Smart Discipliner

Synopsis :

This iot project for building a habit controller that encoursages users to maintain healthy routines ,the device tracks the user activities like location ,content consumption and health data using sensor and machine learning algorithms ,
If the user misses workouts , visited undesired location or engages in unproductive content consumption then system evaluates the situation and delivers a mild shock and a give reason in phone notification for correct the action,
machine learning ensures personalized habit reinforcement by analyzing behavior patterns and making intelligent devisions about when to administer the shock ,

Objectives:

1. To design and develop a system that collects and analyzes behavioral data from multiple sources, including wearable devices, mobile apps, and browser activity.
2. To classify behaviors as "positive" or "negative" using AI/ML models based on predefined ethical guidelines.
3. To implement feedback mechanisms that encourage positive behavior and discourage negative behavior.
4. To prioritize ethical considerations, data privacy, and user consent throughout the project lifecycle.

Scope of Work:

1. Data Collection: – Utilize wearable devices to monitor physiological metrics such as heart rate, sleep patterns, and activity levels. – Develop a mobile application to track location and activity data. – Create a browser extension to log and categorize web usage patterns.

2. Data Analysis and AI Integration: – Build a centralized backend system to process data from all sources. – Develop AI/ML models to classify behaviors based on labeled datasets. – Use real-time processing to provide immediate feedback and long-term analytics.
3. Feedback Mechanisms: – Design non-aversive feedback options, including: – Haptic feedback (vibrations). – Visual cues (notifications, color changes). – Audio cues (gentle alerts or reminders). – Explore the

feasibility of aversive stimuli (e.g., mild electric shocks) within strict ethical and regulatory guidelines.

4. Testing and Validation: – Conduct controlled trials with voluntary participants to evaluate system effectiveness and user acceptance. – Refine AI models and feedback mechanisms based on participant feedback and observed outcomes.

Technological Requirements:

1. **Hardware**: –
    a) Wearable devices (e.g., smartwatches, fitness bands).
    b) Smartphones for running the mobile application.
    c) Shocker
    d) laptop/pc
2. **Software**: –
    a) AI/ML frameworks (e.g., TensorFlow, PyTorch).
    b) Mobile app development platforms (e.g., Flutter, React Native).
    c) Backend technologies (e.g., Node.js, Python, PostgreSQL).
3. **Infrastructure**: –
    a) Cloud services for data storage and processing (e.g., AWS, Google Cloud).
    b) APIs for seamless data integration between devices and applications.