**Project Title:** EnhancedStep Counter for Android Fitness App

**Sensors Involved:**

* Accelerometer: Measures acceleration forces, allowing the device to determine movement patterns and count steps. It can also detect orientation changes.
* Gyroscope: Helps in determining orientation and rotation, providing more precise information about the device's position. This is useful for detecting the type of activity being performed, such as running, cycling, or swimming.

**Main Goal Description:**

Our project aims to develop an enhanced step counter feature within an existing Kotlin-based Android Fitness App. By utilizing the smartphone's built-in sensors, our application will accurately track a user’s daily step count and provide additional metrics such as distance traveled, and calories burned. The goal is to encourage physical activity through precise tracking and motivational features, such as setting daily goals, progress tracking, and sharing achievements on social media platforms.

**Application Scenario Design:**

Imagine a user named Alex who is keen on maintaining a healthy lifestyle. Alex downloads our app and sets a daily goal of 5,000 steps. Throughout the day, the app quietly runs in the background, using the accelerometer to count steps and the gyroscope to ensure accuracy regardless of the phone's orientation. When Alex takes a morning walk, the GPS kicks in to map the route and calculate the distance. Upon reaching the goal, the app notifies Alex with a congratulatory message and the option to share this achievement. The app also provides a weekly report, giving Alex insights into the activity patterns and motivating him to maintain or increase the effort. It will feature user-friendly interfaces, provide analytics, and personalized recommendations to help users achieve fitness goals, optimize workouts, and make informed lifestyle choices, thereby promoting healthier, more active lives through wearable sensor technology.