

Sensor Programming with using Android Platform

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Sensor Programming with using Android Platform

- **Definition:** Sensors capable of detecting explosives or weapons have vital preventive measures to detect their position, especially in military territories, to prevent terrorists from taking countermeasures against possible terrorist attacks by civilian and military personnel.
 - Available on a variety of devices like Android-based mobile phones, tablets and smart clocks.
 - Data transfer takes place using sensors.
 - Main goal is to detect enemies in the military field.

- **Main Features**

- The Robot is controlled by the user via Bluetooth.
- The user can control the robotics basic movements(move forward, backward, right, left)
- The user can take the robot in automatic mode and let the car drive its own way.
- The robotic vehicle can detect whether the obstacles facing the vehicle are human or not. If the obstacle is a living entity, as for that is the human
- The red led on the robot lights up and it will calculate the shortest distance it can avoid and will proceed in that direction.
- If any object we are comparing is inanimate, it will calculate the shortest distance it can avoid and will proceed in that direction.

Main Contribution

Pros and cons to similar projects

- Pros:

- I. The robot has two modes. Automatic mode and user mode.
- II. While the robot is in automatic mode, it measures the furthest distance from the obstacle and escapes from obstacles.
- III. Human detection with PIR sensor

- Cons:

- I. Short-range operation of Bluetooth connection.
- II. If the robot is far away from a device with a Bluetooth connection, the connection is disconnected.
- III. It's a prototype. It can be developed for the military field.
- IV. Because power consumption is so high, energy will be insufficient in the long run.

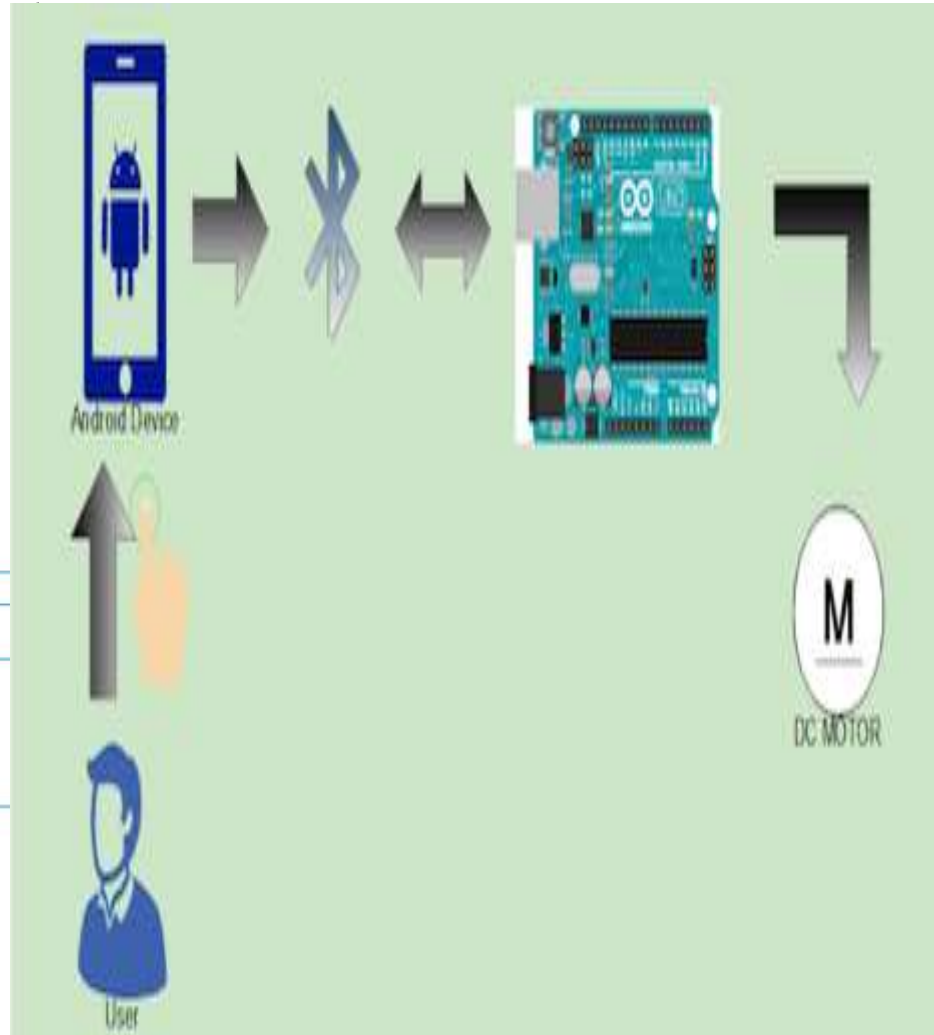
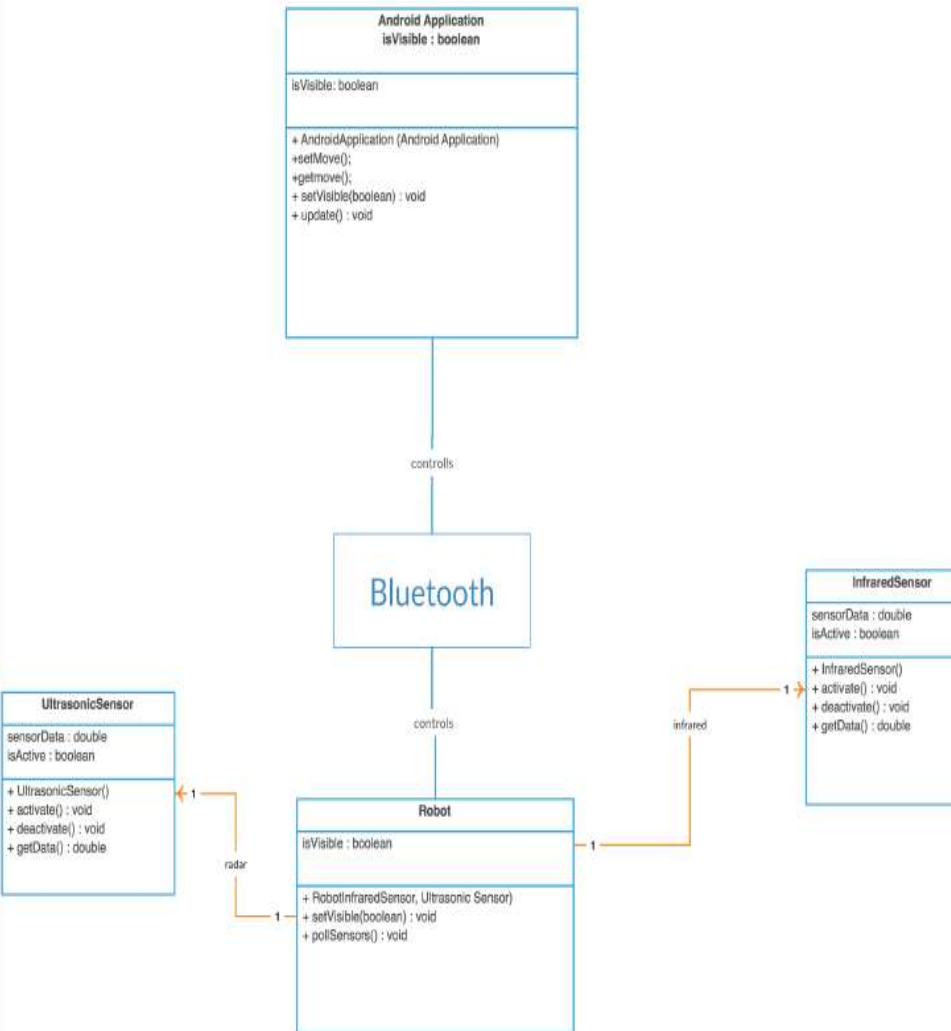
Workplan

		27.02.2018-05.03.2018	06.03.2018-12.03.2018	13.03.2018-19.03.2018	20.03.2018-26.03.2018	27.03.2018-02.04.2018	03.04.2018-09.04.2018	10.04.2018-16.04.2018	17.04.2018-23.04.2018	24.04.2018-30.04.2018	01.05.2018-07.05.2018
Start Date: 27/02/2018		WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10
Documentation	week(1-2-6)										
General Research	Team										
Update SRS&SDD	Team										
Design	week(1-6)										
Devices	Team										
Create Application	Team										
Bluetooth Control	Team										
Sensor Entegration	Team										
Implementation	week(3-7)										
Create Sensor Programming(Implementation)	Team										
Combination of robot and application	Team										
Testing	week(7-10)										
Design	Team										
Bluetooth Control	Team										
Testing	Team										
Reporting	Team										

Gorev Adr	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1 Literature Review												
2 SRS Documentation												
3 SDD Documentation												
4 Sprint 1												
5 Designing												
6 Create Android Application												
7 Combining Robot parts												
8 Connection												
9 Interaction												
10 Testing												
11 Agile Process Technical De												
12 Sprint 2												
13 Designing												
14 Configure Android Applicat												
15 Combining Robot parts												
16 Connection												
17 Interaction												
18 Testing												
19 Agile Process Technical De												
20 Sprint 3												
21 GUI Design												
22 Combining Robot parts												
23 Connection												
24 Interaction												
25 Testing												
26 Agile Process Technical De												
27 Sprint 4												
28 Run												
29 Combining Robot parts												
30 Connection												
31 Interaction												
32 Testing & Release												
33 Agile Process Technical De												
34 Usability Testing												

Sprint 1	Sprint 2	Sprint 3	Sprint 4
1.Create Android Application 1.1 Add left movement 1.2 Add right movement 1.3 Add go movement 1.4 Add back movement 2.Robot parts of order 2.1 Combining robot parts 3.Connection 4.1 Searching for Android device 5.Interaction with sensors 6.Testing	1.Configure Android Application 1.1 Configure left movement 1.2 Configure right movement 1.3 Configure go movement 1.4 Configure back movement 2.Combining robot parts 3.Connection 3.1 Searching for Android device 3.2 Pairing with Android device and Bluetooth module 3.3 Connection between Bluetooth module and Android device 4.Interaction with sensors 4.1 Configure termal sensor 4.2 Configure obstacle recognition sensor 5.Testing	1.GUI design for Android Application 1.1 Design left movement button 1.2 Design right movement button 1.3 Design go movement button 1.4 Design back movement button 1.5 Main panel 2.Combining robot parts 2.1 Edit robot's appearance 3.Connection 3.1 Searching for Android device 3.2 Pairing with Android device and Bluetooth module 3.3 Connection between Bluetooth module and Android device 4.Interaction with sensors 4.1 Configure termal sensor 4.2 Configure obstacle recognition sensor 5.Testing	1.Run Android Application 1.1 Configure left movement 1.2 Configure right movement 1.3 Configure go movement 1.4 Configure back movement 2.Combining robot parts 3.Connection between Bluetooth module and Android device 4.Interaction with sensors 5.Usability Testing 6.Verification Testing 7.Release

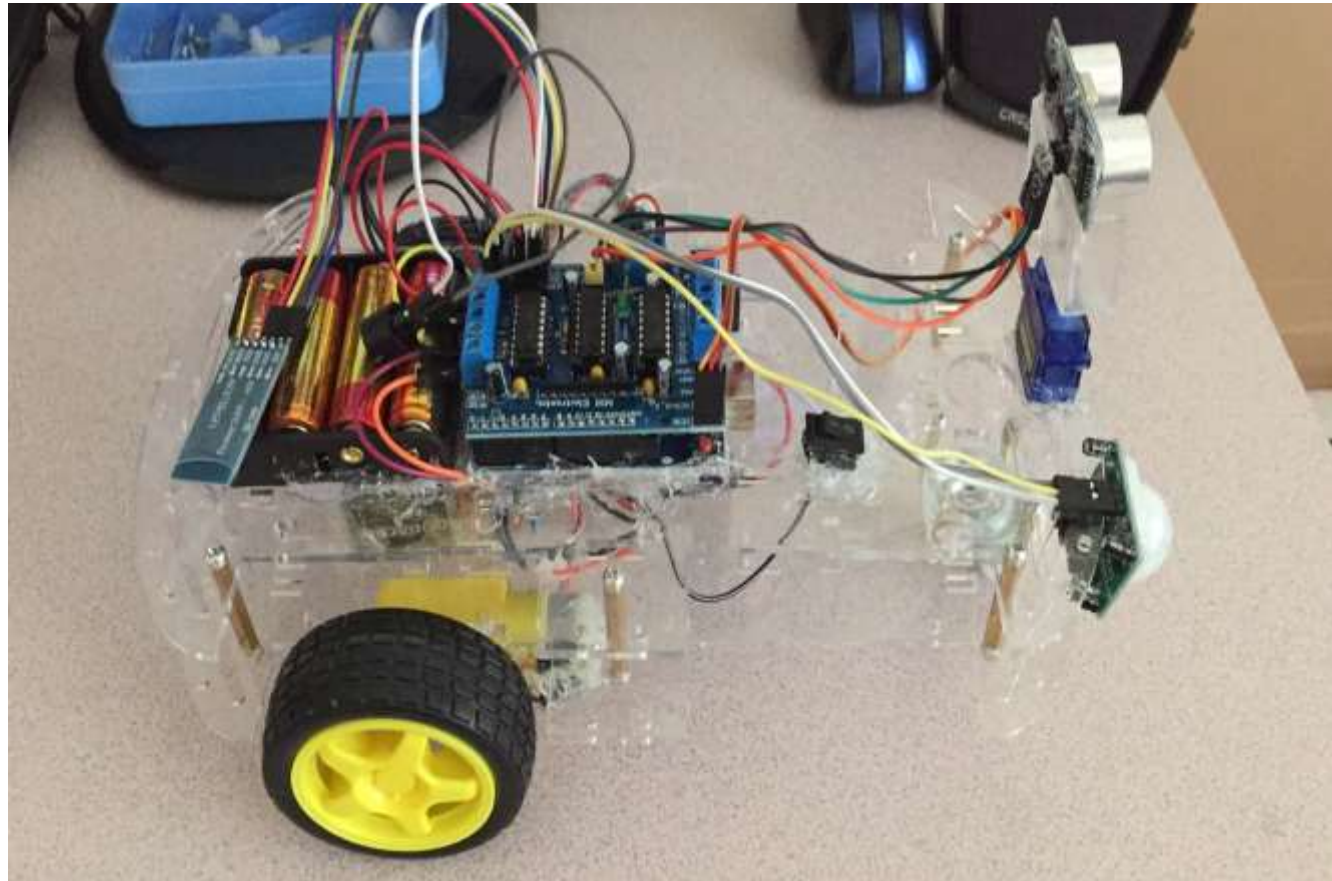
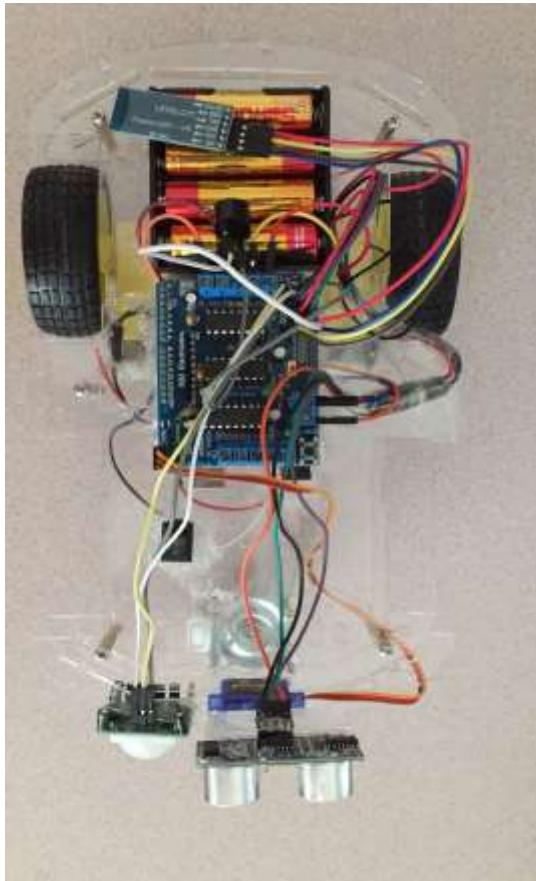
Methods



Materials

- Bluetooth technology
- Smartphone with the Android operating system,
- The microprocessor (Arduino Uno R3)
- DC Motor.
- Robotic car platform
- PIR sensor
- Red led
- 9V battery
- Ultrasonic Sensor
- Motor Shield
- Servo-motor

Potential Risks and Expected Outputs / Obtained Results



As a result of excessive use, the eyes of the user may be deteriorated and the user may be exposed to radiation.

THANK

YOU

