POLITEKNIK

SULTAN SALAHUDDIN ABDUL AZIZ SHAH

DESIGN A FINGERS EXERGAME TO IMPROVE FINE MOTOR SKILL FOR AUTISTIC CHILDREN USING ARDUINO

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JABATAN KEJURUTERAAN ELEKTRIK

SESI 1:2022/2023

ZYU SMART TASBIH SOUND DETECTED

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This report submitted to the Electrical Engineering Department in
fulfillment of the requirement for a Diploma in Electrical Engineering

JABATAN KEJURUTERAAN ELEKTRIK

SESI 1:2022/2023

CONFIRMATION OF THE PROJECT

The project report titled "Design a Fingers Exergame to Improve Fine Motor Skill for Autistic Children Using Arduino" has been submitted, reviewed and verified as a fulfills the conditions and requirements of the Project Writing as stipulated

Checked by:

Supervisor's name   : Nik Rabiahtul Mujahadah bt Abd Rahman

Supervisor's signature:

Date   :

Verified by:

Project Coordinator name :

Signature of Coordinator :

Date   :

"I acknowledge this work is my own work except the excerpts I have already explained to our source"

1. Signature   :

Name   : **Muhammad Arash Bin Abdullah**

Registration Number : **08DEP20F1053**

Date   :

DECLARATION OF ORIGINALITY AND OWNERSHIP

TITLE   :   ZYU SMART TASBIH SOUND DETECTED

SESSION: SESI 1 2021/2022

1. I,   **1. Muhammad Arash Bin Abdullah 08DEP20F1053**

    is a final year student of **Diploma in Electrical Engineering, Department of Electrical, Politeknik Sultan Salahuddin Abdul Aziz Shah**, which is located at **Persiaran Usahawan, 40150 Shah Alam, Selangor**. (Hereinafter referred to as 'the Polytechnic').

2. I acknowledge that 'The Project above' and the intellectual property therein is the result of our original creation /creations without taking or impersonating any intellectual property from the other parties.

3. I agree to release the 'Project' intellectual property to 'The Polytechnics' to meet the requirements for awarding the **Diploma in Electrical Engineering** to me.

Made and in truth that is recognized by;

    a) **Muhammad Arash Bin Abdullah**   )   .
(Identification card No: - 020519101325)   ...…………………………
)   **Muhammad Arash Bin Abdullah**

In front of me, **Nik Rabiahtul Mujahadah bt Abd Rahman** (820404115378)
As a project supervisor, on the date:)   ...………………
)   **Nik Rabiahtul Mujahadah bt Abd Rahman**

ACKNOWLEDGEMENTS

I have taken efforts in this Project. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them. I am highly indebted to (Name of your Organization Guide) for their guidance and constant supervision as well as for providing necessary information regarding the Project & also for their support in completing the Project.

I would like to express my gratitude towards my parents & member of (Organization Name) for their kind co-operation and encouragement which help me in completion of this Project. I would like to express my special gratitude and thanks to industry persons for giving me such attention and time.

My thanks and appreciations also go to my colleague in developing the Project and people who have willingly helped me out with their abilities.

ABSTRACT

Every Muslim is circumcised to recite dhikr after praying. Every Muslim should learn and practice dhikr after prayers, especially at a young age. this often happens to Muslims who have no hands either OKU or the elderly.when creating a tool that can help them to recite which where the display shows the number of zikr and sound sensor to detect when the voice has been assumed.Users are informed of his progress doing zikr after prayer. The first voice sensor can detect the voice without having to touch it. the sound sensor is added to identify certain stages of the zikr cycle and update the displayaccordingly. Electrical and electronic technology namely sound sensor is used in this research.This subsystem is connected using an Arduino Uno. The Arduino was chosen as the main one microcontroller for this system because of its ease of use and ability to read and run Programming languages.It is also a simple platform suitable for various IT projects.

Keywords: ZYU SMART TASBIH SOUND DETECTED, Arduino UNO, sound sensor.

Table of Contents

CHAPTER 1

1.1 Introduction

In this era of globalization, where there is a lot of strong competition, efficiency in production is widely recognized as the key to success. Product production rate is referred to as "production efficiency." It is possible to reduce the size of production equipment and lines. Product quality is being improved while material costs are being reduced. There are fewer rejections, resulting in reduced stop times in production equipment, as well as low -cost manufacturing equipment. With this in mind, the project is in the final stages of its development, from which the industry will reap greater benefits.

By focusing on the rosary, which is conventional in nature objects used to count prayers, I aim to explore how and why these objects are used and allocated by consumers in carrying out their daily lives. This object which has been used for about 5000 years by most people religion evolved into a digital counter, in the end decades in the context of Turkish Islam. I focus on this the evolution of rosaries to investigate the use and use of objects, by parsing meaning this object, in a sociocultural context this object and its use are shaped, why and how there are different types of these products, what does consuming this object imply, how evolution from rosaries to digital counters should have influenced the interaction between users and objects and how to practice prayer orderly in daily life.

Smart 'Tasbih' Sound Detected is a tool developed for our community, including all generations. The outputs and inputs of this part are connected using an Arduino. This device is used to detect voices for disabled users who lack limbs such as hands. This rosary consists of an Arduino UNO, sound sensor and LCD display.

'Tasbih' is often used in performing 'ibadah'. It can help users to perform 'ibadah' more easily. The sound sensor system that will detect the sound goes to the UNO Arduino and then gives an output to the LCD display to show the value.

1.2   Background Research

In the matter of furuk, let us not be easily rude and cruel to others in matters of wrongdoing that we do not agree with. For example, on the issue of remembrance with the pronunciation of Hu (He) used by Sufis, it should be noted that the pronunciation from a grammatical point of view is included in the chapter on personal pronouns and it in the side of Sufis refers to the essence of Allah SWT.

Therefore, when we hear people recite dhikr with the words of Hu, then what is referred to is none other than Allah SWT alone.

Putting aside the scholars' disagreement about it, the act of ridiculing a person who recites the recitation is like asking with a sad emotional signal: 'Huhu ...' for example, whether consciously or not is an act that is feared to ridicule Allah SWT and people who do it must ask Forgive Him.

Remembrance of Allah SWT with the utterance, although it is not warid practice from the Prophet SAW, it is an ijtihad muktabar based on the evidence of the Qur'an which is quite a lot and the utterance is often found to accompany His nature. Among them, the words of Allah: "And your Lord is the One God, there is no god (who has the right to be worshiped) but He, the Most Gracious, the Most Merciful." Surah al-Baqarah: 163

His word again: "He is my Lord, there is no god (who has the right to be worshiped) but He. To Him I submit and to Him is my return. Surah ar-Ra'd: 30

Also His words: "Say: He is the One and Only God." Surah al-An'am: 19

It should be understood, something that is not found in the sunnah of the Prophet SAW should be referred to the ijtihad of those who are skilled and able to draw inferences from the Qur'an and sunnah, as the famous method taught by the Prophet SAW to Muaz bin Jabal RA.

The great figure of tafsir, Imam Fakhruddin ar-Razi (died 606H) in his tafsir, Mafatih al-Ghaib stated, there are three names that result for Allah SWT due to pronouns, namely Ana (I), Anta (You) and Hu (He)).

Then only the pronunciation of Hu (He) is used by Sufis as part of their dhikr practice because it has various secrets and spiritual effects that are quite extraordinary. In his tafsir, Imam Fakhruddin ar-Razi listed 11 secrets and benefits of the remembrance. Among other things, it shows the very low self -esteem of the person who mentions it. It is also a pledge that other than Allah SWT is impermanent and perishable. This remembrance is able to bring a person to really know Allah and only remember Him alone without mixing with other memories.

1.3   Problem Statement

Nowdays, most of 'tasbih' are in the regular and manual forms.So, i came out with the ideas that can improve it.With this, i created a rosary that can detect voices.

So as we know that The former 'tasbih' is not suitable for OKU users who lack limbs such as hands.This is because OKU users who lack limbs such as hands cannot press the rosary.

Beside, the old tasbih is difficult to remember the value we 'zikir'.This is because the old stone rosary is not necessarily accurate in value. For example, 33,99 and so on.

So with this product in market maybe can help disabled users who lack limbs such as hands can perform worship easily.

1.4   Research Objectives

- To design a rosary that can detect the voice and display the volume spoken.

- To construct a system that can count the number of dhikr while a person is performing ibadah by using LCD display.

1.5   Scope of Research

This project focuses on those who easily forget the number of dhikr and on OKU users who lack limbs such as hands.

1.6 PROJECT SIGNIFICANCE

During project implementation, every aspect of the project or process needs to be known sure to ensure the project is completed as it has been targeted. Here is the stage of the project journey outlined.

• Easy to use

• Work perfectly

• Portability

1.7 Chapter Summary

Chapter one is an introductory chapter that contains background and motivation, problem statement, research objective, scope of work and thesis overview. This chapter is written to provide a basic idea and basic understanding of the research field.
It is also explained in general about the problem of the rosary which is always not fixed in value.

CHAPTER 2: LITERATURE REVIEW

The term "literature" means a research article that is referred to understand and study the research problem. The literature review is used to provide the context of the study by looking at the research that has been conducted in the field of research and not just summarizing the research conducted by other researchers. The contents of this chapter may contain a brief introduction to the subject of the study, concept or theory, previous studies related to the field of study and summary of this chapter.

2.1 INTRODUCTION

A literature review also focuses on the knowledge and ideas established on a topic as well as their strengths and weakness. Nowadays, technology is getting better and better to replacing the traditional system to speed up the process by introducing the computerized system. Before I start this "ZYU SMART TASBIH SOUND DETECTED" project, I have to analysis and choose the need of the project such as program and circuits that I should use for this project. Besides, the physical prototype also needs to be tested before I make the real one. This is a safe process to avoid the damages of this project.

2.2 LITERATURE REVIEW TOPIC 1

Prayer beads are the row of beads on a string that are used to count or accompany prayers. People pray to unite with the God (Kelly, 2004), to ask for remedy (Kelly 2004), or to achieve a spiritual illumination (Iqbal, 1930). Neither the reason(s) why people started to count their prayers nor an exact history of prayer beads are known.

First, about 5000 years ago Hindus were known to use pebbles in a pouch to count their prayers. (Sarıcı, 2008) Prayer beads, similar to their contemporary form of beads lined up on a string, date back to before 7th century A.D. (Yıldırım, 1971) In every religion and culture there are different numbers of prayers devoted to God each day. Accordingly, the number of beads on a prayer bead varies.

For Islam, there are two sorts of worshipping practices in which prayers are counted or accompanied by prayer beads: Salat and Dhikr2 . As stated in the Qur"an these are incumbent on Muslims and they are important for sins to be forgiven. (Qur"an trans by Haleem, 2005; Yıldırım, 1971). 2 Dhikr is allusion in the context of Islam These are performed in various numbers depending on the sect, so different prayer beads or counters are used to accompany these practices. The following part on the recent history of prayer beads is structured based on the data gathered through the field study, and visuals are the photos of the products that are gathered and documented during the field study.

After each salat, it was advised by the Prophet Muhammad to recite 33 times Subhanallah (Glory be to Allah), 33 times Alhamdulillah (Praise be to Allah) and 33 times Allahuakhbar (Allah is great). (Yıldırım, 1971) devoted Muslims in Turkey use „salat tasbih"3 which is used to count 33 times 3 prayers after each salat. Salat tasbih consists of 99 beads, that has an indicator bead after every 33 to mark the changing prayer. (Figure1) Some tarikas 4 within Islam, pray the first prayer 34 times so their tasbihs are arranged accordingly, having an indicator bead after 34 beads, and in this case their tasbih consists of 100 beads. (Sarıcı, 2008)

Dhikr, which is a kind of prayer, is a remembrance of Allah (Kassam, 2006). Dhikr of Allah, either by reciting one of His qualities or His name only, or His Messenger, is a devotional act that reinforces one"s bonds with Allah, is a communication with Allah, is appraisal to Him, as well as emphasis of His glory (Kassam, 2006; Yıldırım, 1971).

2.3.1 Arduino Uno

Arduino UNO is a low-cost, flexible, and easy-to-use programmable open-source microcontroller board that can be integrated into a variety of electronic projects. This board can be interfaced with other Arduino boards, Arduino shields, Raspberry Pi boards and can control relays, LEDs, servos, and motors as an output.

2.3.2 Sound Sensor

The sound sensor is one type of module used to notice the sound. Generally, this module is used to detect the intensity of sound. The applications of this module mainly include switch, security, as well as monitoring.

2.3.3 LCD Display 20x4

A 20x4 LCD means it can display 20 characters per line and there are 4 such lines. In this LCD each character is displayed in 5x7 pixel matrix. This LCD has two registers, namely, Command and Data. This is standard HD44780 controller LCD.

2.4 SUMMARY

The goal of this chapter's discussion is to describe the sensor's perspective has been used in previous research or projects, as well as to classify the extent of this project related to previous studies and theories. Furthermore, this chapter will show the idea and the concepts used to address the issue. Theoretical considerations are critical while conducting any type of study.As a result of this chapter, we have selected sound sensors for detection voice. Due to its low power consumption, it can be widely useda network of electronic devices, including computers, telephones and PDAs. Furthermore, the best aspect about this sensor is thatthat it is readily available at any electrical store and inexpensive.

CHAPTER 3: METHODOLOGY

3.1 INTRODUCTION

Methodology is a method and technique for designing, collection and analyzing data to produce evidence that can support a research. Methodology describes how a problem being research can be solved with the best method. The methodology aims to help you better the application of the method by describing the process of the research.

Methodologies can also be a reference to a group the implementation of the project that they want to do. A methodology is also required to update the progress the project. With the methodology, implementation of the project will be more organized and can be complete in a timely manner. Project supervisor will also be aware of the work done by the students in completing the project.

In this methodology, there is a more in-depth description of the use of material used to carry out project. Also included are the operating procedures of the work and the procedures used to carry out the project. This methodology is important for every project implementation or improvement of an existing project in the market.

3.2 PROJECT DESIGN AND OVERVIEW

This project is divided into two parts namely hardware and software.Tasbih by using sound sensor and arduino uno main controller.

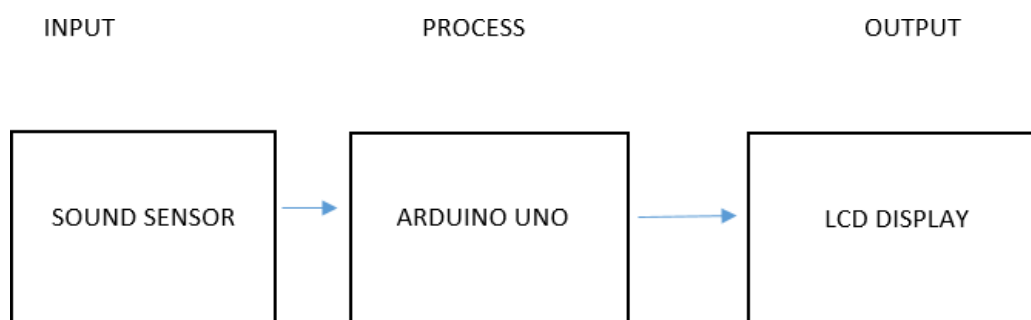### 3.2.1 BLOCK DIAGRAM OF THE PROJECT

Figure 3.1: block diagram

3.2.3 PROJECT DESCRIPTION

detect, which is always alive during dhikr, uses a sound sensor (sensor that detects voice) to calculate how many dhikr the user recites.On the card, the sensor will display an indicator to show the number of dhikr to on the lit screen so that it can show the number of dhikr of the user.

3.3 PROJECT HARDWARE
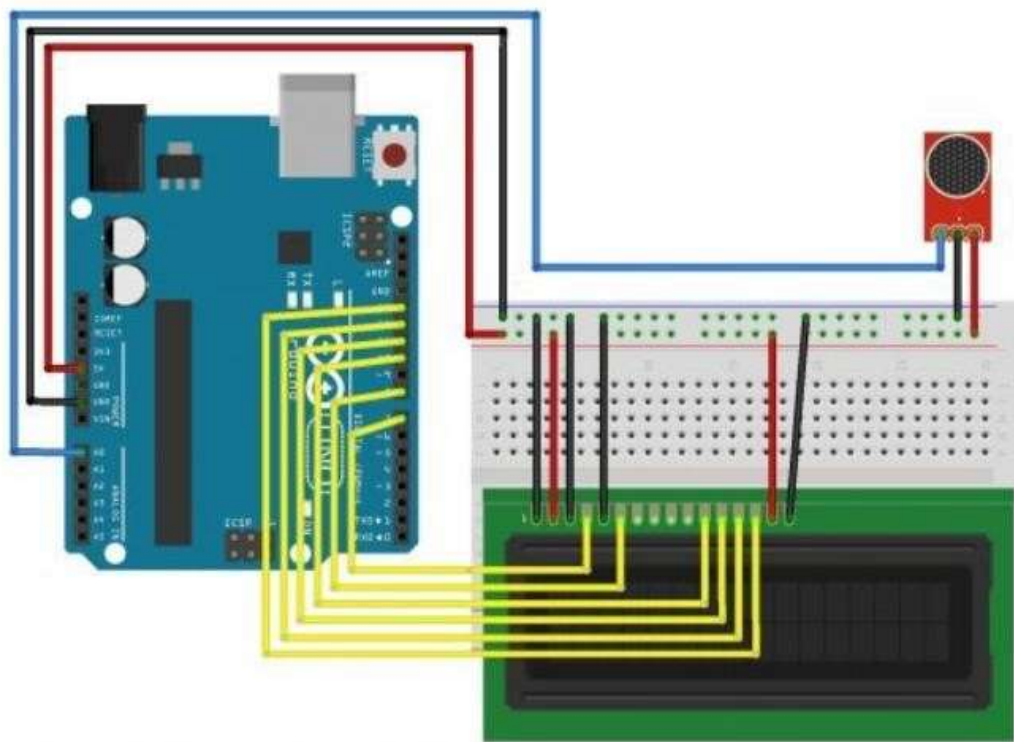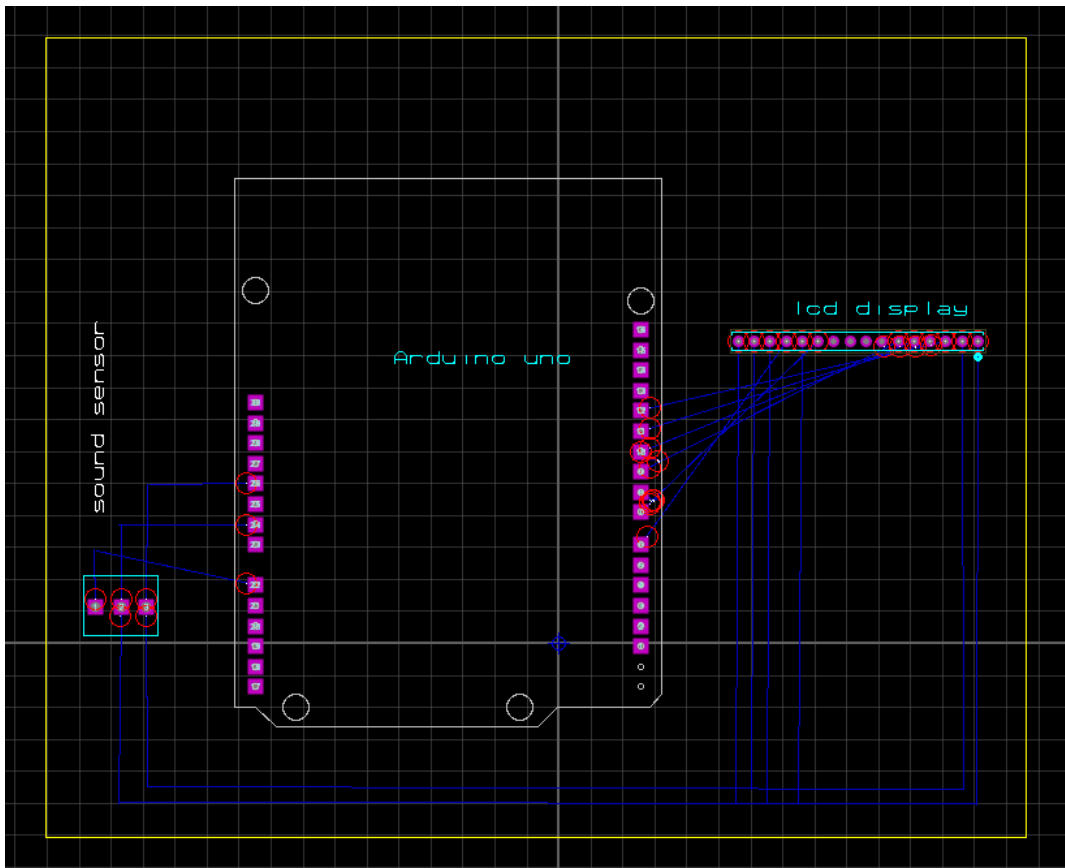
3.3.2 DESCRIPTION OF MAIN COMPONENT

3.3.2.1 Arduino UNO

Arduino UNO is a microcontroller board based on the ATmega328P. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started. You can tinker with your UNO without worrying too much about doing something wrong, worst case scenario you can replace the chip for a few dollars and start over again.(markespace)(2017)[14]

Figure 3.7: Arduino UNO R3

3.3.2.2 Sound Sensor

The sound sensor is one type of module used to notice the sound. Generally, this module is used to detect the intensity of sound. The applications of this module mainly include switch, security, as well as monitoring. The accuracy of this sensor can be changed for the ease of usage.This sensor employs a microphone to provide input to buffer, peak detector and an amplifier. This sensor notices a sound, & processes an o/p voltage signal to a microcontroller. After that, it executes required processing.This sensor is capable to determine noise levels within DB's or decibels at 3 kHz 6 kHz frequencies approximately wherever the human ear is sensitive. In smartphones, there is an android application namely decibel meter used to measure the sound level.
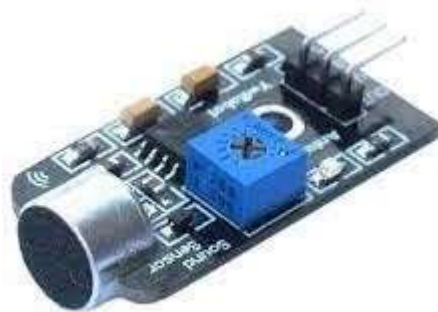

Figure 3.8: Sound Sensor

3.3.2.3 LCD Display 20x4

A 20x4 LCD means it can display 20 characters per line and there are 4 such lines. In this LCD each character is displayed in 5x7 pixel matrix. This LCD has two registers, namely, Command and Data. This is standard HD44780 controller LCD.

3.4 PROJECT SOFTWARE

Figure 3.8: Arduino IDE

Arduino IDE is a software that used to write and upload programs to Arduino compatible boards, but also, with the help of 3rd party cores, other vendor development boards. The Arduino Integrated Development Environment - or Arduino Software (IDE) - contains a text editor for writing code, a message area, a text console, a toolbar with buttons for common functions and a series of menus. It connects to the Arduino and Genuino hardware to upload programs and communicate with them. (The Arduino Duemilanove) ("2009")[15]

Figure 3.9: Tinkecad platform

Tinkercad is a free-of-charge, online 3D modeling program that runs in a web browser. Since it became available in 2011 it has become a popular platform for creating models for 3D printing as well as an entry-level introduction to constructive solid geometry in schools.

Figure 4.0: Proteus Design Suite

The Proteus Design Suite is a proprietary software tool suite used primarily for electronic design automation. The software is used mainly by electronic design engineers and technicians to create schematics and electronic prints for manufacturing printed circuit boards. The Proteus Design Suite is a Windows application for schematic capture, simulation, and PCB (Printed Circuit Board) layout design. It can be purchased in many configurations, depending on the size of designs being produced and the requirements for microcontroller simulation. All PCB Design products include an autorouter and basic mixed mode SPICE simulation capabilities.

3.4.1 FLOWCHART OF THE SYSTEM
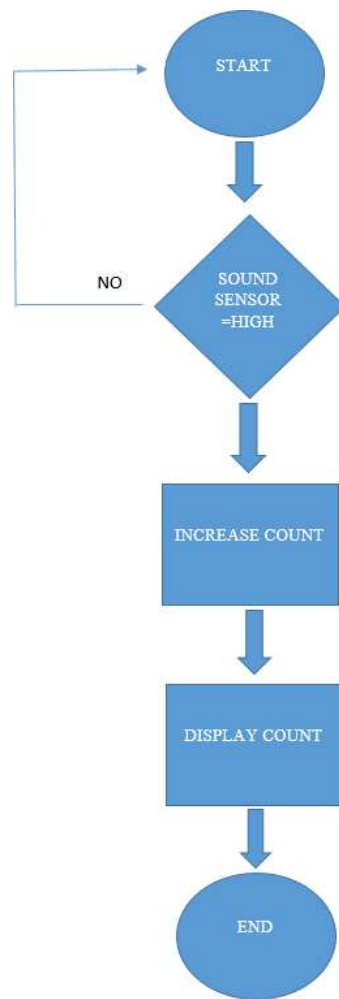
Figure 3.10: flowchart of the system

3.4.2 DESCRIPTION OF FLOWCHART

Based on the diagram above, the flow chart shows how the software works. The system will start,if the infrared sensor detects the sound, otherwise it will return to the start and start it again. Next, if the sound sensor detects a voice it will send information to a microcontroller namely the Arduino UNO to process the data coming from the sensor. The Arduino UNO will process the data based on the programming I compiled into microcontroller. After the data is processed, the Arduino will send the information to the LCD display to show the counter that has been detected by the sound sensor.

CHAPTER 4: CONCLUSION AND RECOMMENDATION

4.1 Introduction

As for the completion of this project, Chapter 4 will discuss about the analysis and outcomes of the continuing project. The project has two parts that need to be finished, to put it simply.

4.2 Results and Analysis

Adakah anda selalu berzikir menggunakan tasbih?

16 responses

- Ya
- Tidak
- Tidak Pasti

37.5%
12.5%
50%
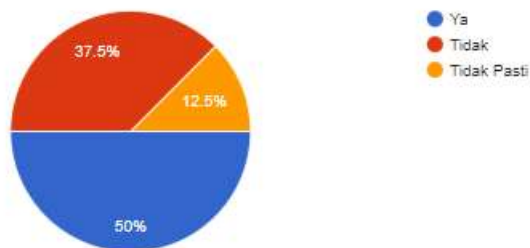
Adakah anda pernah berhadapan dengan masalah terlupa bilangan zikir ketika berzikir?

16 responses

- Ya
- Tidak
- Mungkin

18.8%
81.3%
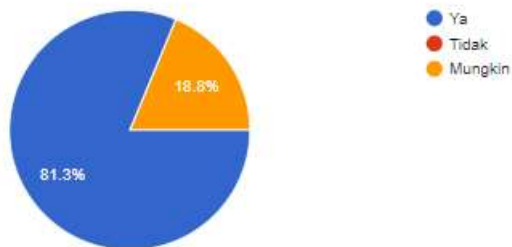
Sekiranya tasbih digital (Smart tasbih sound sensor) dibangunkan, adakah alat tersebut dapat membantu anda dan juga (OKU) untuk melakukan ibadah zikir?

16 responses

- Ya
- Tidak

100%
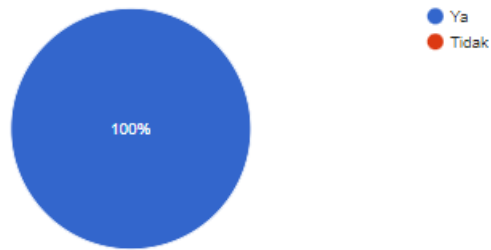
According to the bar chart, 16 people were able to answer the survey or question. 50% of the 100% "people always chant using the rosary" and even 37.5% "do not use the rosary", then there are also 12.5% "not sure about using the rosary". In addition, 81.3% of the 16 respondents have been faced with the problem of forgetting the number of dhikr when chanting but 18.8% may have forgotten the number of dhikr. In addition, 100% of the 16respondents digital rosary (Smart rosary sound sensor) agreed to be developed to help people and also (OKU) to perform dhikr worship. Finally, 100% of them all will choose (Smart rosary sound sensor) because a rosary like this will be more confident in the value of dhikr when using the device.

4.3 Results

The results in this project are 100% complete. The i2c LCD Serial Interface can be displayed because the previous problem is solved. The problem is that the programming has not been completed because the sound sensor cannot send output as a counter, instead it only sends output detecting loud or low sound.

Now, all problems are solved..The Arduino UNO will read the output from the sound sensor and will display the value of the remembrance through the LCD display that we have connected to the Arduino UNO.

4.3 Discussion

This rosary can certainly help and make it easier for users to remember the value of their dhikr using this rosary will help people with disabilities (OKU) because it can detect sound and then it displays the amount of zikr they say.

4.4 Chapter Summary

There are two parts in this chapter which are the results and analysis of the rosary by using the sound sensor that works as intended. The second part is a discussion about how the sound sensor with Arduino Uno works that way with simple and concise information.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

To summarize the entire record of results, the conclusion (Zyu smart rosary sound detected) must be tested and measured to fully demonstrate functionality of this project and to analyze the improvement of this project to maximize potential.

5.2 Conclusion

In conclusion, this project was almost successful because we were able to create the rosary but there was no sound sensor. Although there are slight changes here and there, we believe that the rosary we created can help and make it easier for users to perform worship.

5.3 Future Recommendations

For further suggested improvements, the system may include more features and functionality, such as detecting sound that sends output to Arduino Uno and Arduino Uno sends output to LCD display. In addition, a voice speaker may be added to make it easier for users to recite zikr while listening and following the voice of zikr from the video. By continuing this research, it may give the researcher the following new and innovative ideas to make new machinery with new materials and tools in the most effective way.

CHAPTER 6: PROJECT MANAGEMENT AND COSTING

6.1 Introduction

In chapter 6, it will explain about how the management of the project also the expense being used to succeed the project. To depict all the activities involved in making this project successful in the management section, a Gantt chart will be provided. The costing of project expectation at start is less than RM1000.

6.2 Gantt Chart and Activities of the Project

	Task(Plan)
	Task(Actual)

GANTT CHART

PROJECT TITLE : SMART TASBIH SOUND DETECTED

Course	NO	Task Name	Implementation	Duration (Days)	Cost (RM)	Date	Week 1 (20.08.2022 –26.08.2022)	Week 2 (27.08.2022 –02.09.2022)	Week 3 (03.09.2022 –09.09.2022)	Week 4 (10.09.2022 –16.09.2022)	Week 5 (17.09.2022 –23.09.2022)	Week 6 (24.09.2022 –30.09.2022)	Week 7 (01.10.2022 –07.10.2022)	Week 8 (08.10.2022 –14.10.2022)	Week 9 (15.10.2022 –21.10.2022)	Week 10 (29.10.2022 –04.11.2022)	Week 11 (05.11.2022 –11.11.2022)	Week 12 (12.11.2022 –18.11.2022)	Week 13 (19.11.2022 –25.11.2022)	Week 14 (26.11.2022 –02.12.2022)
DGS0082 PROJECT 1	1	PROJECT BRIEFING	Plan	1																
			Actual	1																
	2	MEETING WITH SUPERVISOR	Plan	14																
			Actual	4																
	3	PROJECT DESIGN	Plan	10																
			Actual	10																
	4	PROJECT CODING	Plan	9																
			Actual	8																
	5	SOLDERING	Plan	4																
			Actual	14																
	6	LOGBOOK	Plan	14																
			Actual	9																
	7	ISOLMS	Plan	14																
			Actual	9																
	8	HARDWARE PROJECT COMPLETE	Plan	4																
			Actual																	
	9	SOFTWARE PROJECT COMPLETE	Plan	4																
			Actual	6																
	10	QNA PROJECT	Plan	7																
			Actual																	
	11	GOOGLE FORM	Plan	4																
			Actual																	
	12	FINAL PROPOSAL	Plan	5																
			Actual																	
	13	PROJECT PRESENTATION	Plan	2																
			Actual																	
	14	END	Plan	1																
			Actual																	

6.3 Cost and Budgeting

This project involves the cost of purchasing components and materials throughout its implementation. components involving cost are hardware Arduino, sound sensor and LCD display. All of these components are purchased through online purchase methods to make it easier as well as save on costs.

The overall gross budget estimate in the implementation of this project is RM 103.50 and other expenses is at RM 150 as shown in Table 1 According to this budget cost, this project is can be considered as a less costly project compared to other projects that can cost over a thousand ringgit. The cost of the project is also in line with one of the key features of a good project developer that is low cost but have a high quality project.

Table 1.6.1: List of Components and Materials

No.	Component and materials	The unit price	Quantity	Total
1	Arduino UNO set /Mega 2560 RBT	RM 90	1	RM 90
2	Sound sensor	RM 3.50	1	RM 3.50
8	Other materials	RM 10.00	-	RM 10.00
			Total :	RM 103.50
	List of other costing			
1	Transportation			-
2	Postage			RM35
3	Craft Work			RM 25
4	Internet			RM 40
5	Application			RM 50
			Total :	RM 150
			Overall total	RM 253.50

6.4 Chapter Summary

The conclusion for project costing management of "zyu Smart rosary Sound Detected"
is the cost is still within budget and less expensive than estimated. This resulted in projects with low costs but great quality. Although RM1000 is the maximum anticipated cost, only RM253.50 is actually required to complete this project successfully

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APPENDICES

APPENDIX A-PROGRAMMING

```cpp
#include <LiquidCrystal.h>
LiquidCrystal lcd(7,8,10,11,12,13);

int num_Measure = 128 ;
int pinSignal = A0;
 long Sound_signal;
long sum = 0 ;
long level = 0 ;

void setup ()
{
 pinMode (pinSignal, INPUT);
 Serial.begin (9600);
 lcd.begin(16,2);
}

void loop ()
{
 // Performs 128 signal readings
 for ( int i = 0 ; i <num_Measure; i ++)
 {
   sum = 0 ;
   sum =sum + Sound_signal;
 }

 level = sum / num_Measure;
 Serial.print("Ucapan: ");
 lcd.print("Ucapan= ");
 Serial.println (level-1);
 lcd.print(level=1);
 if(level=1)
 {
  lcd.setCursor(0,2);
  lcd.print("Intensity= Low");
 }
 sum = 0 ;
 delay(200);
 lcd.clear();
     }
```
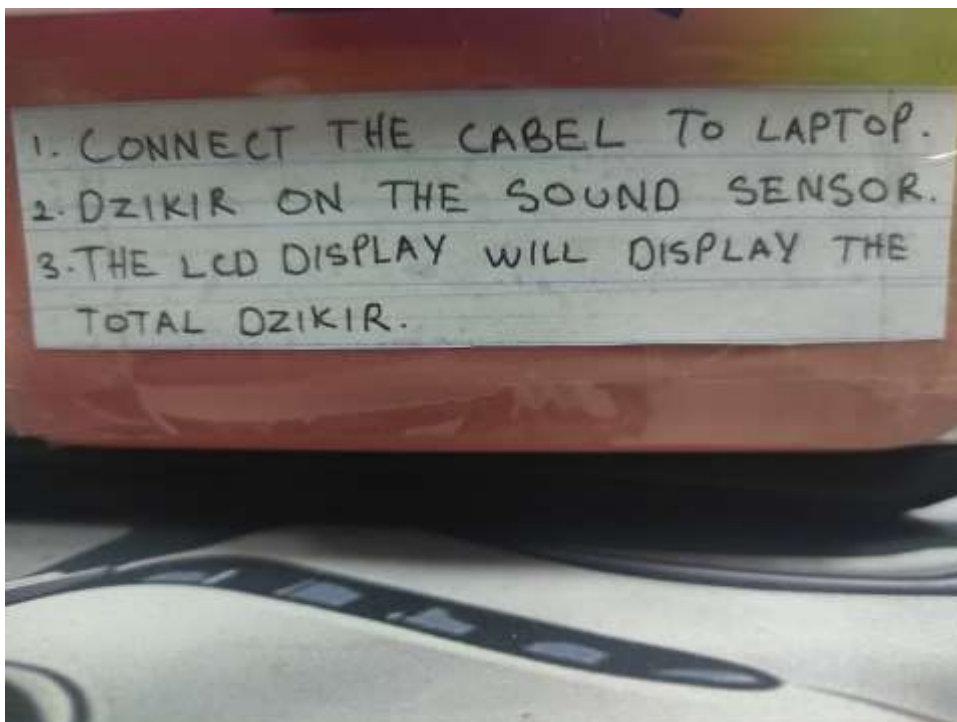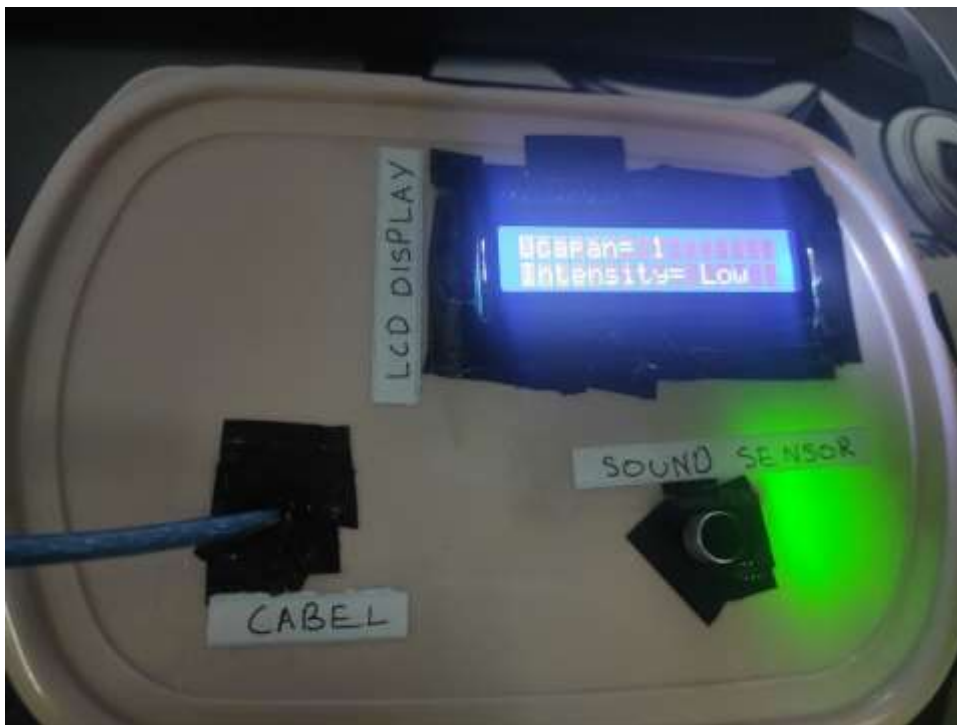
APPENDIX B-PROJECTMANUAL/PRODUCT CATALOGUE

1.Connect the cable to laptop.
2.Dzikir on the sound sensor.
3.The LCD display will display the total dzikir.