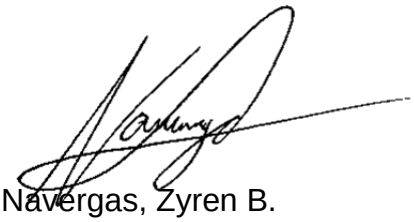

Navergas, Zyren B.

NOTED:

_____
Joshua R. Cariño, LPT
STEM Research Adviser

LYCEUM OF ALABANG
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SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS

LETTER OF REQUEST

February 2022

Engr. Rodrigo P. Calapan, LPT

Principal, SHS Department

Dear Principal.

In pending completion of our requirements for our research study entitled "**THE DEVELOPMENT AND EVALUATION OF VAS PROTOYPE UTILIZING ARDUINO TECHNOLOGY",** we would like to ask your permission for us to conduct a research survey on our fellow selected Grade 12 students of STEM Strand of Lyceum of Alabang, which is under your supervision, to provide us some information for our research.

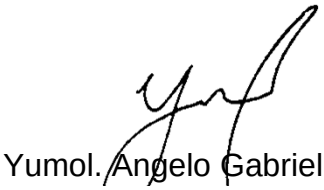
In this regard, we would like to request your assistance in providing some data or information for our research project. It is our pleasure that any information acquired will be kept strictly confidential and will only be used for academic purposes. We sincerely hope that you allow us in this humble matter to accomplish our requirements. We are looking forward to your positive response.

Thank you for your usual understanding and support.

Respectfully yours,

Leader: Lat, Joshua B.

Rago, Trixzy L.



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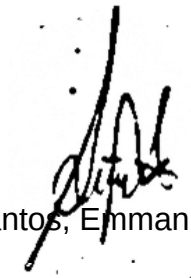
Vinluan, Deserre C.



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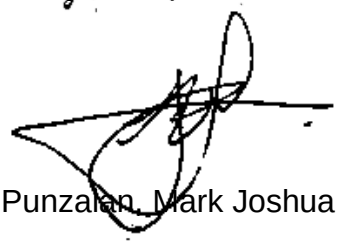
Hirondo, Maruh Claire M.



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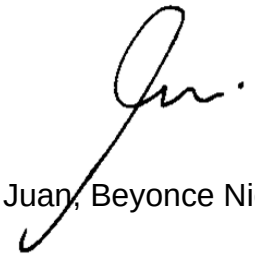

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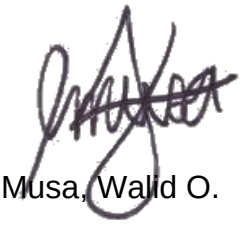

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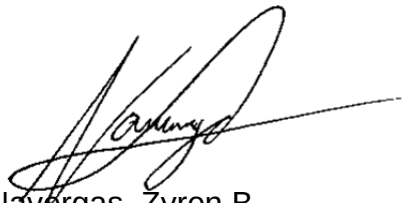


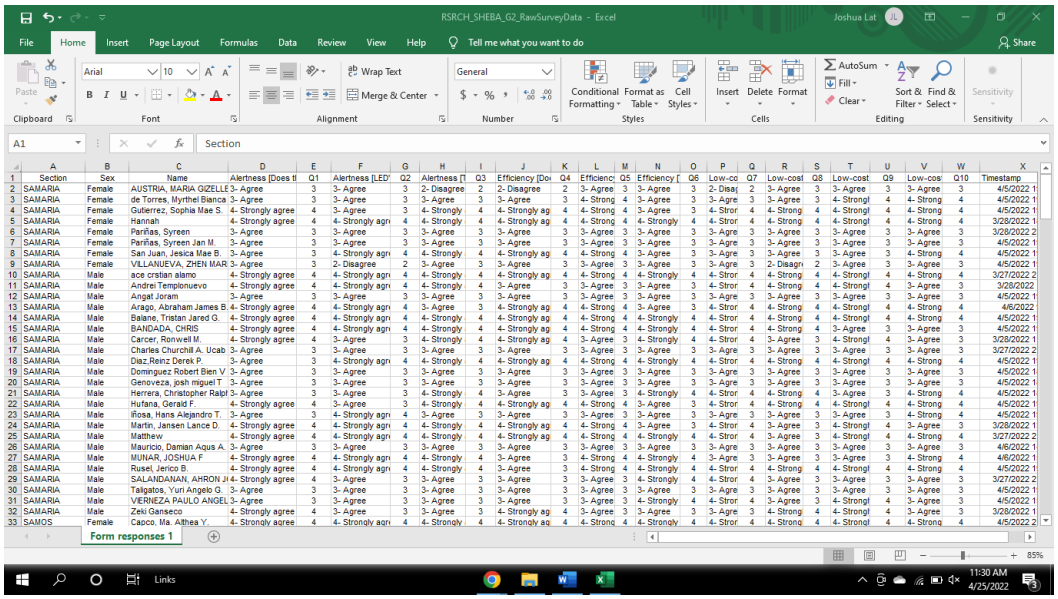
Navergas, Zyren B.

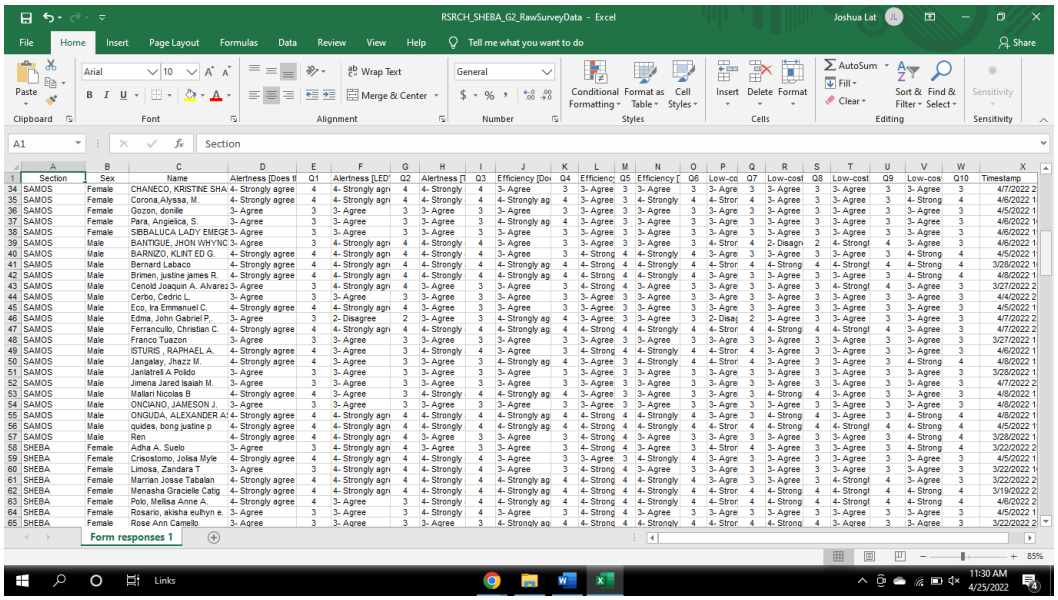
NOTED:

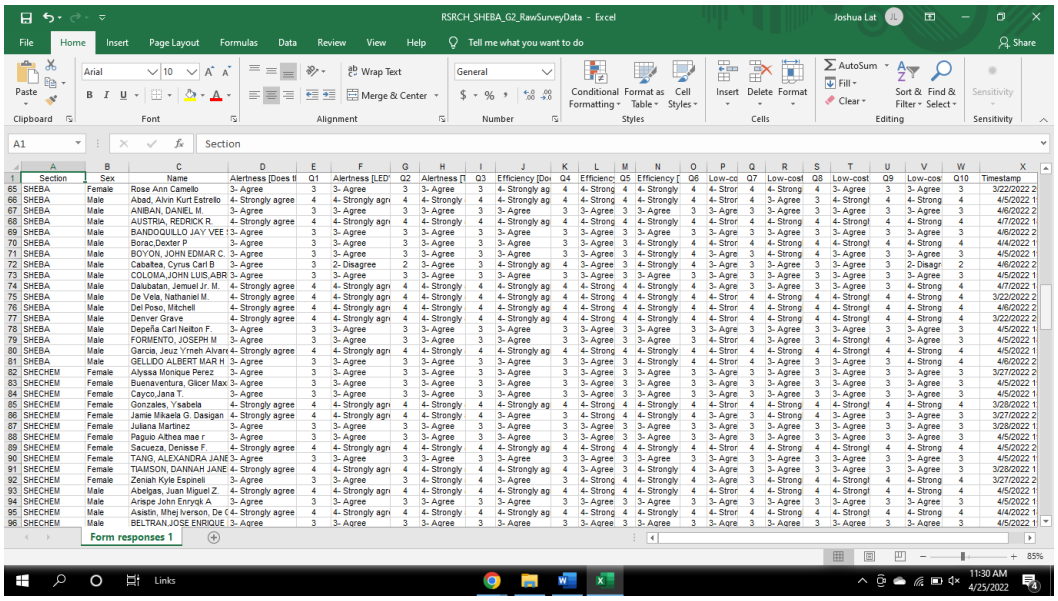
_____
Joshua R. Cariño, LPT
STEM Research Adviser

APPENDIX F

SURVEY'S RAW DATA



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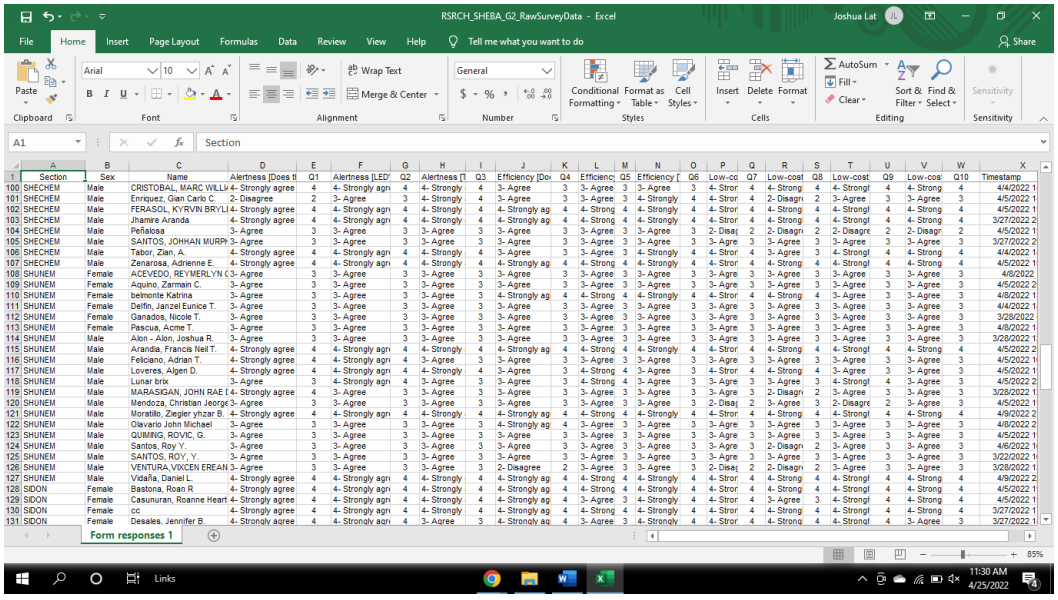
Joshua Lat
Form responses 1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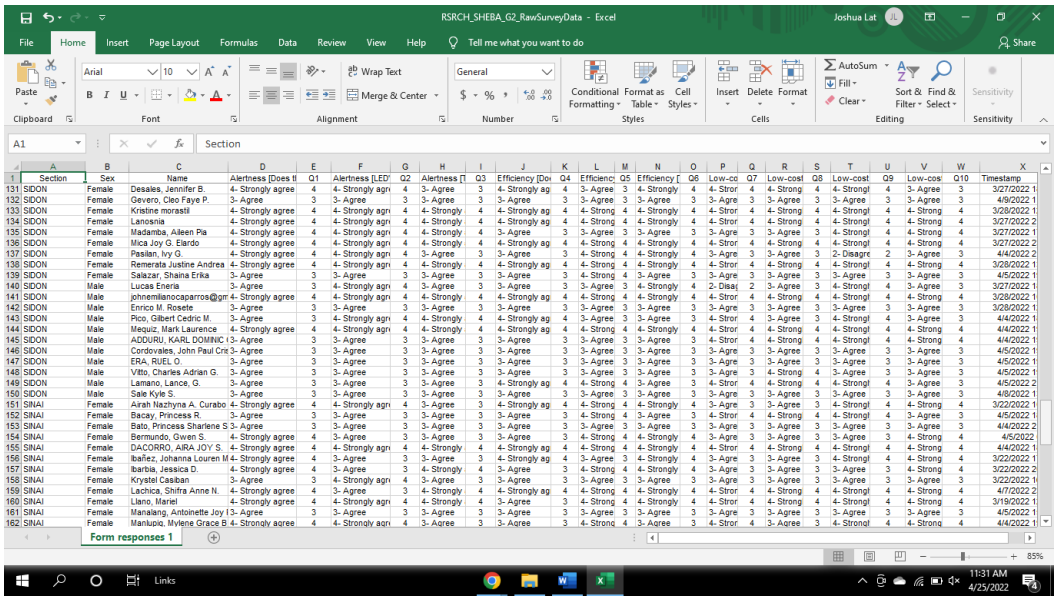
Form responses 1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Joshua Lat
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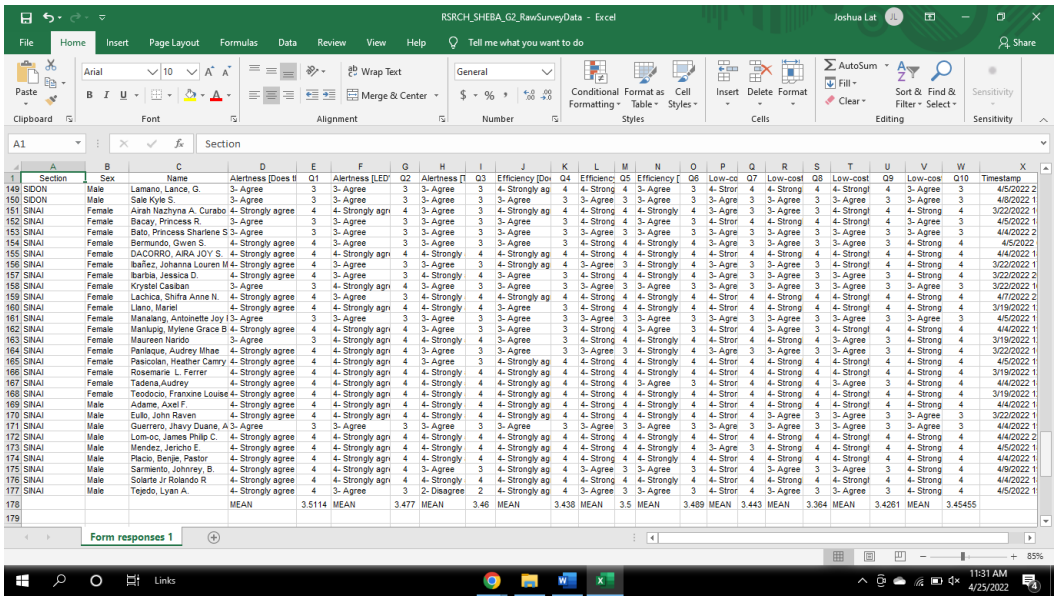
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Joshua Lat
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Tell me what you want to do
Share
Paste
Arial
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Merge & Center
General
Conditional Formatting
Format as Table
Cell Styles
Insert
Delete
Format
AutoSum
Fill
Clear
Sort & Filter
Find & Select
Sensitivity
Clipboard
Font
Alignment
Number
Styles
Cells
Editing
A1
Section
Form responses 1
Links
11:31 AM
4/25/2022

COMPLETE LIST OF DATA

	4 Strongly Agree	3 Agree	2 Disagree	1 Strongly Disagree
ALERTNESS				
1. Does the buzzer produces sound when movements from the ground was detected by vibration sensor?	91	85	0	0
2. LED's are blinking it will help the people and residents to notice that the ground is shaking.	87	87	2	0
3. The alert sound of the buzzer is enough to inform people in a residential house that there is an earthquake occurring.	83	92	1	0
EFFICIENCY				
1. Does the vibration sensor responsive of any shaking that will happen on the ground?	79	96	1	0
2. It shows that the vibration sensor can detect the shaking of the ground and buzzer will act as alert for people?	83	93	0	0
3. The buzzer is producing sound and the sound sensor detects the buzzer and emits light?	85	90	1	0

LOW – COST AND EFFECTIVE				
1. It is easy to set up and it works fine as the expensive ones.	84	87	5	0
2. The materials are cheap but the products are effective when the earthquake strikes.	71	100	5	0
3. The quality of the product and sensors are worth buying for making such innovative project.	78	95	3	0
4. The sensors and output devices are working fine and was tested.	82	92	2	0

Table 10: Complete List of Data

APPENDIX G

CURRICULUM VITAE

DE JUAN, BEYONCE NICOLE O.

Blk 10 Lot 17 Cuidad Grande 2 Olympia Subd.
City of Sta. Rosa, Laguna

Contact # 09563555484

Email: katelest1234@gmail.com

Birthday : August 12, 2004

Place of Birth : Philippine General Hospital, Manila

EDUCATIONAL ATTAINMENT

Senior High School

Lyceum of Alabang (2020-2022)

Km. 30 National Road. Tunasan, Muntinlupa City

Junior High School

Aplaya National High School-ANNEX (2017-2020)

Brgy. Market Area, City of Sta. Rosa, Laguna

Saint Michael's College of Laguna (2016-2017)

Old National Road, City of Binan, Laguna

Elementary

Achievement's

With Honors (2020-2021)

Academic Awardee (2021)

Best in Mathematics (2021)

Santa Rosa Elementary School – Central 1 (2010-2016)

Rizal Blvd. Brgy. Malusak, City of Sta. Rosa, Laguna

MARUH CLAIRE M. HIRONDO

Blk 9 Lot 36 Aisaiah St. Adelina 1 Brgy. San Antonio
San Pedro Laguna
Mobile no.: 09498070129
Email: maruhclairehirondo@gmail.com

PERSONAL INFORMATION

Age:	17
Birthday:	June 22, 2004
Birthplace:	Looc, Romblon
Nationality:	Filipino
Religion:	Catholic
Parent/s name:	Jelly Hirondo
	Rolito Hirondo

EDUCATIONAL ATTAINMENT

Senior High school	-Lyceum of Alabang, Tunasan, Muntinlupa (2021 – 2022)
Junior High school	-Adelina 1 National High school Sampaguita annex (2017 – 2018)
Elementary	-Adelina 1 Complex Elementary School (2013 – 2014)

ACHIEVEMENT

WITH HONORS (2020 - 2021)

LAT, JOSHUA B.

170 Purok 2, Nofuente Compound.
Cupang, Muntinlupa City

Contact # 09462044724

Email: joshubunyi31@gmail.com

Birthday : May 31, 2005

Place of Birth : Alabang, Muntinlupa City

Achievement's

With Honors (2020-2022)

Academic Awardee (2021)

Academic Awardee (2022)

EDUCATIONAL ATTAINMENT

Senior High School

Lyceum of Alabang (2020-2022)

Km. 30 National Road. Tunasan, Muntinlupa City

Junior High School

Muntinlupa National High School - Main (2016-2020)

NBP Reservation. Poblacion, Muntinlupa City

Elementary

Maitim II Elementary School (2013-2016)

Maitim II East. Tagaytay City, Cavite

Cupang Elementary School (2010-2013)

Purok 3. Cupang, Muntinlupa City

MUSA, WALID O.

#7th 3rd Street Phase 1D Pacita Complex 1

Contact # 09208343162

Email: Stephaniemusa14@gmail.com

Birthday: December 11,2003

Place of Birth: Olongapo

EDUCATION ATTAINMENT

Senior High School

Lyceum of Alabang (2020-2022)

Km. 30 National Road Tunasa, Muntinlupa City

Junior High School

Pacita Complex 1 National High School (2016-2020)

San Pedro Laguna

Elementary School

Pacita Complex 1 Elementary School

Pacita 1 National Road

NAVERGAS, ZYREN B.

Purok Manggahan Baranggay Sampaguita San Pedro Laguna

Contact # +63 969 172 0141

Email: navergaszyren@gmail.com

Birthday : December 6, 2003

Place of Birth : Holiday Homes San Pedro Laguna

EDUCATIONAL ATTAINMENT

Senior High School

Lyceum of Alabang (2020-2022)

Km. 30 National Road. Tunasan, Muntinlupa City

Junior High School

Sampauita Village National High School - Main (2016-2020)

Elementary

Sampaguita Village Elementary School (2013-2016)

Sampaguita Village San Pedro Laguna

MARK JOSHUA B. PUNZALAN

Blk 5 lot 20 Rainforest Estate Homes
Barangay. Langkiwa Biñan Laguna

CONTACT

markjoshuapunzalan2@gmail.com

EDUCATIONAL ATTAINMENT

Senior High School

Lyceum Of Alabang (2020-2022)

Km.30 National Road, Tunasan Muntinlupa City

Junior High School

Sampaguita Village National Highschool (2016-2020)

Molave st. Barangay Calendola San Pedro, Laguna

Elementary

San Pedro Central Elementary School

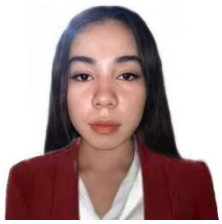
Luna st. Barangay Poblacion San Pedro, Laguna

TRIXZY L. RAGO

Neem St. St. Joseph 10 Brgy. Langgam San Pedro, Laguna

Contact # 09686805437

Email trixzyrago@gmail.com



Birthday February 15, 2004

Place of birth Luisiana, Laguna

Achievement's

Academic Awardee (2021)

Academic Awardee (2022)

EDUCATIONAL ATTAINMENT

Senior high school

Lyceum of Alabang (2020-2022)

Km. 30 National Road. Tunasan Muntinlupa

Junior high school

San Pedro Relocation Center National High School

Main Campus (2016-2020)

Brgy. Langgam San Perdro Laguna

Elementary

Langgam Elementary School (2010-2016)

Brgy. Langgam San Perdro Laguna

EMMANUEL P. SANTOS

Block 7 Lot 6 Rosal Street Elvinda Village,

San Pedro
laguna

Contact # 09636907225

santosemss9@gmail.com

EDUCATIONAL ATTAINMENT

Senior High School

Lyceum Of Alabang (2020-2022)

Km.30 National Road Tunasan, Muntinlupa City

Junior High School

Pacita Complex National High School (2016-2020)

Sampaguita Street, Pacita Complex I, San Vicente, San Pedro, Laguna

Elementary School

San Pedro Central Elementary School (2009-2016)

Luna Street, Poblacion, San Pedro, Laguna

DESERRE C. VINLUAN

501 Luna Extension, Brgy. San Roque, City of San Pedro, Laguna, 4023 Philippines

09326735636

deserre.mia@gmail.com

PERSONAL DATA

Birth Date	:	October 19, 2003
Birth Place	:	San Pedro, Laguna
Age	:	18
Gender	:	Female
Height	:	5 feet and 6 inches
Weight	:	50 kg

Achievements:

With Honors (2020-2021)

Academic Awardee (2020-2021)

Academic Awardee (2014-2015)

Academic Awardee (2010-2011)

Salutatorian (2009-2010)

EDUCATIONAL ATTAINMENT

Secondary

Lyceum of Alabang Inc.
Km 30 National Rd. Tunasan, Muntinlupa City (2020-2022)

Cuyab Integrated National High School
Quezon St. Brgy. Cuyab, City of San Pedro, Laguna (2018-2020)

Pacita Complex National High School
San Pedro, Laguna (2016-2018)

Primary

San Roque Elementary School
San Roque, San Pedro, Laguna (2010-2016)

Day Care Center
San Roque, San Pedro, Laguna (2009-2010)

Yumol, Angelo Gabriel Paduga

Blk9, Lot19 Xavier Drive St. Villagio Prima Casa,
Brgy. Platero, City of Biñan, Laguna

Contact # 09606873098

Email: yumolangelo162003@gmail.com

Birthday: October 16, 2003

Place of Birth: Paul Jesus Lying-in Clinic, Sucat, Parañaque

Achievements

Academic Achiever (2020-2021)

With Honor (2020-2021)

1st Honor since Grade 1 to 8

EDUCATIONAL ATTAINMENT

Senior High School

Lyceum of Alabang (2020-2022)

Km. 30 National Road. Tunasan, Muntinlupa City

Junior High School

Muntinlupa National High School – Sucat Annex (2019-2020)

F353+486, Dir. A. Bunye, Sucat, Muntinlupa, Kalakhang Maynila

Jacobo Z. Gonzales Memorial National High School (2016-2019)

83PQ+HPW, Biñan, Laguna

Elementary Schools

Cupang Elementary School

C2JX+5R4, Manuel L. Quezon, Cupang, Muntinlupa City, 63017 Metro Manila

Sucat Elementary School

F343+X6C, Dir. A. Bunye, Sucat, Muntinlupa, Kalakhang Manila