Project Requirement and Specification

on

The Smart Glove

(CS V Semester Mini project PCS-501)

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1. About Project

This Project is an initiative to help mute people communicate better with the help of technology. We are building a smart glove which when worn by a mute person, will automatically read their sign language and convert it into speech in real time, so that a normal person will be able to understand them better. This smart glove will have 5 different modes which contain most commonly used words and phrases, which can be switch over by a single hand gesture. Due to this we have a total of 155 combinations.

An added functionality of this project is to help deaf person communicate better, which includes an android application which can be used by deaf person for understanding what the second person is speaking. He simply has to hold a button on this application until the second person stops speaking, and the speech to text conversion library do the rest work.

1.2. NEED FOR NEW SYSTEM

- Very less work is done for the benefit of the deaf and mute persons to communicate better.
- Previously made gadgets uses FLEX Sensors, which is a very costly sensors of worth **Rs1000** per sensors, alternatively we are using LDR Sensors which is a cheap sensor worth **Rs10** per sensors.

2. HARDWARE AND SOFTWARE REQUIREMENT

2.1 Hardware Requirement

Minimum Requirement

PROCESSOR	2.0 GHZ
RAM	4GB
HDD	80 GB
ARDUINO UNO	1
LDR SENSORS	5
BLE SHIELD	Bluetooth Module-1
JUMPER WIRES	Male-Male Male-Female
BUZZER	1

2.2 Software Requirement

Minimum Requirement

OPERATING SYSTEM	Windows Server or any compatible operating system.
ARDUINO	Desktop Application
FRONT END	XML, Cordova
BACK END	Node-JS, Java, C

3. MODULES

3.1 Arduino Code

In this module C code is written through which data from LDR sensors are transferred to Android Application via Bluetooth Sensors.

3.2 Circuit Connectivity

Circuit Connections of the project and gadget creation is done in this project.

3.3 Receiver Code

This is the part where data is received from Bluetooth device using Android application and Cordova.

3.4 Conversational Mode

This Mode contains some commonly used Conversational phrases like Good Morning, Thank You etc.

3.5 Emergency Mode

This Mode has phrases related to emergency situation. For example call Ambulance, call police, fire etc.

3.6 Alphabet Mode

We understand that there is some limitations to our project, so to overcome that we have created an Alphabet mode which contains 26 alphabets of English language.

3.7 Words List Mode

This mode has some commonly used word list.

3.7.1 Mode 1

Contains 31 words like Operation, My, Name etc.

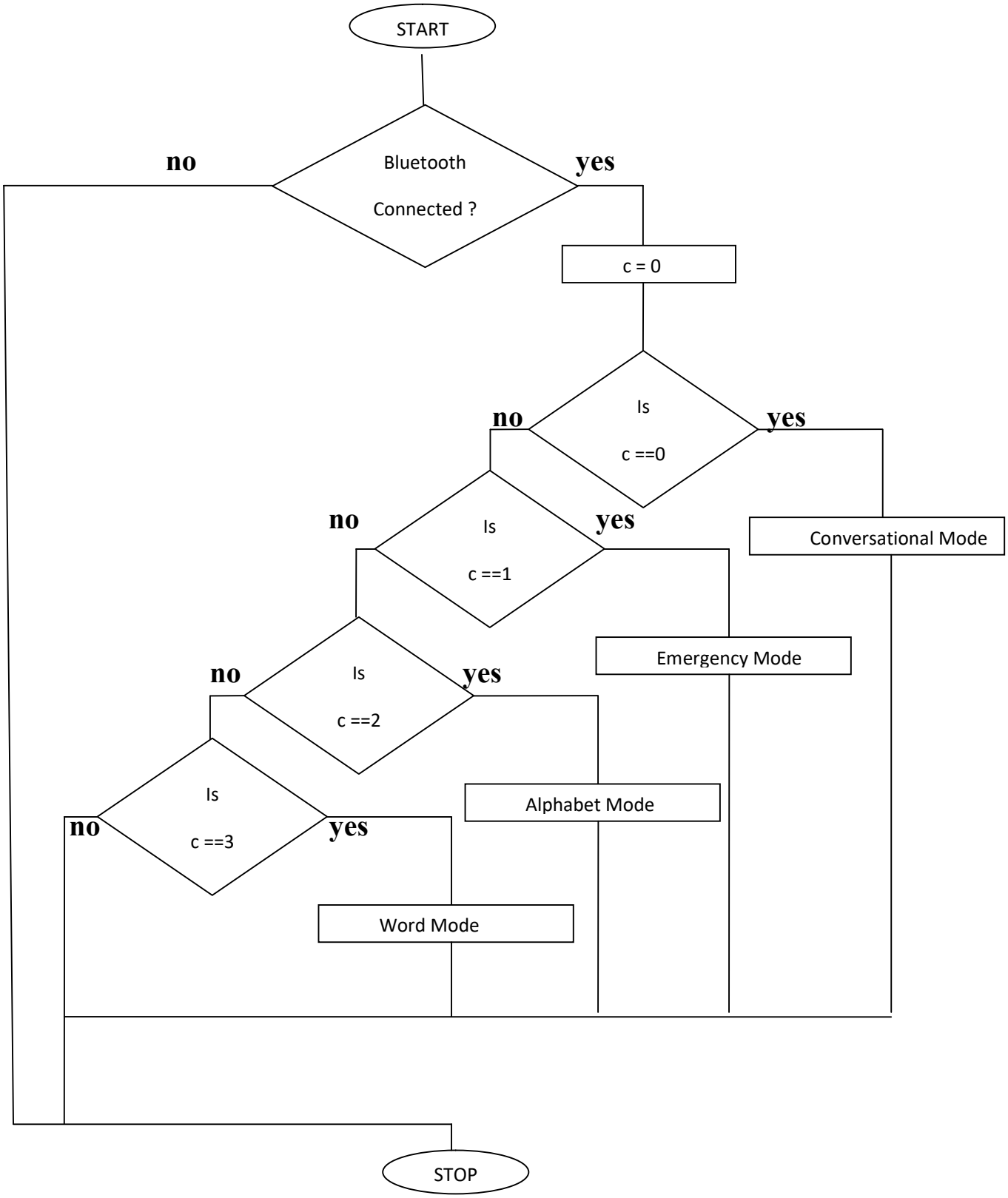
3.7.2 Mode 2

Contains 30 words like Sunday, Monday, January etc.

3.8 Deaf Mode

In this mode an android application is created for deaf person who uses android speech to text conversion library.

SYSTEM FLOW CHART



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