

# ST JOSEPH'S DEGREE COLLEGE

DEPARTMENT OF COMMERCE AND MANAGEMENT

*Presents*

**EXHIBIT**

## MOTION SECURITY ALARM





**Date:7 January 2026-9 January 2026**

**Time:9:30 am to 4:00 pm**

**Venue:PRAGYAN EXPO at MONTESSORI SCHOOL(A CAMP)**

# SYNOPSIS

As part of the Golden Jubilee Celebrations of the Montessori Group of Schools, St. Joseph's Degree College received an invitation from Montessori Senior Secondary School, Kurnool, to participate in the Mega Science Expo – 2026 (Pragyan Expo). The expo was a prestigious inter-institutional extension activity aimed at promoting scientific awareness, innovation, and interdisciplinary learning among students.

Responding enthusiastically to the invitation, the Department of Commerce and Management, SJDC, actively participated in the expo with the objective of bridging the gap between academic theory and real-world scientific applications. The event provided an excellent platform for interaction with students and faculty from various high schools, as well as participants from medical, engineering, and secondary education institutions.

The I Year Bcom. Students presented an integrated and visionary project titled “Motion Security Alarm”, A **Motion Security Alarm** is an electronic security system that detects movement in a specific area and triggers an alarm to alert people. It is commonly used in homes, offices, banks, and restricted areas to prevent theft or unauthorized entry. This project demonstrates how motion sensors and simple electronic circuits can be used to improve safety and security.

## Materials Required

- PIR (Passive Infrared) Motion Sensor
- Buzzer or Alarm
- LED Indicator
- Arduino board / simple transistor circuit
- Connecting wires
- Breadboard
- Power supply (battery)

## Working Principle

The system works using a **PIR motion sensor**, which detects infrared radiation changes caused by moving objects such as humans or animals. When motion is detected, the sensor sends a signal to the control circuit (such as an Arduino). The circuit then activates the **buzzer and LED**, producing an alarm sound and light to warn that motion has been detected.

## Procedure

1. Connect the PIR sensor to the control circuit or microcontroller.
2. Attach the buzzer and LED as output devices.
3. Provide power to the circuit using a battery.
4. When a person moves in front of the sensor, the PIR detects motion.
5. The buzzer sounds and the LED lights up to indicate detection.

Through PPTs and model demonstrations, the students effectively explained complex concepts related to **Motion Security Alarm** project demonstrates how motion sensors can be used to detect intruders and trigger an alert system in a manner easily understood by school students and visitors.

The project received high acclaim, with the Head of the Institution expressing deep appreciation for the unique integration A **Motion Security Alarm** is an electronic security system that detects movement in a specific area and triggers an alarm to alert people The students' ability to communicate sophisticated scientific ideas with clarity earned them widespread appreciation and Certificates of Appreciation.

Overall, the participation of SJDC in the Pragyan Expo was a resounding success and a meaningful contribution to the Golden Jubilee celebrations. The programme successfully fulfilled its objective of promoting science education, innovation, and collaborative learning, reinforcing the idea that *science is not merely a subject to be learned, but a world to be explored, a mystery to be solved, and a future to be built.*

**Students Participated:** Darga Sara Saniya and Sree Lakshmi I Boom

### **Objectives:**

- To design and demonstrate a simple **motion detection security system**.
- To understand how **motion sensors** detect movement.
- To learn the basic working of electronic components used in security systems.
- To show how technology can help protect property and people.

### **Outcomes / Results**

- The project successfully detects motion within the sensor's range.
- The alarm activates immediately when movement occurs.
- Demonstrates how motion sensors are used in real security systems.
- Shows a simple and cost-effective method for improving safety.

### **Conclusion**

The **Motion Security Alarm** project demonstrates how motion sensors can be used to detect intruders and trigger an alert system. It highlights the importance of technology in improving security and shows a practical application of electronics in everyday life

# GALLERY

