20CYS333 IoT
SD Goals (Sustainable Development Goals)
Mapping To Project

PROJECT TITLE: IoT-Enabled Sleep Monitoring System for Analyzing Sleep Patterns
TEAM NUMBER: 20
PROBLEM STATEMENT: Monitoring health through sleep analysis by iot wearable

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1. Objective
To contribute to SDG 3 (Good Health and Well-being) by enhancing sleep health through innovative monitoring and early detection of sleep disorders, and to SDG 9 (Industry, Innovation, and Infrastructure) by fostering technological innovation in affordable and accessible IoT-based healthcare solutions.

2. Mapping SDGs to IoT-Enabled Sleep Monitoring System
The SDGs that we could match our project with are the following.

- **SDG 3: Ensure healthy lives and promote well-being for all at all ages**
- **SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.**

Now let us dive into this in detail.

- <u>**SDG -3**</u>

Detailed View:
The primary goal of this project is to monitor health through sleep analysis, which directly aligns with SDG 3: "Ensure healthy lives and promote well-being for all at all ages." By leveraging IoT-enabled wearable devices, the system tracks critical physiological parameters such as heart rate, respiratory patterns, and movement during sleep.

Inferences:
This helps users identify potential sleep disorders (e.g., insomnia, sleep apnea), detect irregularities in heart rate or breathing, and promote healthy sleep hygiene.

Importance:
Sleep is a foundational component of physical and mental health. Addressing sleep-related issues can reduce risks of chronic diseases like hypertension, diabetes, and cardiovascular disorders, thereby improving overall quality of life.

- **SDG -9**

Detailed View:
This project embodies the spirit of SDG 9: "Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation." By utilizing IoT technology to analyze sleep patterns, the system demonstrates innovation in the intersection of healthcare and technology.

Inferences:
The integration of sensors (PPG, piezoelectric, accelerometer, gyroscope), IoT platforms (ESP8266), and microcontrollers (Arduino Nano) showcases cutting-edge development in wearable health monitoring.

Importance:
IoT-enabled solutions provide affordable, accessible, and scalable healthcare infrastructure, especially for remote or underprivileged communities, thereby fostering equitable technological advancement.