Title – “Mann Shakti”

Abstract – The present innovation relates to self-identifying mental health status and get guidance for support. It will use a combination of Smart Watch and intelligent algorithms to detect status of the user.

Description – The Smart Watch and the Application comprises the following components:

Sensors: A study proposed a wearable sensor system that combines physiological measurements, such as heart rate variability and skin conductance, with contextual data, such as location and activity level, to detect stress and track its progression.

There are various types of sensors:

1. Accelerometer: An accelerometer measures acceleration, allowing the smartwatch to detect motion and orientation. It's used for functions like step counting, activity tracking, and screen orientation adjustment.

2. Gyroscope: A gyroscope measures angular velocity and helps determine the watch's orientation and movement. It's useful for more precise motion tracking, especially in activities like cycling and swimming.

3. Heart Rate Monitor (HRM): Typically an optical sensor, the HRM measures your heart rate by shining light into your skin and measuring how it scatters. It's commonly used for continuous heart rate monitoring during workouts and throughout the day.

4. GPS (Global Positioning System): GPS sensors enable location tracking and route mapping. They are essential for outdoor activities, navigation, and accurately calculating metrics like distance and speed.

5. Barometer/Altimeter: A barometer measures atmospheric pressure, which can be used to estimate altitude changes. This is particularly useful for hikers and climbers.

6. Thermometer: Some smartwatches have a built-in thermometer to measure ambient temperature. This can be useful for outdoor enthusiasts and monitoring temperature changes.

7. Ambient Light Sensor: This sensor measures the surrounding light levels and helps adjust the display brightness to save battery and improve visibility.

8. Skin Temperature Sensor: A few smartwatches include sensors that measure skin temperature, which can be useful for monitoring overall health and detecting potential fever or changes in body temperature.

9. Electrocardiogram (ECG or EKG): This sensor measures the electrical activity of your heart and can help detect irregular heart rhythms, such as atrial fibrillation. Not all smartwatches have this feature due to regulatory requirements.

10. Galvanic Skin Response (GSR): Also known as electrodermal activity (EDA), this sensor measures the electrical conductance of your skin. It can provide insights into stress levels and emotional responses.

11. Blood Oxygen (SpO2) Sensor: Measures the oxygen saturation in your blood. Monitoring SpO2 levels can help assess your overall respiratory health and detect issues like sleep apnea.

12. Bioimpedance Sensor: Some smartwatches use bioimpedance sensors to measure metrics like body composition, including muscle mass, fat percentage, and hydration levels.

13. Magnetometer (Compass): This sensor detects magnetic fields and is used for compass functionality, helping users navigate in various directions.

14. Capacitive Touch Sensor: While not technically a "sensor," the touchscreen on smartwatches uses capacitive touch technology to detect your finger's electrical charge and register touch input.

List of Watches:

1. Apple Watch Series 7: Apple's smartwatches have consistently featured a variety of sensors, including heart rate monitors, GPS, and accelerometers. The Series 7 offers improvements in fitness tracking and health monitoring.

2. Samsung Galaxy Watch 4: Samsung's Galaxy Watch 4 comes with a wide range of sensors, including an advanced heart rate monitor, blood oxygen level tracking, ECG (electrocardiogram), and body composition analysis.

3. Garmin Fenix 6 Pro: Garmin is known for its robust fitness and health features. The Fenix 6 Pro offers multiple sensors like GPS, heart rate monitor, barometric altimeter, and advanced sleep tracking.

4. Fitbit Sense: Fitbit Sense features an EDA (electrodermal activity) sensor, heart rate monitor, and a skin temperature sensor, making it a good choice for stress tracking and overall health monitoring.

5. Suunto 7: Suunto 7 is a sports-focused smartwatch that includes GPS, a heart rate monitor, altimeter, barometer, and more, making it ideal for outdoor enthusiasts.

6. Amazfit GTS 3: Amazfit's GTS 3 includes a heart rate monitor, SpO2 sensor, skin temperature sensor, and built-in GPS, offering a good balance of health and fitness features.

7. Polar Vantage V2: Polar's Vantage V2 is designed for serious athletes and includes a wide range of sensors for tracking workouts, recovery, sleep, and more.

8. Withings Steel HR Sport: Withings smartwatches are known for their elegant designs and health tracking capabilities. The Steel HR Sport includes a heart rate monitor and connected GPS.

9. TicWatch Pro 3: Powered by Google's Wear OS, the TicWatch Pro 3 includes a heart rate monitor, GPS, and a unique dual-display technology that extends battery life.

10. Xiaomi Mi Watch Revolve: Xiaomi's Mi Watch Revolve offers heart rate monitoring, sleep tracking, GPS, and a variety of sport modes at an affordable price point.

11. Huawei Watch GT 3: The Huawei Watch GT 3 features a heart rate monitor, GPS, and a SpO2 sensor for blood oxygen level monitoring.

12. Oppo Watch: Oppo's smartwatch includes a heart rate monitor, GPS, and various fitness tracking features.

Application: To deal with mental stress we have developed an app “Mann Shakti”. It will collect data from Smart Watch and analyse the mental state of the user, using machine learning(monitor heart rate, sleep & physiology) and if it finds case sensitive it will further transfer the data to the caretaker(Guardian/Doctor). It will also store the previous data of the user to deal with mental stress with more accuracy.