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Date: 23-09-2024

The Innovation Club of the Department of Computer Science and Engineering (CSE) at PVPSIT, Vijayawada, organized a workshop on 23/09/2024, inspiring creativity, collaboration among students and giving valuable insights on Internet of things. The event comprised three main agenda items: Introduction to Internet of Things by Dr. Ravuri Daniel Sir.
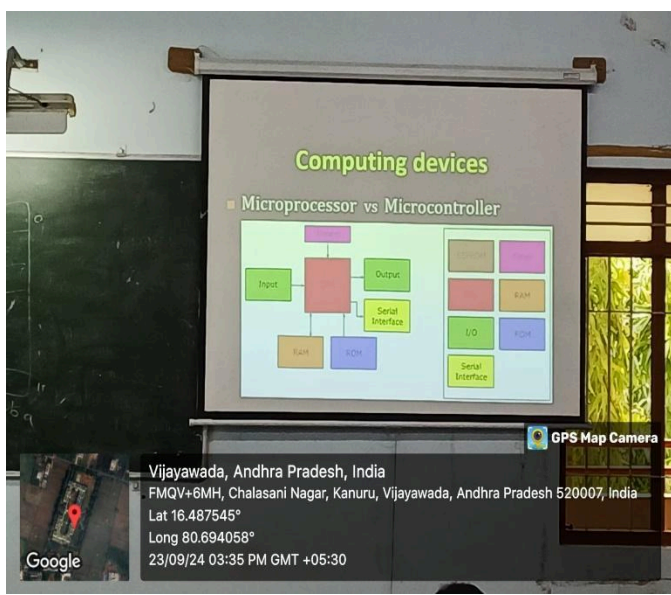
The highlights of the session:

The event served as an inspirational platform, fostering creativity, collaboration, and a deeper understanding of the Internet of Things (IoT) including the desigining and controlling of simple hardware circuits using Arduino software and Tinkercad tool among students within the Department of Computer Science and Engineering (CSE) at PVPSIT, Vijayawada.
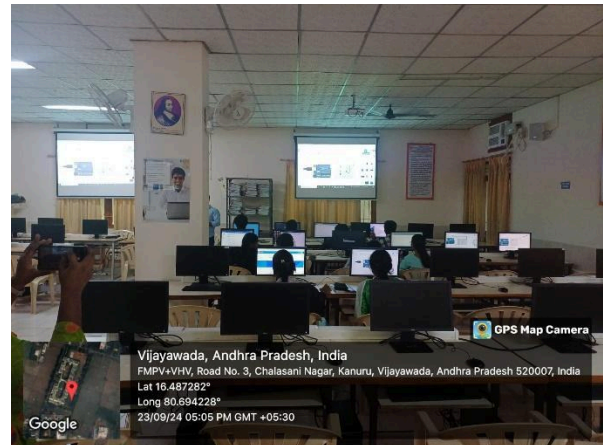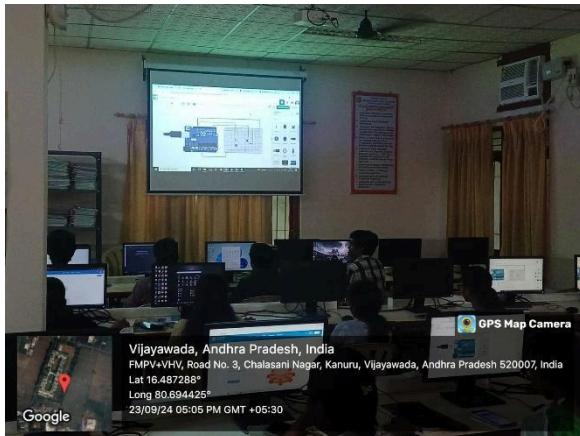
Internet Of Things

The session laid by Dr R Daniel Sir,, Faculty Coordinator of the Innovation Club of PVPSIT mainly focussed on the understanding and development of basic hardware circuits using tinkercad tool.The session began with a keen introduction as follows:

The Internet of Things (IoT) refers to the network of interconnected devices that communicate and exchange data over the internet. These devices can range from everyday household items to sophisticated industrial tools. The key concept of IoT is that it enables these devices to send and receive data, allowing for greater automation, efficiency, and data-driven decision-making.

Arduino overview:

Arduino is an open-source electronics platform based on simple, user-friendly hardware and software, designed to make it easy for beginners and professionals to build interactive projects. At its core, Arduino consists of a microcontroller, typically an ATmega chip, which acts as the brain of the system, capable of processing inputs and controlling outputs based on pre-programmed instructions. The hardware includes digital and analog pins that can interface with sensors, actuators, and other electronic components. Arduino boards are programmed using a simplified version of C/C++ in the Arduino IDE (Integrated Development Environment). The platform supports a wide range of sensors (for detecting temperature, light, motion, etc.), actuators (like motors or lights), and communication modules (such as Bluetooth, Wi-Fi, or RF). Through the combination of software and hardware, Arduino enables the creation of various projects, from simple LED blinking circuits to more complex systems like robots, IoT devices, and home automation setups. Its modularity, ease of use, and large community support make it ideal for learning electronics, programming, and prototyping.

Lab Session:

In this lab session, we explored the fundamentals of designing basic LED circuits using Arduino. The objective was to learn how to control an LED using digital output from the Arduino board. We began by setting up a simple circuit, connecting an LED and a current-limiting resistor to one of the Arduino's digital pins. Using the Arduino IDE, we wrote a basic program to control the LED's state—turning it on and off. The code involved setting the designated pin as an output and using the digitalWrite() function to send a HIGH or LOW signal, thus powering the LED or turning it off. After successfully controlling the LED, we expanded the project by implementing a "blinking" effect, where the LED would alternate between on and off states with a specific delay using the delay() function. This exercise provided hands-on experience in understanding how Arduino interacts with simple hardware components, reinforcing the principles of digital I/O control and circuit design. The session also highlighted the importance of proper component connections and coding in real-world applications.

Conclusion: The Innovation Club event held on 23/09/2024, marked a pivotal moment in fostering creativity, collaboration, and innovation within the Department of CSE at PVPSIT, Vijayawada. Through engaging sessions on Internet Of Things followed by a hands on lab session, the workshop exemplified the department's commitment to nurturing entrepreneurial talent and driving technological innovation in the realm of Technology.

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