

## Problem Statement

With the increasing use of solar panels, maintaining their efficiency has become a significant challenge. Dust, debris, and lack of regular servicing reduce performance and lead to energy loss, yet users often overlook timely cleaning. To address this issue, the goal is to create a solar panel efficiency tracker device that continuously monitors output, detects drops in performance, and alerts the user when the panel needs cleaning or servicing. This ensures optimal efficiency, longer lifespan, and better energy generation.

## Project Team



SKYTAK

## Team Members

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## Solution

We developed an efficiency tracker that uses a voltage sensor to monitor the performance of solar panels, and whenever the voltage drops below the expected level, a buzzer begins to beep. This alert system helps users identify when cleaning or maintenance is needed. It improves monitoring by enabling better tracking of solar panel cleaning frequency and giving timely warnings when dust reduces power output. The system also simplifies data interpretation by converting technical readings into a clear, user-friendly format that anyone can understand. Designed as a cost-effective alternative to expensive monitoring devices, it provides an affordable and practical solution for rural areas. By offering clear and accessible information, it helps villagers maintain their panels more efficiently, extend system lifespan, and achieve reliable energy production.

