Voice Controlling Robotic Car

Description of the Project:

These projects are based on Internet of Things project (IoT) and it is used to control a car using the voice commands. The voice commends will be given by the user or the owner of the car. The commends are given from the user mobile phone by using the android app. The car speed and distance will be stored in a cloud website according to the time. The user can see the speed and distance of the car on that website according to the time for security purposes. These Total projects is made by using Raspberry Pi, dc motors & some other sensors.

Area of Specialization of Topic:

The area of specialization of these projects is Internet of Things (IoT). The Internet of Things (IoT) is the network of physical objects of things that are embedded with sensors, software's, and other technologies for the purpose of connecting and exchanging data with other devices and system over the internet.

Novelty in the Project:

In our project we have added new feature like speed control mode, Fingerprint to start the car and accident notification alert system. At first speed control, we are dividing the speed of the car in three different modes and the user can activate that mode by using app and the speed in increase from lower value to the higher value on that mode. These features is use like a gear of a car. Second feature is Fingerprint to start a car. These features we are adding for security purposes. When the user wants to start the car then at first, he has to verify the fingerprint using fingerprint sensor, then only he can start the car, in that we are giving three chances to the user to verify it. If not, then the user get email that the car is accessing by another person. At last accident notification alert system, these systems are used for human safety purposes. Whenever the car gets stopped and the ultrasonic sensor value is decrease then the notification is sent to the email which the user provided earlier.

Feasibility of Project:

Hardware

- Raspberry Pi 3 Model B
- DC motors
- Motor Driver
- Ultrasonic Sensor
- Jumper Wires
- Pi Camera
- Finger Print sensor
- LED's
- Servo Motors

- Buzzer
- Bread Board
- Chassis
- Wheels
- 12V Battery

Software

- Thingspeak IoT Platform
- MIT app Inventor

Objectives:

- The speed control is used to control the speed of the car in three modes.
- By using finger print sensor the user can start the car and it is used for security purposes
- Whenever accident or collision is happened with the car, then it will send email to the relatives.
- The time to complete these projects around 2 months to 3 months.
- The cost of these project around 1.5k -2k per head, that means the total cost of the projects around 7.5k to 10k.

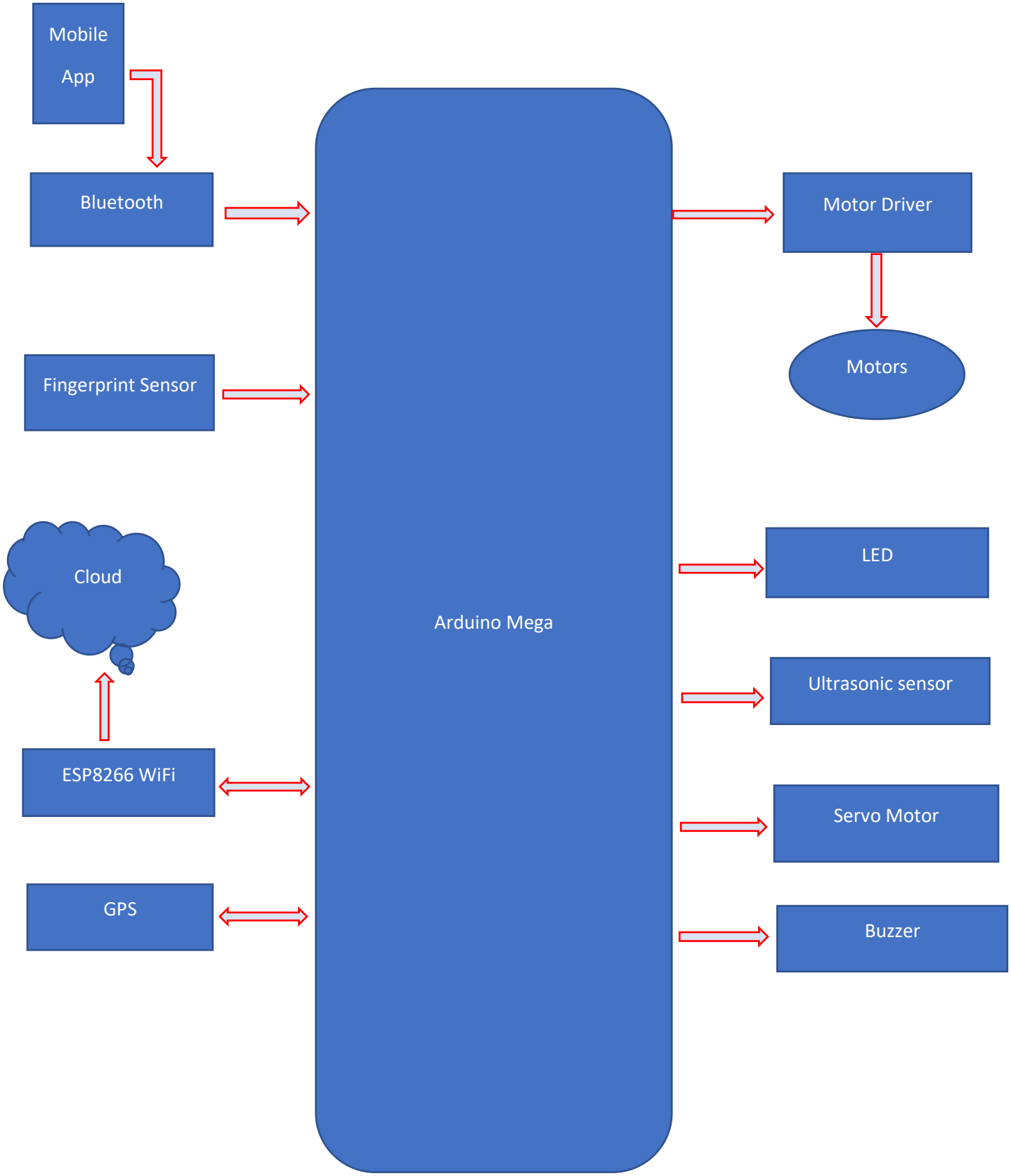
Research gaps intends to fill:

These projects are made for human safety of life. These projects are the combination of two different projects. In earlier, first the project is just a voice controlling car which is used to control a car using voice command. Second one is Obstacle avoiding car. It is an automatic car which avoid the Collison with the obstacles. We have combined these two projects and added a new feature like accident notification alert system, speed control and fingerprint to start car. These features we are adding for human safety and security purposes.

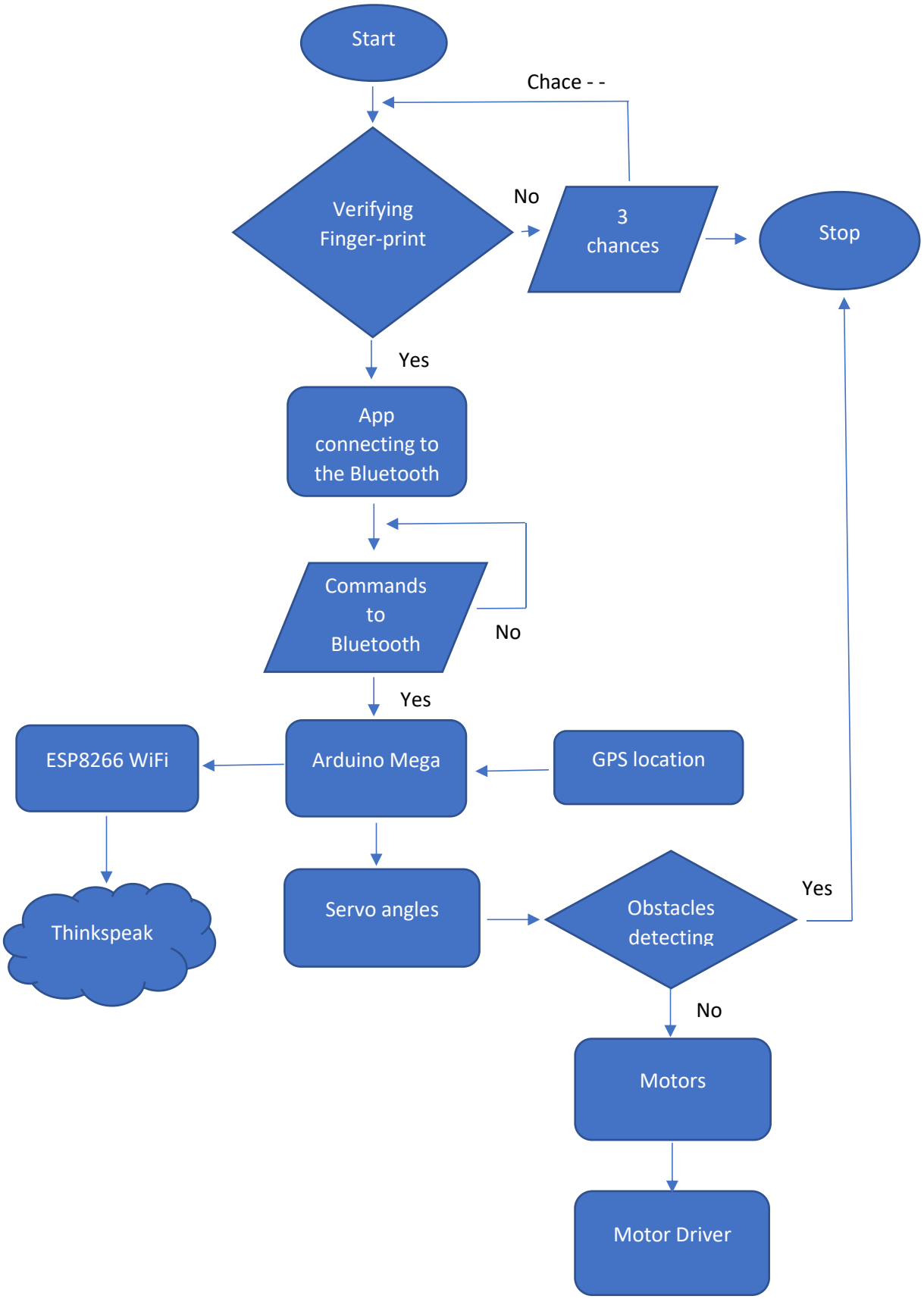
Outcomes of the Project:

The outcomes of the project are that the speed and the distance of the car is displayed on the website by it's time. In website it stores the data of car by its time. From, website we can download the list of the car speed and distance at a time.

Block Diagram:



Flow Chart:


Start
Chace - -
Verifying Finger-print
No
3 chances
Stop
Yes
App connecting to the Bluetooth
Commands to Bluetooth
No
Yes
ESP8266 WiFi
Arduino Mega
GPS location
Thinkspeak
Servo angles
Obstacles detecting
Yes
No
Motors
Motor Driver