IEEE-JUIT SB (2021-2022)

IoT and Robotics Workshop

The Internet of Things ('IoT')-all embracing heterogeneous networks of smart devices hyper connected with each other via the Internet is on the rise and will become reality within the next five years. The decisive change accompanying the IoT will be its ubiquity: networked devices are everywhere. Like any technological progress, this development offers social and economic opportunities, but at the same time it also harbors, notably, the IoT risks and detrimental impact. It is transforming and disrupting our daily lives faster than any other technology before. The aim of the workshop to discuss real life use cases on IoT applications and make the session interactive by providing an opportunity to suggest a solution to real life scenario also has been included to discuss some bonus: IoT demo applications with Firebird-V. Week ended with the demonstration of live projects.

IEEE JUIT-SB conducted one week workshop on the future topic IoT from March 7th -12th, 2022. This workshop was done in collaboration with **e-Yantra**. Dr. Vikas Baghel took all the sessions and Mr. Abhishek helped in the lab. The main headlights of the workshop are given below:

a. Different types of Arduino boards, Firebird robots and their characteristics (Power supply, clock speed, Digital I/O, Analog Input, PWM modulation and different kinds of interfacing).

b. Wi-Fi module Programming with Firebird robots.

c. Interfacing of sensors and uploading data on cloud.

d. For Interfacing different types of sensors with Arduino and Firebird-V with database, different programming steps have been discussed (function, statement, control statement levels variables, maths, pin mode, serial mode, digital mode variable, delay and for loop)

e. Interfacing and controlling various devices like LED, motors, sensors etc. with Firebird-V.

f. Four examples have been taken as a hands-on such as LED glow, Switch sensing, Temperature display, small motor controlling.

g. 15 students have participated.

h. The participants were also awarded with certificates and kits to continue their journey with IoT.

Day Wise Tasks:

Day 1: Introduction to Firebird-V, hardware components and software installation.

Day 2: Code to operate Buzzer.
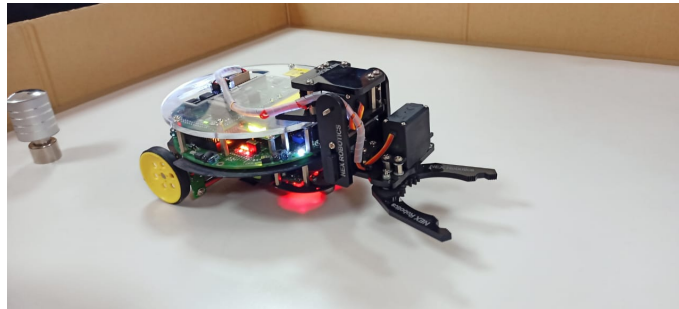
Day 3: Basic IO Interfacing on Firebird-V

Day 4: BarLED Buzzer Interfacing and LCD Interfacing

Day 5: Motion Control and Velocity Control

Day 6: Position Control using Interrupt and Sensors Interfacing

Day 7: ADC Sensor Display and White Line Follower

Overall, the workshop was a big success and all the participants learnt a lot.