Micromouse using ATmega2560 By ERTS LAB, IITB
Wireless Control using Xeebee on FireBird V P89V51RD2 Robot By ERTS LAB, IITB
Object Tracker On ATmega2560 based firebird By ERTS LAB, IITB
2 Lane ACC with Overtaking By ERTS LAB, IITB
uCOS for Firebird V ATMEGA2560
Controlling Firebird Robot V 2560 with the help of TV remote control By ERTS LAB, IITB
Adaptive High Beam Assist By ERTS LAB, IITB
Automatic Parking Lot By ERTS LAB, IITB
PWM Motion Control Robot By ERTS LAB, IITB
Position Control using Interrupt on FireBird V P89V51RD2 Robot By ERTS LAB, IITB
Autonomous Parking Robot By ERTS LAB, IITB
LOGO Interpreter Interface with Omnibot By ERTS LAB, IITB
Servo Control using PWM and Timer0 on FireBird V P89V51RD2 By E-Yantra Team
Ball Counter using FireBird V P89V51RD2 Robot By E-Yantra Team
Ball Sorter using FireBird V P89V51RD2 Robot By E-Yantra Team
Grid Solving Algorithm By Nuva Engineering College, iLabs Team, Nagpur
To sort objects based on Color and Size using Firebird V robot By E-Yantra Team
Depth Detection Based Obstacle Avoidance By E-Yantra Team
Hand Gesture following Firebird V By E-Yantra Team
MAP TRACER By E-Yantra Team
Making the Firebird V traverse along arbitrary curves By E-Yantra Team
Optimal Path in Multi-Stage Graphs By E-Yantra Team
TENNIS BALLCOLLECTOR ROBOT By E-Yantra Team

Micromouse
Tags: micromouse, ATmega2560

Xeebee is wireless module works on IEEE 802.15.4. Its replacement for RS232 serial communication.
Tags: wireless communication, P89V51RD2
To track a moving target using a robust visual tracking algorithm and shoot the laser mounted on the robot.

Tags: ATMega 2560

2 Lane ACC (Adaptive Cruise Control) with Overtaking using FireBird V P89V51RD2 Robot.

Tags: overtaking,p89p51rd2

Controlling Firebird Robot V 2560 with the help of TV remote control which works on RC5 Coding. The receiver TSOP 1738 on firebird, receives IR-signals emitted by remote and process the codes. According to code it performs actions.

Tags: TV remote,ATmega2560

Adaptive High Beam Assist using FireBird P89V51RD2. Its automatic switches the light beam of car according to coming cars for safety purpose on highways.

Tags: p89v51rd2
Automatic Parking Lot using FireBird V P89V51RD2. Robot searches for empty space for parking. First priority is given to left side parking space. If any robot comes in front of it, it starts beeping...

Tags: p89v51rd2, parking

This program controls the speed of the motor by the Pulse Width Modulation method. There are 5 PWM channels available on FireBird V P89V51RD2 Robot.

Tags: PWM, Speed Control, p89v51rd2

Position Control using Interrupt on FireBird V P89V51RD2 Robot

Tags: interrupt, p89v51rd2

Implement a self-parking car (here the FIREBIRD robot), which detected if parking is possible in a vacant space to fit the bot. In case of a vacancy, the bot parks itself, else it moves ahead until it finds a place to park.

Tags: parking, ATmega 2560
The LOGO program will be given to the interpreter on a computer (or laptop). The interpreter has to send messages to the robot via zigbee. The robot has to correctly respond to the messages and draw the figure accordingly.

Tags: omnibot,Atmega2560

There are 5 PWM channels available on Firebird V P89V51RD2 Robot. P89V51RD2 microcontroller supports 8 bit of PWM. So we get 25 positions to move the servo.

Tags: servo pwm P89V51RD2

Specialized designed drum ball collector which collect balls in basket as well as it also count number of balls.

Tags: drum ball collector

Specialized designed drum ball collector which collect balls in basket as well as it also count and sort balls according to its color. Color sensor is fixed on cup which collect the ball.

Tags: drum ball sorter
The Grid Solving Algorithm is developed using ilabs' PROJECT SHREE BOARD VER 2.1. This algorithm is used to solve the grid of any size. Also it displays the current location and direction vector on 16 X 2 LCD.

Tags: Grid Solving Algorithm SHREE BOARD

The objective is to develop a robot to automatically detect and pick objects as per specifications. It will sort the objects based on color and size, and place them separately.

Tags: Robotics, Embedded, AVR, Firebird, IIT-Bombay, ERTS Lab, Automation, Automatic

The project involves the design and implementation of an engineering solution to the problem of autonomous geological exploration. The robot will map the position of the objects creating a position map and takes precise action to navigate around the obstacles.

Tags: Robotics, Embedded, AVR, Firebird, IIT-Bombay, ERTS Lab, Automation, Automatic

The aim of our project is to build a system which would allow a user to control the motion of a Firebird bot by hand gestures. The microcontroller on the bot will sense the gestures and the motion will be executed as per a set of predefined norms.

Tags: Robotics, Embedded, AVR, Firebird, IIT-Bombay, ERTS Lab, Automation, Automatic

Exploration of an unknown environment searching operations inside buildings, caves, tunnels and mines are sometimes dangerous and hazardous. The use of autonomous bots to perform such tasks in complex environments will reduce the risk of these missions.
The aim of the project is to make the Firebird V robot traverse along arbitrarily shaped curved paths. A binary image of the path is given, in which case, the Robot is supposed to draw all the curves by lifting the Marker up and down at appropriate points.

In our project, we find the optimal path between a source node and a destination node. Edges are links of white lines which correspond to the field of white lines. The edges are weighted with the distances measured. Hence we can find the optimal path from the source to destination in our multi-stage graph.

The aim of the project is to program the firebird to collect tennis balls scattered in a court.