DEPARTMENT OF INFORMATION TECHNOLOGY

WORKSHOP REPORT

Topic Name	National Space Exhibition 2025
Type of activity	Workshop
Name of the industry	1. New Delhi Data Point Pvt. Ltd. 2. Sofcon Training Pvt. Ltd.
Mode, Date and Time	In-person 11th – 12th September 2025
Target audience	IT, 3rd and 5th Semester
Organised by	Dr. Deepshikha Yadav, AP IT Dept. Prof. Prabhjot Kaur (HOD, IT Dept.)
Attended participants	60/60 (100 % Attendance)

Introduction

A two-day hands-on workshop on Internet of Things (IoT) Applications was organized to provide participants with practical knowledge and skills in designing and developing IoT-based solutions using Arduino and Raspberry Pi platforms. The workshop aimed to bridge the gap between theoretical understanding and real-world implementation of IoT systems.

Day 1: IoT Applications Using Arduino

Speaker: Prof. R.P. Singh, Director, New Delhi Data Point Pvt. Ltd.

The first day of the workshop focused on Arduino, an open-source electronics platform based on easy-to-use hardware and software. The session began with an introduction to the fundamentals of IoT and its real-world impact in sectors such as agriculture, healthcare, smart homes, and industry automation.

Session Highlights:

Introduction to IoT concepts and architecture

Overview of Arduino Uno and its components

Hands-on training on basic Arduino programming (using Arduino IDE)

Interfacing sensors (e.g., temperature, humidity, motion) with Arduino

Building a simple IoT application: Real-time temperature monitoring system

Data transmission using Wi-Fi module (ESP8266)

Live demonstration of sensor data visualization on cloud platforms (e.g., ThingSpeak)

The session provided a strong foundation in sensor integration and data communication using Arduino.

Day 2: IoT Applications Using Raspberry Pi
Speaker: Mr. Sourabh Patiyal, Trainer, Sofcon Training Pvt. Ltd.

The second day introduced Raspberry Pi, a powerful single-board computer ideal for more complex IoT projects involving computing, networking, and data processing.

Session Highlights:

Overview of Raspberry Pi hardware and OS (Raspberry Pi OS)
Setting up Raspberry Pi and basic Linux commands
Interfacing sensors with Raspberry Pi using GPIO
Building a project
Real-time data logging and cloud integration using Python scripts
Introduction to MQTT protocol for IoT communication
The practical session allowed participants to explore the capabilities of Raspberry Pi in real-time data handling and device control.

Outcomes of the Workshop:

Gained hands-on experience with both Arduino and Raspberry Pi platforms.
Learned sensor interfacing, coding, and cloud integration techniques.
Tested real-world IoT projects.
Developed a clear understanding of IoT system architecture and protocols.
Encouraged innovation and problem-solving through DIY projects.
Will help in choosing IOT as elective subject in 6th semester.

This two-day workshop successfully equipped participants with essential IoT development skills, laying the foundation for further exploration and innovation in the field.

Dr. Deepshikha Yadav
Assistant Professor, IT

Prof. Prabhjot Kaur
HOD, IT