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(57) Abstract :
BOE-BOT, where BOE stands for Board-Of-Education, is a popular robot made by Parallax Inc. Board-Of- Education (BOE) is used in projects where it acts as a programmable intelligent board. The goal of this project is to get students interested in and excited about the fields of engineering, mechatronics, and software development as they design, construct, and program an autonomous robot. The thesis not only gives detailed information about Arduino and the use of App Inventor for android application design but also about the IR, IR sensors, PBASIC programming platform to the new students or beginners. The guidelines provided are very simple to use and understand thus, making it very easy for the new students to build a foundation in their Robotics learning. There are two steps of the thesis; first, to assemble a robot whose main task is to detect the obstacles on its way and move away avoiding them if there are any, and thus, making its own obstacle free path, and second, introduce new students with the topics of robotics, Infrared Sensors, Arduino, Embedded Systems along with the use of robotics in the real life. The main aim of the project is to provide simple guidelines to the new students and beginners who are interested in this type of project. This will make students gain basic knowledge and skills regarding servo, program and mathematics to calculate program value. Arduino can simply be defined as single-board microcontroller, intended to make the application of interactive objects or environments more accessible. The thesis will make new students familiar about the robotics world and their use in the real life. This project will help new students get familiar with Infrared Sensors, Microcontroller, Arduino, and thus providing a guideline to those students to make a mobile robot that might have a real significant use in the world.

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