PATH TRACKER SYSTEM

Academic Project- Embedded Systems

SUBMITTED BY-
Sonal Sharma - Y13UC293

SUBMITTED TO-
Dr. Abhishek Sharma

ACKNOWLEDGEMENT

We take this opportunity to express our profound gratitude and deep regards to our guide **Dr. Abhishek Sharma** for his exemplary guidance, monitoring and constant encouragement throughout the course of this paper. His cordial support, valuable information and guidance helped us in completing this task through various stages. The blessing, help and guidance given by him time to time shall carry us a long way in the journey of life on which we are about to embark.

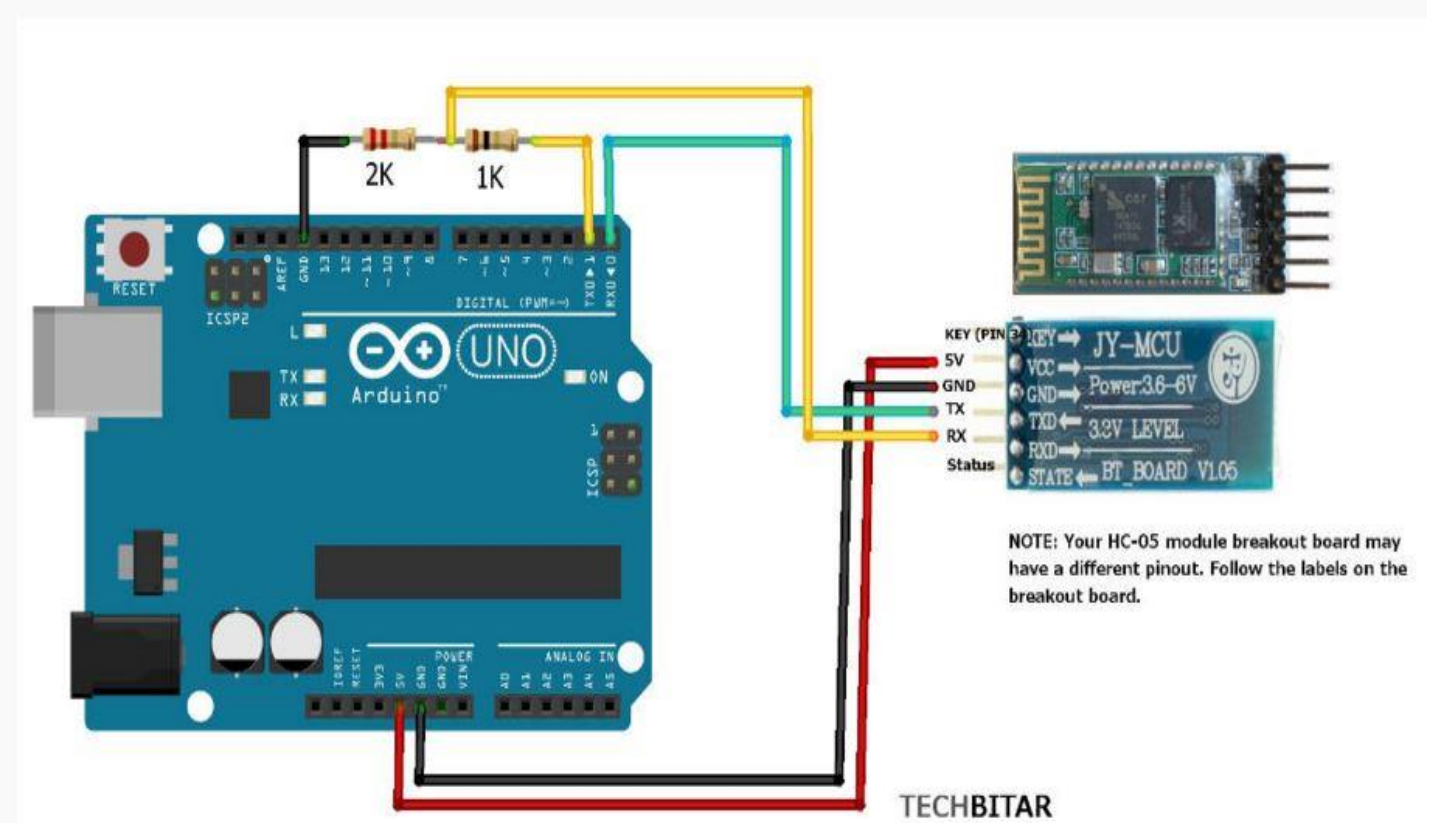
We are obliged to staff members of LNMIIT, Jaipur for the valuable information provided by them in their respective fields. We are grateful for their cooperation during the period of my assignment.

Lastly, we thank almighty, our parents, brother, sisters and friends for their constant encouragement without which this assignment would not be possible.

Abstract:

This project proposes to trace the person's path by interfacing smartphone's Bluetooth and controller board using his/her coordinates, which in turn can be used to visualise its path in google maps. This project finds its application in tracking of on-duty government vehicles, cabs, safety purposes. It is cost effective but yet flexible, robust, adaptable path tracker system.

Connections-



Steps-

1. **Install SensoDuino App from Google Play Store.**
2. **Upload the Code in Arduino before connecting it to Bluetooth module.**
3. **Wiring the Arduino to HC-05 Bluetooth**

HC-05	**Arduino**
5V	5V
Gnd	Gnd
Tx	Rx
Rx	Tx

4. **Connect Bluetooth module to Smartphone. (Use Keys- 1234)**
5. **Transmitting Cartesian Coordinates from Sensoduino App to Arduino via Bluetooth.**
6. **Pairing and Establishing a Serial Connection between Arduino and SensoDuino.**
   The logged sensor readings follows this format:
   SENSOR TYPE (string)
   SERIAL COUNT (integer)

FIRST VALUE OR X (float)
SECOND VALUE OR Y (float)
THIRD VALUE OR Z (float)
LATITUDE (float)
HYPOTENUSE (float)
LONGITUDE (float)

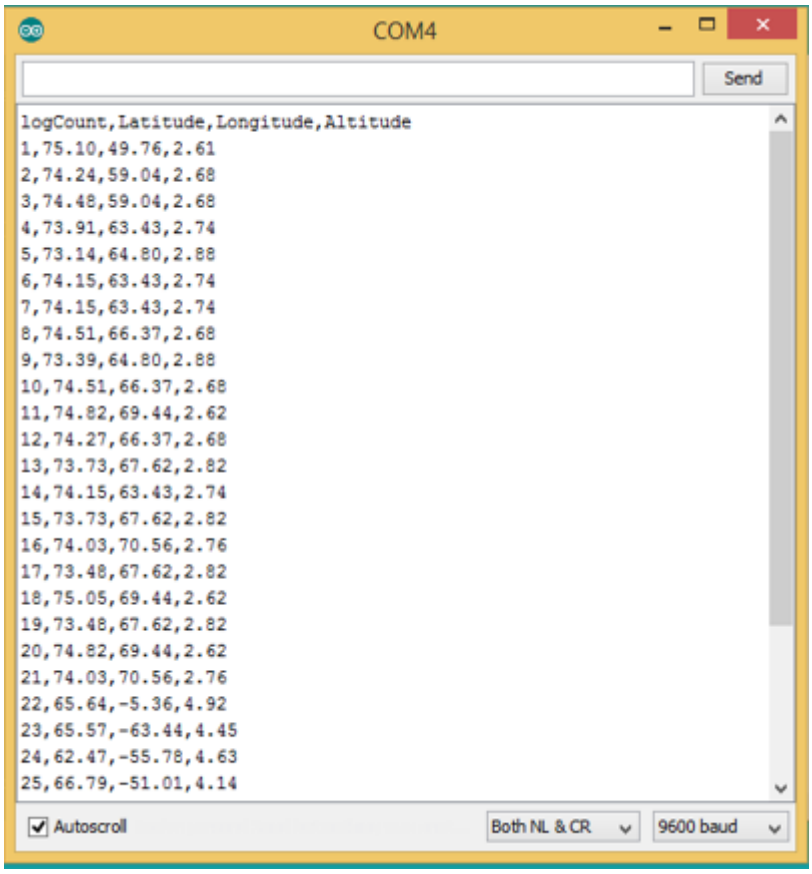
But for tracking the path, only following sensor readings are required:
SERIAL COUNT (integer)
LATITUDE (float)
HYPOTENUSE (float)
LONGITUDE (float)

7. **Capturing SensoDuino Data from Serial Monitor to .TXT file by CoolTerm.**
8. **Import SensoDuino Data from .TXT file into Excel.**
9. **Save SensoDuino Data from Excel file as .CSV file.**
10. **.CSV file is imported to Google Fusion Table resulting in formation of Google Map.**

EXPERIMENT

Experiment was conducted by tracing path from LNMIIT's Hostel Mess B to Temple.

Serial monitor data-



Following is the .csv file generated-

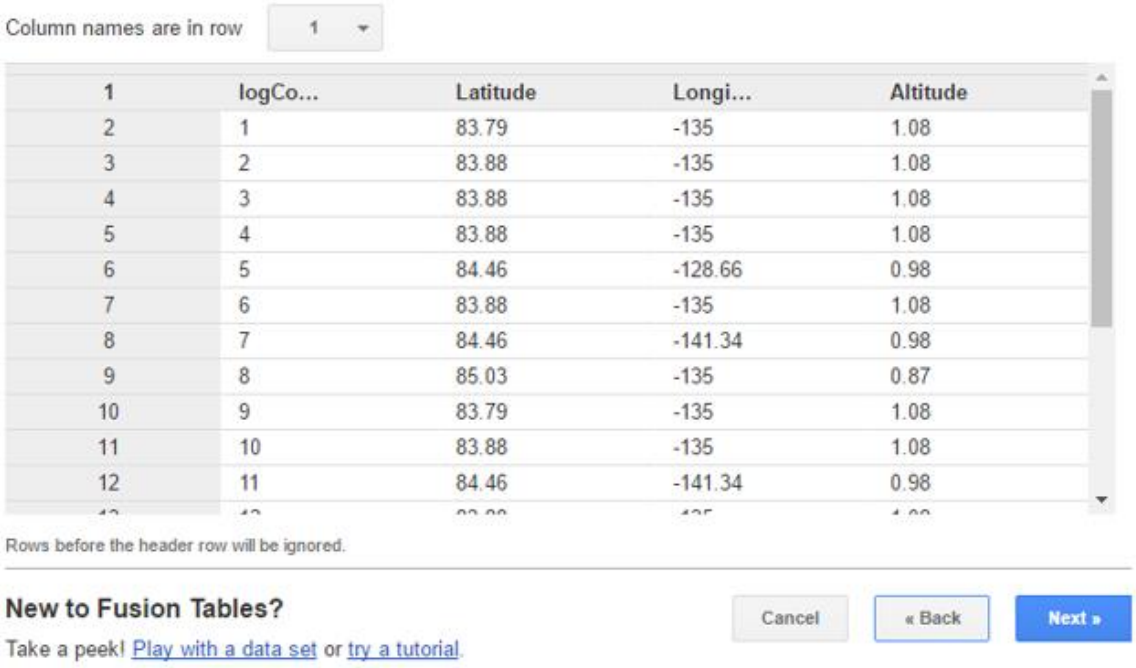
File Edit Tools Help | Rows 1 | Cards 1 | Map of Latitude

Filter | No filters applied

1-66 of 66

logCount	Latitude	Longitude	Altitude
1	83.79	-135	1.08
2	83.88	-135	1.08
3	83.88	-135	1.08
4	83.88	-135	1.08
5	84.46	-128.66	0.98
6	83.88	-135	1.08
7	84.46	-141.34	0.98
8	85.03	-135	0.87
9	83.79	-135	1.08
10	83.88	-135	1.08
11	84.46	-141.34	0.98
12	83.88	-135	1.08
13	84.46	-141.34	0.98
14	84.46	-141.34	0.98

Following is the Fusion table generated-



Resulting Google Maps-