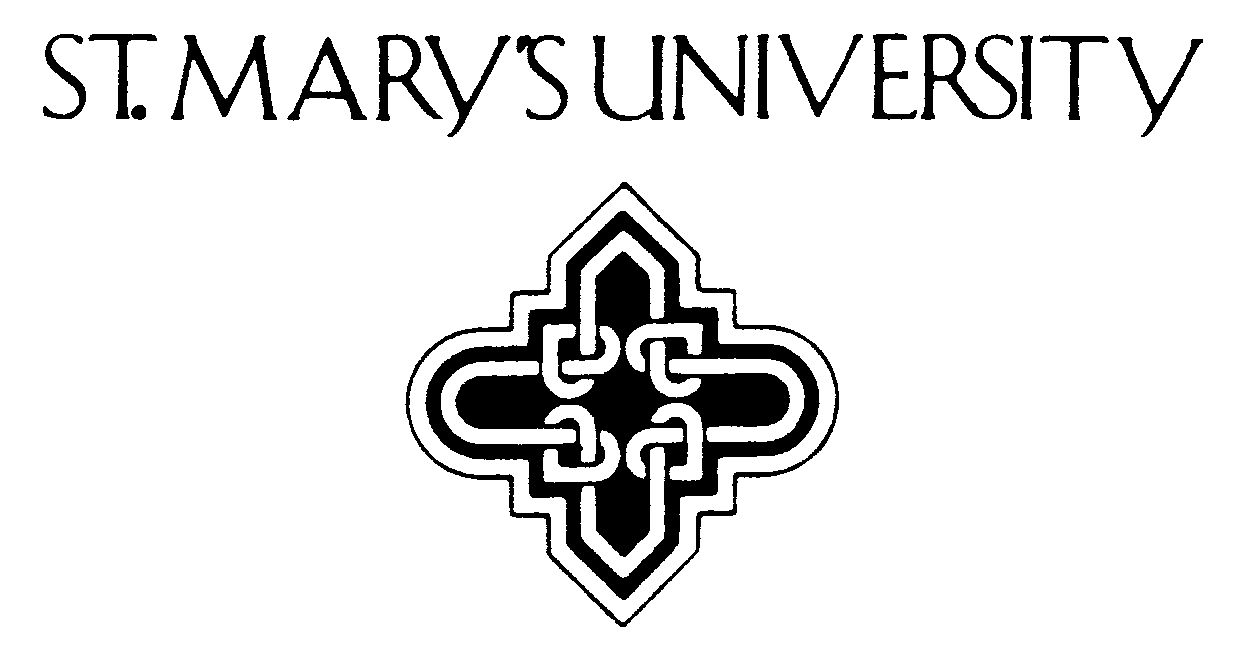
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School of Science, Engineering and Technology

Department of Engineering

SKORE

(Smart Keyboard Operated by Robotic Educator)

By

Ashkan Aminian, Zachary Bosker,

and Eduardo Davalos Anaya

Senior Design Project Presented to the Department of Engineering

In Partial Fulfillment of the Requirements

For the Degree of

Bachelor of Science

In

ELECTRICAL ENGINEERING

San Antonio, Texas

April 2019

Supervising Adviser:

Dr. Bahman Rezaie

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PROFESSOR OF ELECTRICAL ENGINEERING

**abstract**

The abstract will precede the remainder of the document. It will start on the page immediately following the title page. The abstract should constitute one page maximum length with a recommended 0.5-0.75 page length. Margins of the entire document will be 1” all around (top, bottom, left, and right), with the first page using a different header and footer than the rest. The title page will not contain any page numbers of any kind; numbering of pages will start on this page—the abstract. Abstract will be Page “i,” Acknowledgements will be “ii,” Table of Contents will be “iii,” and List of Figures will be “iv.” These roman numerals will change depending on how lengthy each part is. Page numbers/letters will be placed on the center of the footer (no special formatting).

When starting a new paragraph, there should be a 0.5” indentation with the hanging indent set to 0”. All paragraphs should be justified and double-spaced. Font will be Times New Roman-12pt. Section Headings will be Times New Roman-12pt-All Caps and Left-Justified. There should be a 2-space interval between the Section Heading and the Body of the sections.

**aCKNOWLEDGEMENTS**

The acknowledgements section will include any personal messages you would like to say to those who have helped, inspired, or guided you through this project. This page is usually less than a single page, but should contain the same formatting as the abstract. If acknowledging multiple people, these names and their corresponding messages should be in paragraph form. This is the only “personal” portion of the report, so it is suggested and recommended to implement into your final report.

This page can also contain multiple paragraphs; Roman numeral page number should be on the footer-centered, incremented from the page number of the previous page.

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**INTRODUCTION**

The body of the introduction and all proceeding sections will be similar to the abstract. There will be a triple-space after each section heading and the font will be Times New Roman, 12pt. Page numbers on the bottom have changed to 1, 2, 3, etc., as opposed to the Roman numerals used in the previous sections.

All text will be double-spaced with a 0.5” first-line indentation with no hanging indent (0”). The title, as shown above, will include the number used in the Table of Contents. Each subsection used in the Table of Contents will also be displayed during the report in a similar fashion.

**1.1. PROBLEM STATEMENT**

Text begins here. Before each sub-section begins, there should be a 4-space interval between the preceding text and the section heading. If there is a new “Chapter Heading,” then a page break should be added (Insert-Break-Page Break).

**1.2. PROPOSED SOLUTION**

Text begins here. Insert Page Break to go to next chapter. When using a figure, make sure to center the figure on the page horizontally (with a single space separating the top of the figure from the preceding text and a single space between the figure label and the remainder of the text. Directly underneath the figure, the following format should be used to label the figure; for example, “*Figure 1-1: Bach Stradivarius Trumpet*.” The following is an example of a figured embedded within the text:



*Figure 1-1: Bach Stradivarius Trumpet*

The text will continue (after a single space interval) with a first-line indent of 0.5” and no hanging indent. When going to the next chapter simply create a page break and follow the same formatting.

**OVERVIEW OF SYSTEM**

Text starts here.

**2.1. MAIN HARDWARE MODULES**

Text starts here.

**2.1.1. SOLENOID (for example)**

Text starts here.

**2.1.2. SERVO (for example)**

Text starts here.

**REFERENCES**

[1] Dictionary of Electronics 3rd ed. England: Clays Ltd., 1998.

[2] “Mission to the Bolivian Amazon: MagPlane.” Sep. 2002. Mar. 2005

< http://www.aeroconcepts.com/IturraldeExpedition/DataSystem.htm>

[3] Southwest Research 2004 Annual Report. San Antonio: Southwest Research Institute, 2004.

Appendix A:

Literature Search

Appendix B:

Source Code

**9.B.i. HARDWARE CONTROL**

#include reg9s12.h

ORG $1000

MOVB #$FF,DDRA ; configure port A for output

MOVB #$FF,DDRB ; configure port B for output

MOVB #$FF,DDRP

MOVB #$FF,PTP

CLR PORTA

CLR PORTB

BSET PORTB,#$80

loop1 BCLR PORTB,#$40

BCLR PORTB,#$80

BSET PORTA,#$02

BSET PORTB,#$80

BSET PORTB,#$40

CLR PORTA

BRA loop1

END**9.B.ii. USER-INTERFACE**

Text starts here.

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