

## THE SMART ALARM SCHOOL BAG

**CLASS: IX**

**TEAM MEMBERS:** P. A .VINAY PRADYUN, RITHISH, MAIARASU, NITISH KUMAR & JAIBALAJI

Carrying heavy school bags is a significant issue for children, leading to health problems like shoulder and back pain, especially when climbing stairs. To address this, backpacks should have broad straps for better weight distribution and be properly adjusted, neither too loose nor too tight. The weight of schoolbags should be limited based on the student's grade, ranging from 1.5-2 kg for Class 1 and 2, up to 5 kg for higher classes . In general it should not exceed 10% of body weight of the child.

To tackle this problem, an innovative solution called the Smart Alarm School Bag has been developed. ***It automatically alarms when the weight exceeds a specific threshold***, reminding children and parents to re evaluate and remove unnecessary items, reducing the overall load. ***The bag incorporates a load sensor that detects minute changes in weight, HX711 Amplifier that amplifies this change, and Arduino IDE for data processing and calibration.***

### **Benefits:**

Implementing the Smart Alarm School bag help alleviate the burden on Children's shoulder and prevent long term health issues.

\*Parents and children can use the alarm as a reminder to check for unnecessary items in the bag and remove them, ensuring a light load