CHITKARA UNIVERSITY INSTITUTE OF ENGINEERING & TECHNOLOGY, PUNJAB

DEPARTMENT OF INTERDISCIPLINARY COURSES IN ENGINEERING

Embedded Systems and Internet of Things Laboratory

Class Group: 6 | Section: B | Project Group: 4

Project Abstract

Project Title: *Smart Parkinson's Aid Spoon*

Abstract:

The Smart Parkinson's Aid Spoon is an assistive eating device for individuals with hand tremors. It uses an **IMU sensor** and **servo motors** to actively stabilize the spoon head, preventing spills and improving mealtime independence. An **ESP32** enables **IoT data logging** of tremor patterns, viewable by caregivers via a **Firebase-linked app** for remote monitoring. The design is compact, energy-efficient, and affordable, aiming to enhance user dignity and quality of life.

Application Area:

- Personal mobility aid for individuals with Parkinson's or essential tremor.
- Enhances independence in daily eating activities.
- Remote monitoring for caregivers and medical professionals.

Impact on Society/Industry: This project improves the mobility and safety for individuals with hand tremors, promoting independence and dignity through affordable assistive technology. It can be adopted by healthcare providers and NGOs to enhance quality of life and foster inclusive environments.

Sustainable Development Goals:

- **SDG 3:** Good Health and Well-being
- **SDG 9:** Industry, Innovation, and Infrastructure
- **SDG 10:** Reduced Inequalities

Technology Stack- ESP32, IMU (MPU6050), Miniature Servo Motors, LiPo Battery, Firebase, Mobile App

Group Details:

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