



Sri **SAI RAM INSTITUTE OF TECHNOLOGY**



An ISO 9001 : 2008 Certified Institution  
Sai Leo Nagar, West Tambaram, Chennai - 600 044



**INNOVATION AND ENTREPRENEURSHIP DEVELOPMENT CENTRE ( IEDC )**

(Funded by Department of Science & Technology, Government of India, New Delhi)

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## **KAKSA - Intelligence in Class Boards**



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**FINAL YEAR ELECTRONICS AND COMMUNICATION ENGINEERING**

**SRI SAIRAM INSTITUTE OF TECHNOLOGY**



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**Funded by**

**NATIONAL SCIENCE & TECHNOLOGY ENTREPRENEURSHIP DEVELOPMENT**

**BOARD (NSTEDB),**

**DEPARTMENT OF SCIENCE AND TECHNOLOGY,**

**GOVERNMENT OF INDIA, NEW DELHI.**



DEPARTMENT OF  
SCIENCE AND TECHNOLOGY

## 1. Introduction

Kaksa is a Futuristic approach in solving the Education Problem of bringing in a more technology inside the classroom where all the knowledge is made .Kaksa provides a whole level information on the Classes or Concepts taught in a particular class , by combining the precision detection

of Traces over the Board technology along

with the Kaksa Bot - Making Boards Talk ! The Precision Detection of Traces works over any given surface and makes the overall product to have the capability to make sure each data is recorded and stored in the upscaling stack of Database in Cloud .

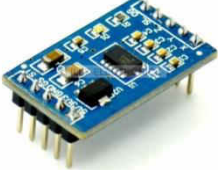
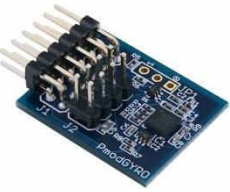

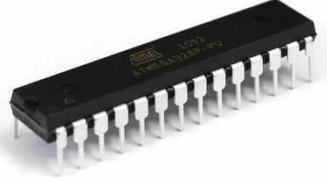


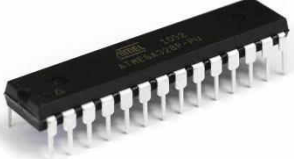
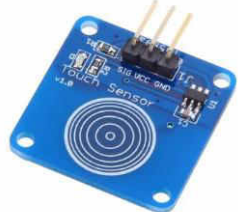




## 2. Technology and working of Kaksa

Black Board of future totally works on the View of IOT. This traces the strokes or the scribbles made by your teacher and records it automatically so you can note it down later and spend your lecture hour to just listen whatever has been covered. The Idea came out since the SMART Board used now days are not frequently used or pretty much technical and since its software that runs on it there are many chances of bugs or errors. The most important part of it was pretty much costlier and needs a technical team to maintain we have initially tried with the following methods , few of this gave us the in-depth analysis on the precision and detection technology. This kind of Immersive technology are used in the process of cutting or tracing a particular shape or curvature . But Over here we would be feeding the Schema with the Co - ordinates . But Here at Kaksa we are reverse applying the particular co-ordinates from the Kaksa System .

### 3. Technology Trails made so far

Note : Try here means Trails

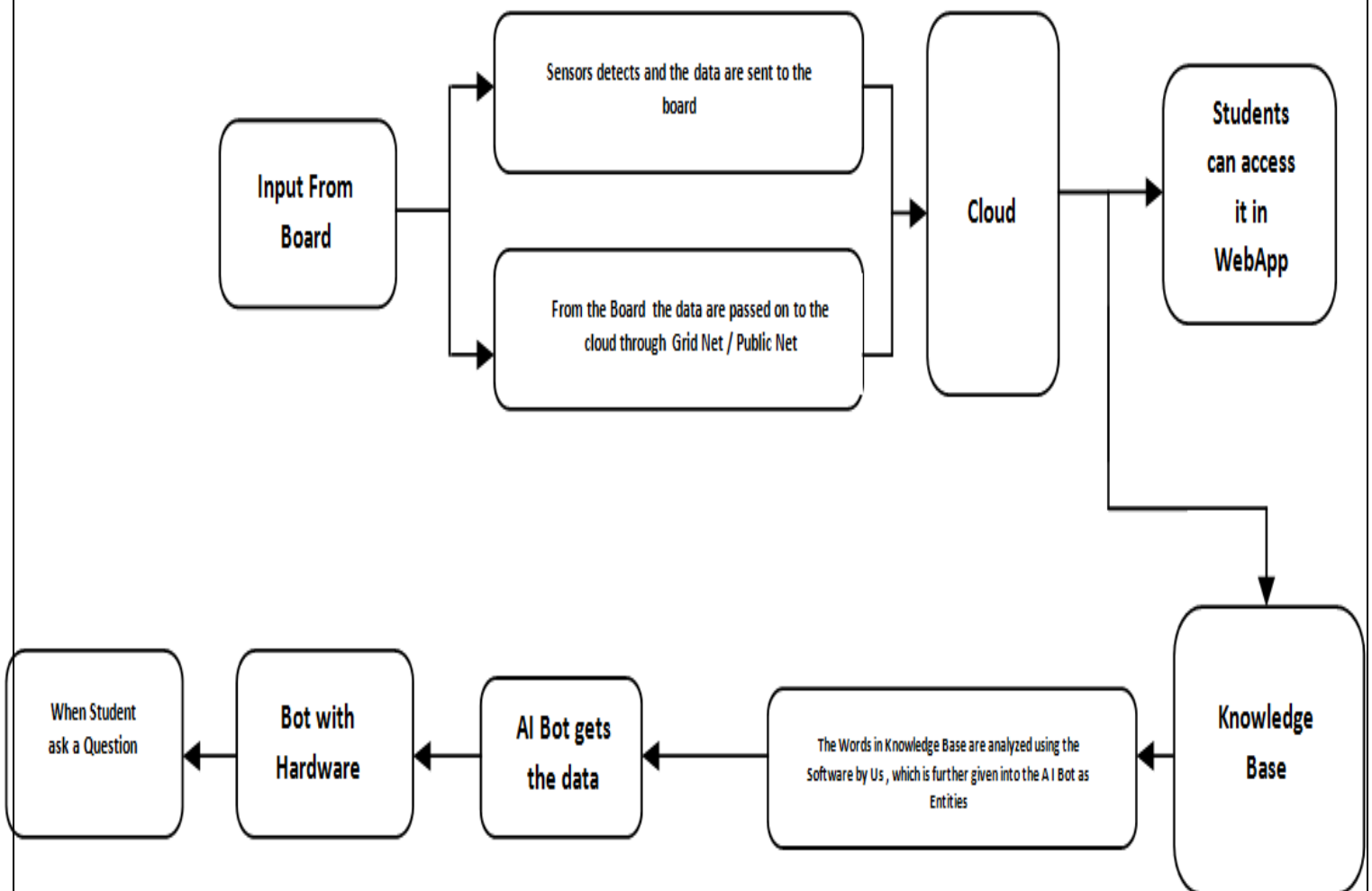
Try I			
	Gyro Sensor	Accelerometer	Touch Sensor
Try II			
	Micro Controller	Gyro Sensor	Touch Sensor
Try III			
	Ultrasonic	Micro Controller	Touch Sensor
Try IV			
	Kaksa Bot	Accelerometer	Kaksa Mother Set

#### 4. Hardware Wiring Process

In the Four trails made by us while executing the process we found each of those having difficulties in

- i) Distance Prediction
- ii) Wrong Prediction
- iii) Plotting Errors

#### 5. Workflow



## Completed Stage :

Bot Hardware

Software App

Cloud

Knowledge Base

## 6. KaksaBot

Built with the Power of Raspberry Pi Engine along with the Google API for Voice Analyzing and also further into Voice Grammar Prediction through Python we built the bot with the custom functions . The Bot is termed as KaksaBot

Contains:

Speakers | Microphone | Light | Button

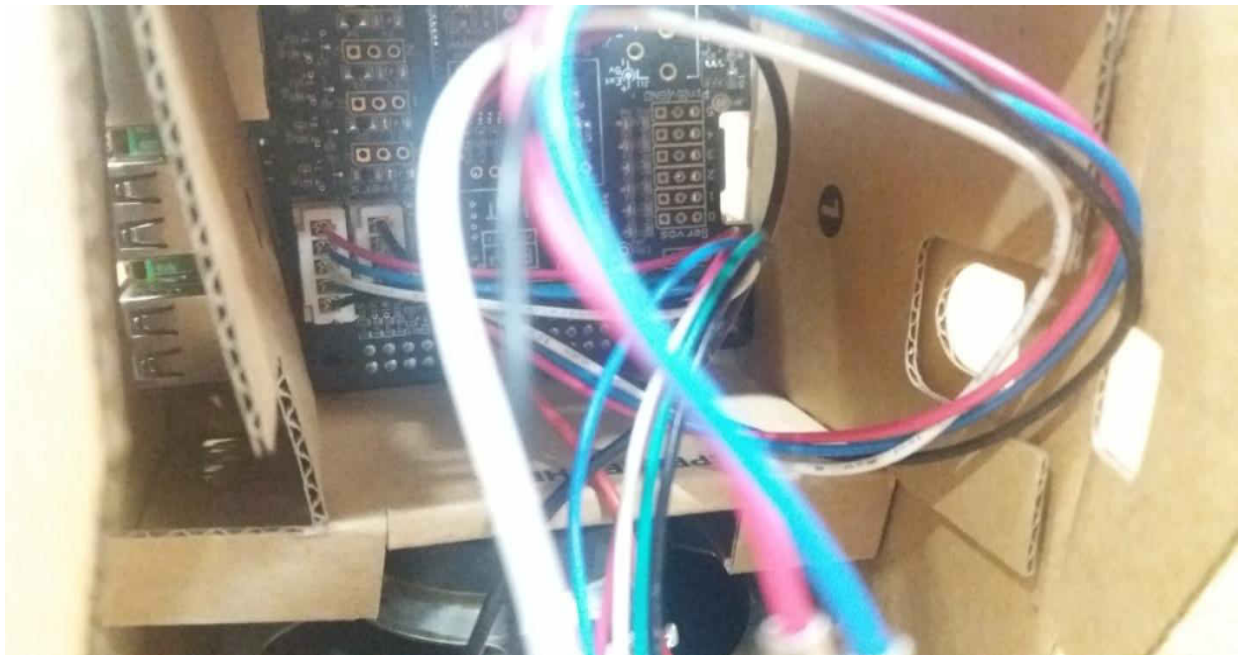


Fig 1 : Kaksa Bot Made with Craft Box

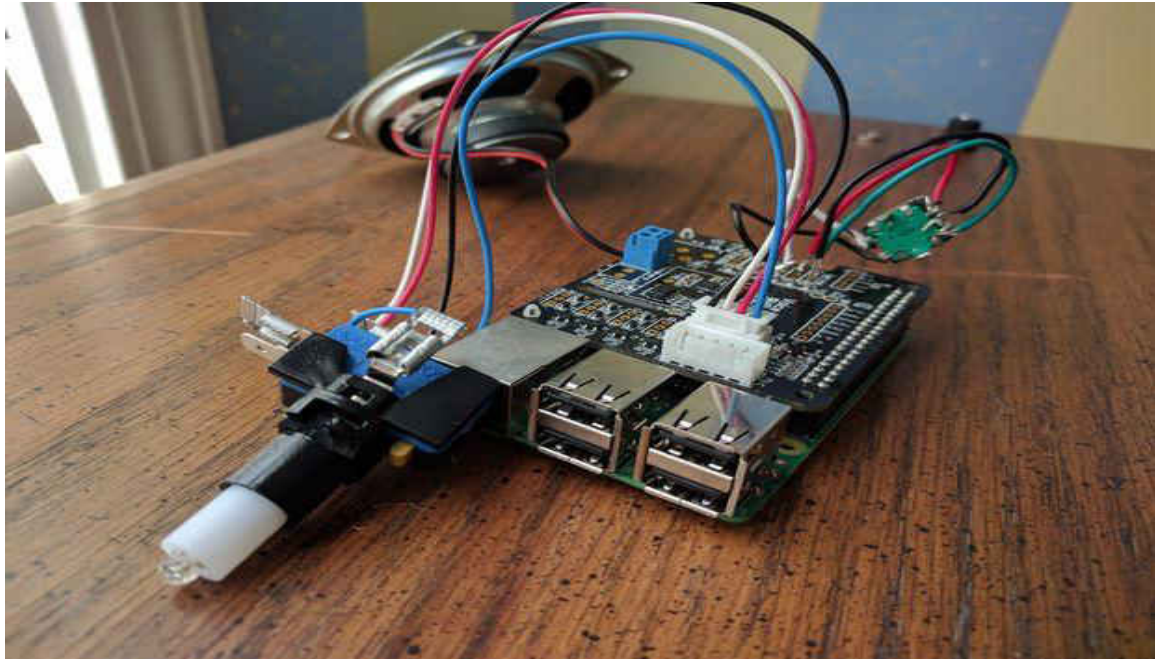


Fig 2 : Processor Used

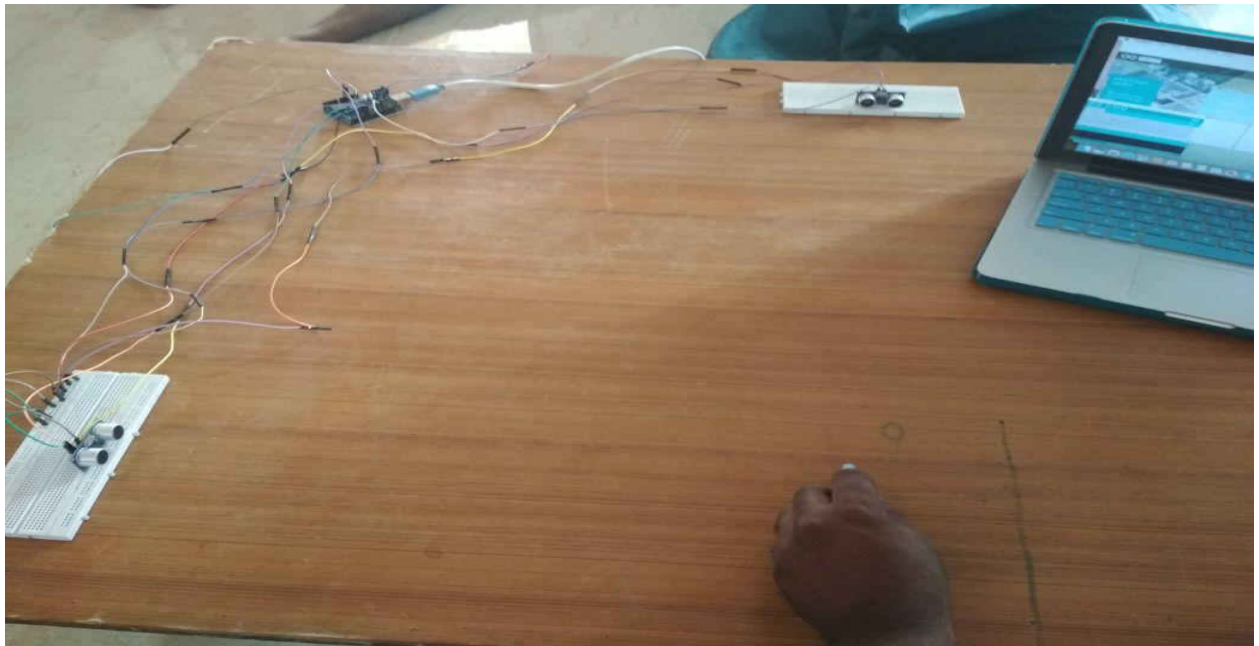


Fig 3 : Layout for the Estimated Coverage



Fig 4 : Sensors used for the Prototype

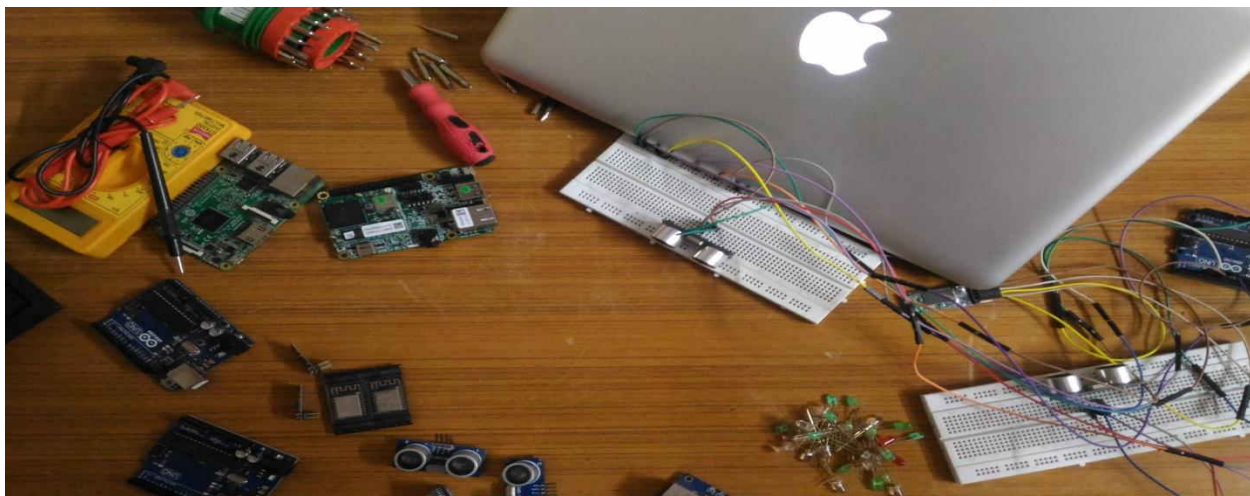


Fig 5 : Apparatus Used for the Particular Product

## 7. Business Approach

We have further being in a research to understand the Market Value for Such Boards and the Potential Customers for the Same .Throughout Calculating the Outcomes of Business from Kaksa finds to be one of the most trustable endeavors for education in 2020 .

### **Out Reach Methods :**

1. Conducting School Camps
2. Demo Basis
3. Kaksa Bot Application Skill Development Programme
4. Defined Course System for Better Syllabus View.

### **Possible Handout Products from Kaksa :**

1. Support
2. Kaksa Device
3. Kaksa Bot
4. Kaksa Cloud
5. Kaksa Apps

### **8.CONCLUSION**

The overall System may work secure in all ways and the Security is well packed as we use the Grid Computing to make sure the data is with us . The Flaws may occur in sensing the most Typical Hand writing Process, so initially we will try to make it to train with many Hand-written Detections.



**Achievements and Mentions :**

<b>2016</b>	<b>First Place Saranathan College Of Engineering</b>
<b>2016</b>	<b>First Place Madras Institute Of Technology</b>
<b>2016</b>	<b>Student Paper PPG Institute Of Technology</b>
<b>2017</b>	<b>Pitched at Bots Meetup '17</b>

**Mentions :**

**"The whole project will be a good initiative , as students could get informations or clear doubts instantly “**

**- Velumurgan Principal , Velammal West , Chennai - 37**

**"Good Innovative Idea , Doing it at Lesser costs would fetch good results “**

**- Dorai Thodla , Technology Enthusiastic**