

Introduction

The IoT and Robotics Skill Development Training Program 2024 is a comprehensive initiative designed to equip participants with essential skills in the fields of Internet of Things (IoT) and robotics. Organized by the EDGE initiative and the ICT Division of Jahangirnagar University, this program aims to support the digital transformation of Bangladesh by developing skilled professionals who can contribute to smart, technology-driven solutions.

Objective of the Program

The primary goal of this program is to empower students, researchers, and professionals with the foundational knowledge and hands-on skills required for IoT and robotics. The program is part of a broader mission to support digital governance and enhance the local economy through technological innovation.

Lecture-2 Overview: Basic Circuits & Introduction to Arduino

In Lecture-2, participants were introduced to basic electronic circuits and the fundamentals of Arduino. This session was critical, as understanding circuits and how to use Arduino microcontrollers forms the backbone of IoT and robotics projects.

Key Learning Points

1. Basic Electronics & Circuits:

- The session covered essential concepts in electronics, including voltage, current, resistance, and the functionality of basic circuit components such as resistors, capacitors, and LEDs.
- Participants learned how to design simple circuits and analyze their behavior, which is crucial for building more complex IoT and robotics projects.

2. Introduction to Arduino:

- Arduino is a popular open-source platform that makes electronics more accessible to beginners and advanced users alike. The session introduced the Arduino board, highlighting its various components and ports.
- Participants learned to write basic programs (called "sketches") to control the Arduino board and connect it to sensors and actuators, allowing them to interact with the physical world.
- Practical exercises included programming the Arduino to light up LEDs, read data from sensors, and respond to inputs from buttons or other components.

3. Hands-On Activities:

- The session included hands-on exercises where participants built simple circuits, connected them to an Arduino, and programmed the board to perform specific tasks.

- Examples included creating an LED blinker and setting up a basic temperature sensor to collect data. These exercises were designed to reinforce understanding and give participants confidence in working with Arduino.

Importance of IoT and Robotics Skills

IoT and robotics are transforming industries across the globe by enabling automation, enhancing data collection, and facilitating smart devices that communicate over networks. The skills learned in this training program can lead to career opportunities in areas like smart agriculture, industrial automation, healthcare, and environmental monitoring.

Conclusion

The IoT and Robotics Skill Development Training Program 2024 is a vital step toward fostering a technologically skilled workforce in Bangladesh. By understanding basic circuits and gaining introductory knowledge of Arduino, participants are building a foundation that will enable them to create innovative solutions and contribute to the country's digital economy.

This training session has set the stage for more advanced topics, which will further develop participants' competencies in IoT and robotics. The program continues to offer knowledge and support to anyone interested in making a positive impact through technology.