

SOLAR TRACKING AND NIGHT LIGHTING SOLUTION FOR ALANDI AREA

NAME	ROLL NO.	EXAM SEAT NO.	EMAIL
UMANG RAMTEKE	CS-01		202401100068 @ mitaoe.ac.in
GAURAV DHADGE	CS-07		202401100139 @ mitaoe.ac.in
HARSH DESAI	CS-16		202401100120 @ mitaoe.ac.in
YASH	CS-12		202401100067 @ mitaoe.ac.in
ABHINANDAN SHARMA	CS-42		202401100012 @ mitaoe.ac.in



Activity Sheet

GROUP MEMBERS:UMANG,GAURAV,HARSH,ABHINANDAN,YASH

PROJECT TITLE:SOLAR TRACKING AND NIGHT LIGHTING SOLUTION
FOR ALANDI AREA

Activities/Concerns:

1. Low light at night leading to safety concerns
2. Inefficient use of energy resources
3. Rising electricity costs for public lighting
4. Need for renewable energy adoption

Effect of Activity on Product, Special Notes

- 1.Maximizing Energy: Increases solar efficiency by 25-45%
- 2.Cost Savings: Reduces panel quantity, saving costs long-term
- 3.Sustainability: Supports campus green energy goals
- 4.Educational Use: Offers hands-on renewable energy learning
- 5.Improved Resilience: Ensures reliable power in off-grid areas



Environment Sheet

GROUP MEMBERS:UMANG,GAURAV,HARSH,ABHINANDAN,YASH



PROJECT TITLE:SOLAR TRACKING AND NIGHT LIGHTING SOLUTION
FOR ALANDI AREA

SUMMER MOST ELETRICITY IS PRODUCED	WINTER LESS ENERGY IS PRODEUCD	DAY ENERGY IS PRODUCED MORE THE BEING USED
MONSOON LEAST AMOUNT OF ENERGY IS PRODUCED		NIGHT ENERGY IS ONLY USED NOT PRODUCED

Possible Solutions:

- 1. Installing solar panels with a solar tracking system to improve efficiency
- 2. Implementing solar-powered streetlights to provide illumination at night
- 3. Introducing motion sensor-based lighting to optimize energy consumption
- 4. Using energy storage systems to reserve solar power generated during the day



<p>AEIOU Framework</p>	<p>Group ID:</p>	<p>Sheet No: 3</p>
<p>Interaction Sheet</p>	<p>GROUP MEMBERS:UMANG,GAURAV,HARSH,ABHINANDAN,YASH</p>	
	<p>PROJECT TITLE:SOLAR TRACKING AND NIGHT LIGHTING SOLUTION FOR ALANDI AREA</p>	
<p>Users Expectation About Product:</p> <ol style="list-style-type: none"> 1. Maximize solar energy capture through tracking systems 2. Provide efficient lighting at night to improve safety 3. Reduce reliance on conventional energy sources 		
<p>Summary of Interaction</p> <ol style="list-style-type: none"> 1.Regular Maintenance: Solar trackers require more upkeep than fixed systems due to moving parts 2.Cleaning Panels: Solar panels must be cleaned regularly to remove dust and debris that could affect performance, especially with trackers that move panels 		

Object Sheet

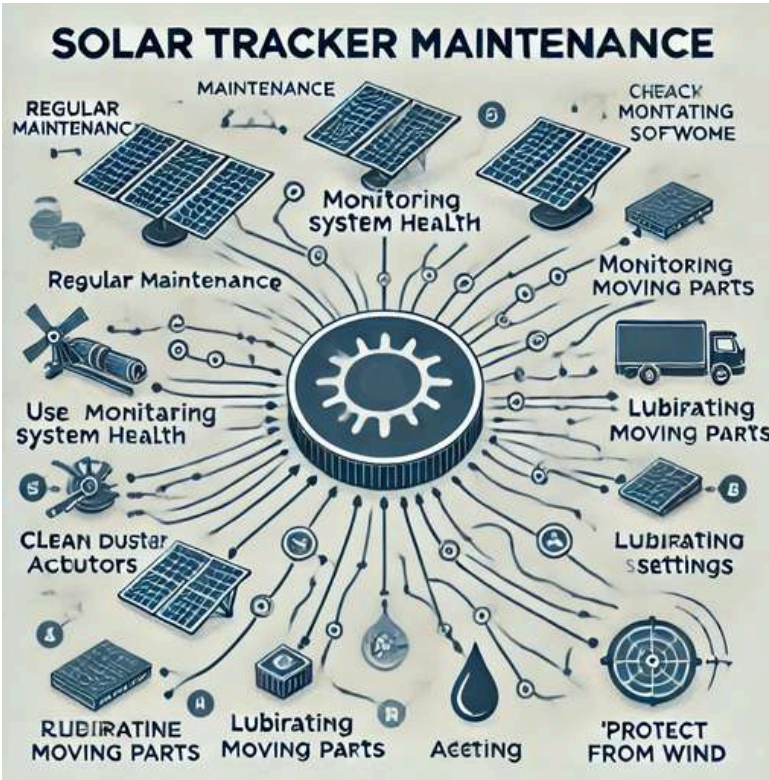
GROUP MEMBERS:UMANG,GAURAV,HARSH,ABHINANDAN,YASH

PROJECT TITLE:SOLAR TRACKING AND NIGHT LIGHTING SOLUTION FOR ALANDI AREA

List of Components Involved

- 1. Solar panels
- 2. Solar trackers
- 3. LED streetlights
- 4. Batteries for energy storage
- 5. Motion sensors
- 6. Metal frames for mounting solar panels
- 7. Cables and wiring

Diagram Showing Interaction Between Objects



User Sheet

GROUP MEMBERS:UMANG,GAURAV,HARSH,ABHINANDAN,YASH

PROJECT TITLE:SOLAR TRACKING AND NIGHT LIGHTING SOLUTION FOR ALANDI AREA

Target Users:

- 1. Local residents
- 2. Pilgrims
- 3. Municipal workers responsible for maintenance
- 4. Energy companies involved in solar infrastructure

Special Modification For Users/ Method of Use

- 1. *Dusk-to-Dawn Sensors*: Install sensors that automatically turn the lights on at dusk and off at dawn. This ensures the lights operate only when needed.
- 2.*Adjustable Brightness*: Incorporate dimmable LEDs that can adjust brightness based on ambient light levels, ensuring minimal light pollution while maintaining visibility.
- 3.*Battery Backup*: Include a battery backup system to ensure lights remain operational during cloudy days or in the event of low solar energy generation.



CONTRIBUTION DONE BY EACH MEMBER

UMANG RAMTEKE- ACTIVITY ,ENVIROMENT, INTERACTION AND PRODUCT DEVELOPMENT CANVAS

GAURAV DHADGE – OBJECT AND IDEATION SHEET

HARSH DESAI- EMPATHY MAPPING

ABHINANDAN SHARMA- USER SHEET

YASH GAURKAR- NOTHING(was unable to contribute due to his health issue)

THANK YOU!