

SOP Robotics/IoT Track

- 14th June 2024

The Robotics and IoT track held its first session on the 20th of May 2024. Our participants consisted of about 30 members, mentored by a team of up to 17 IEEE volunteers who have experience in the subject.



The SOP track was divided into two main stages, Stage 1 and Stage 2.

Our main goal for Stage 1 was to build a basic foundation for all the participants in the field of Robotics and IoT and give them a hands-on and closely mentored learning environment starting from the very essential beginning of microcontroller architecture and controlling an LED up until controlling actuators based on parameters from sensors, and then to control all these using a app on the phone using bluetooth. We formed the participants into teams of 4 and made them work together in testing basic components and code. We conducted our workshop sessions each day from 3:30pm till 5pm in college premises.



Over the days, we slowly built up on the foundation of what we taught and displayed how to implement the previously learnt functions and codes to integrate multiple components to work in synchrony.

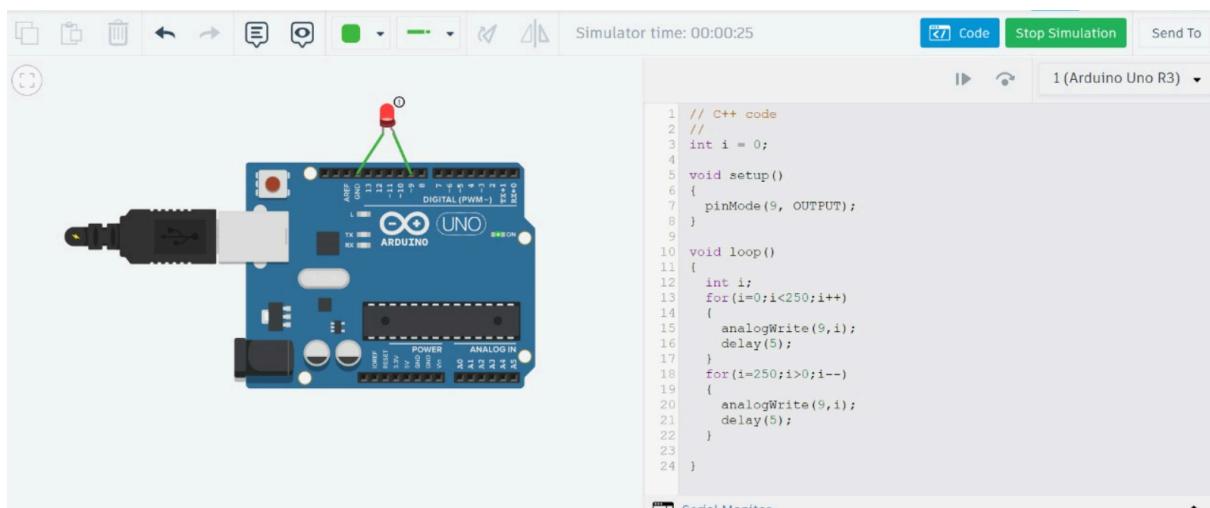


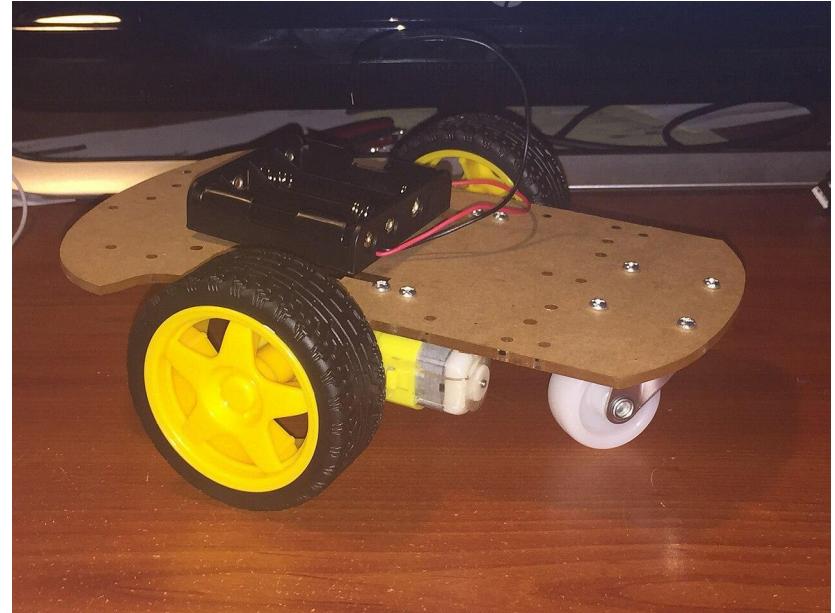
The students made sure to achieve and test out each session's agenda and engaged in different games and mini-competitions we held to encourage experimenting different ways to implement what they had learnt.

Over the weekends, we gave all the participants to work on assignments to complete and submit before a due date. Each team was given points based on their efforts in the sessions and their assignments.



Our assignments ranged from simulating whatever they had learnt on a certain day online using TinkerCAD, brainstorming creative ways to implement futuristic ideas (such as wheelie shoes) and researching on up and coming technological advancements (such as FPGAs) and presenting what they have learnt in a video format.





To wrap up our stage 1 of SOP, we intend to make the participants build a basic line follower bot from scratch, they will do all the coding, constructing and design for the bot.

This project will utilise all that they have learnt over the past sessions and be a perfect first project in the field of robotics and IoT which utilises all basic foundations.

To include a sense of competitiveness, we will wrap up stage 1 by having a bot race and awarding the winning team with various prizes.

Soon after stage 1 finishes, we will initiate stage 2 where each team is given the liberty to choose a big project of their own and will utilise the resources and opportunities available in BICEP and, with the mentors help, work on it over the following weeks.