VIT®
CHENNAI
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

IEEE
Robotics &
Automation
Society

The Coders Department

SitSense

Healthcare

Team Members

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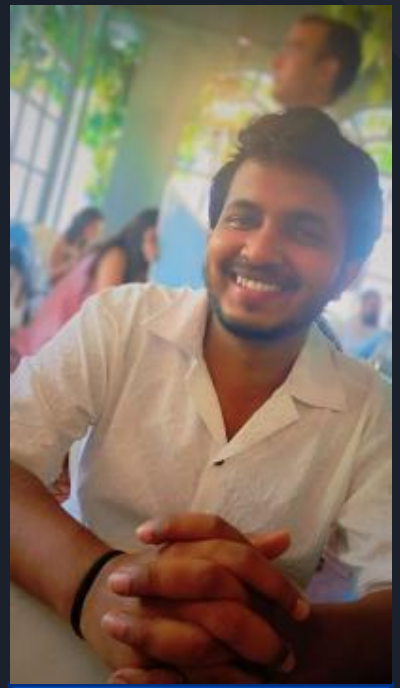

Priyansh Neel

Problem Statement

* Prolonged Sitting and Its Impact on Health in Office and IT Environments

- Prolonged sitting is a growing concern in the modern workplace, particularly in the IT sector and office environments, where employees often spend over 8 hours a day seated. Studies have shown that extended periods of sitting are linked to a 147% increase in cardiovascular events and a 49% increase in mortality from any cause, even when controlling for physical activity outside work hours. The sedentary lifestyle prevalent in these settings contributes to a range of health issues, including obesity, muscles disorders, and metabolic problems.
- Despite the clear health risks, many workplaces lack effective, real-time solutions to monitor and encourage healthy behaviors. Current interventions, such as periodic reminders to stand or stretch, are often insufficient and lack personalization.

Proposed Solution

To address the health challenges faced by individuals in the IT sector, offices, and coaching centers due to prolonged sitting, we propose an innovative IoT-based healthcare solution. Our solution combines a wearable device with a web-based platform to monitor, track, and improve the health of users in real-time.

1. Wearable IoT Device:

- The wearable will provide real-time data, allowing users to stay informed about their health status throughout the day.

2. Integrated Web Platform**:**

- A web platform with Health **Data Dashboard, Live Video Meetings, Exercise Guidance and Tracking.**

Proposed Solution

3. Web3 and Incentive-Based Wellness Program**:**

- **Rewards System:** Users who perform exercises accurately, as tracked by the web camera, will earn fungible tokens as a reward. These tokens will be built on Ethereum's blockchain, ensuring secure and transparent transactions.

4. Real-Life Impact**:**

- By continuously monitoring health and incentivizing physical activity, this solution aims to reduce the risks of long-term diseases caused by sedentary behavior.

Problems Addressed

01 Increased Risk of Chronic Diseases

02 Lack of Real-Time Health Monitoring

03 Insufficient Incentives for Healthy Behavior

04 Need for Integration of Health Monitoring and Wellness Programs

Target Users / Customer Segment

1. IT Professionals
2. Office Workers
3. Coaching Centers and Educational Institutions
4. HR Departments and Wellness Coordinators
5. Remote Workers

USP(Unique Selling Proposition)

1. Our wearable IoT device provides continuous monitoring of critical health metrics such as heart rate, oxygen levels, sitting time, and ECG, offering users real-time insights into their well-being.

2. The platform not only displays health data but also offers live video meetings, exercise guidance, and a unique Web3-based rewards system. Users can earn fungible tokens for accurately performing exercises, adding an engaging and motivating element to the platform.

3. The use of a web camera to track exercise movements ensures that users perform exercises correctly. This precision tracking is a significant differentiator, offering personalized feedback and making the wellness program more effective.

Go-to market plan

- We will launch a beta version of the product to a select group of companies, allowing us to gather valuable user feedback and optimize the product before a broader rollout.
- Partnerships will be key to our market entry. We will engage with corporate wellness programs, health-focused organizations, and insurance companie to endorse and integrate our solution into existing workplace wellness initiatives.
- We will introduce a referral program where companis and employees can earn rewards for bringing new users to the platform. This could include discounts on subscription fees, access to premium features.

Technology used & Dependencies.

1. React.js for building an interactive and responsive user interface.
2. Tailwind CSS for styling and design
3. WebRTC for real-time video communication and exercise tracking
4. Node.js with Express.js for creating a efficient backend server
5. MongoDB for storing user health data, rewards etc
6. MongoDB Atlas or Firebase for managed database services
7. Socket.io for enabling real-time video meetings and health updates too
8. Ethereum for creating and managing fungible tokens
9. Solidity for writing and deploying smart contracts
10. ESP32 or Arduino with Bluetooth/Wi-Fi capabilities for real-time data transmission

Technology used & Dependencies.

THERE ARE MORE TO INCLUDE IN TECH-STACK. LET ME ALLOW TO SHOW YOU AT

RASCADE

Advantage & Disadvantages

Disadvantage

Perception of Unprofessionalism

Time Management Challenges

Discomfort for Introverted Employees

Potential for Misuse

Advantage

Reduced Risk of Sedentary-Related Health Issues

Enhanced Productivity and Focus

Prevention of Posture-Related Issues

Improved Creativity and Support for Mental Health

Promotion of Work-Life Balance

Enhanced Workplace Culture

Conclusion

A corporate office should appreciate small movements because they are a simple yet effective way to enhance employee health, productivity, and overall well-being. By encouraging regular physical activity, even in small doses, companies can reduce the risks associated with prolonged sitting, such as physical discomfort and decreased mental clarity. This approach not only boosts individual performance but also fosters a more dynamic, engaged, and healthier workplace culture. As a result, organizations that embrace and promote small movements are likely to see improved employee morale, lower absenteeism, and a more resilient workforce, ultimately contributing to long-term business success.

References

01 www.Google.com

02 https://www.betterhealth.vic.gov.au/health/healthyliving/the-dangers-of-sitting

03 https://www.webmd.com/fitness-exercise/ss/slideshow-sitting-health

Thank you!