



GROUP NO.
ECSc-44

IoT Based wearable device for the safety and security of women and girl children

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Introduction

- The incorporation of IoT technology into wearables has created new opportunities in recent years to improve the health and safety of women and girls with devices that incorporate convenience and health monitoring functions with security features.
- An upsurge in crimes against women is our primary motivating factor. Our efforts seek an enhancement in women and girl child's safety by resisting the trend.
- The project is integrated into the wearable technology industry as a whole. It recognizes the need for research into new strategies that deliberately incorporate safety features into clothing and accessories, advancing the rapidly growing field of wearable security equipment.

Objectives

- Real-time location tracking and emergency alerts
- Discreet and user-friendly wearable design
- Advanced sensors for monitoring vital signs and detecting emergencies

Societal Impact

- Fostering a culture of community vigilance and responsibility, leading to increased overall safety awareness.
- Empowering individuals with timely access to emergency services, contributing to a more responsive and secure society.

Methodology

- A blend of modern technology and careful design elements is used to create a small, unobtrusive design for daily use, while also taking into account age- and kid-appropriate designs for devices aimed at female children.
- By allowing users to customize their bands and enclosures, the wearable's design contributes to its subtle and trendy appearance makes the device welcoming to children and tempting through the use of cheerful hues, engaging patterns, and age-appropriate designs.

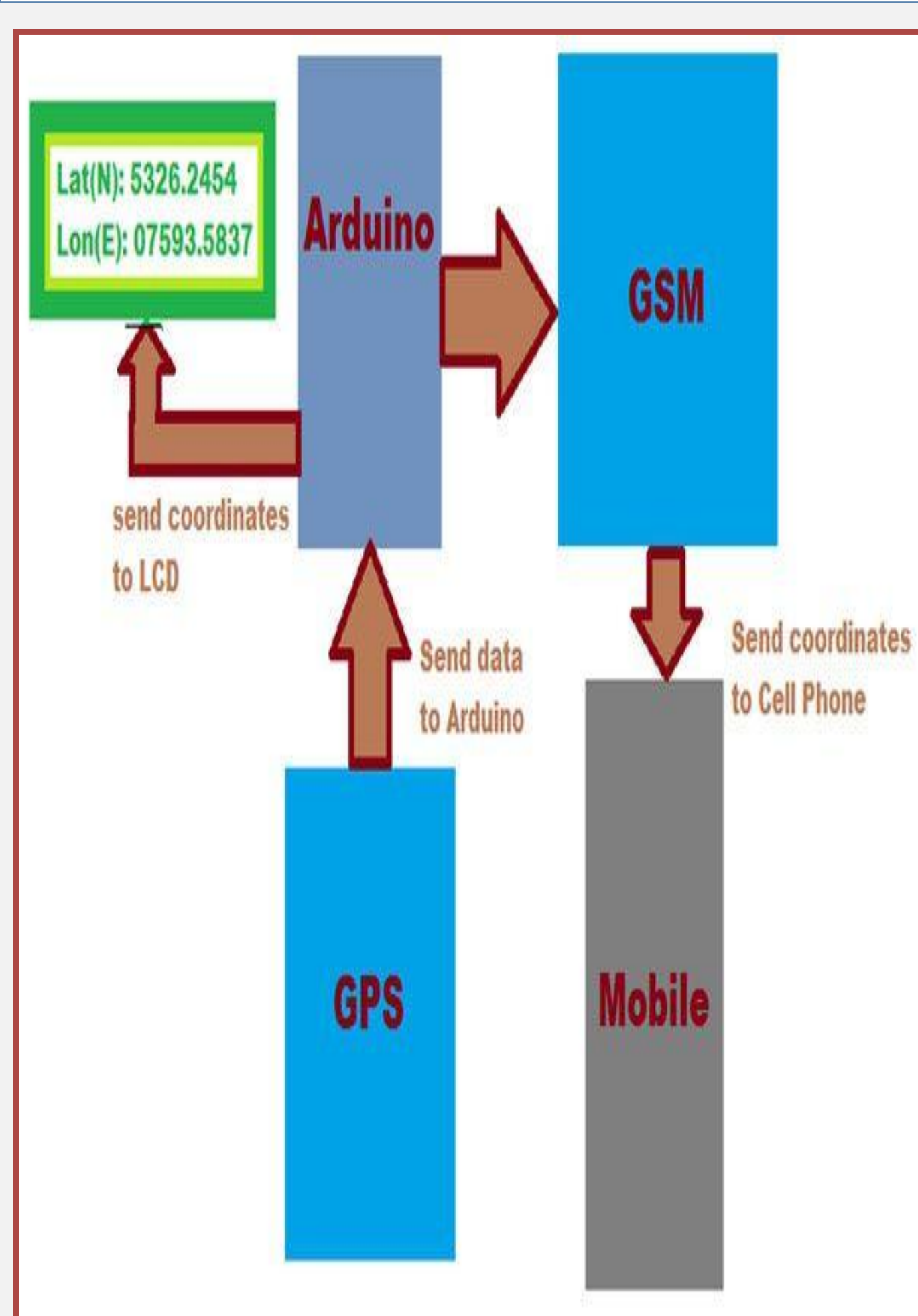


Fig: Block Diagram

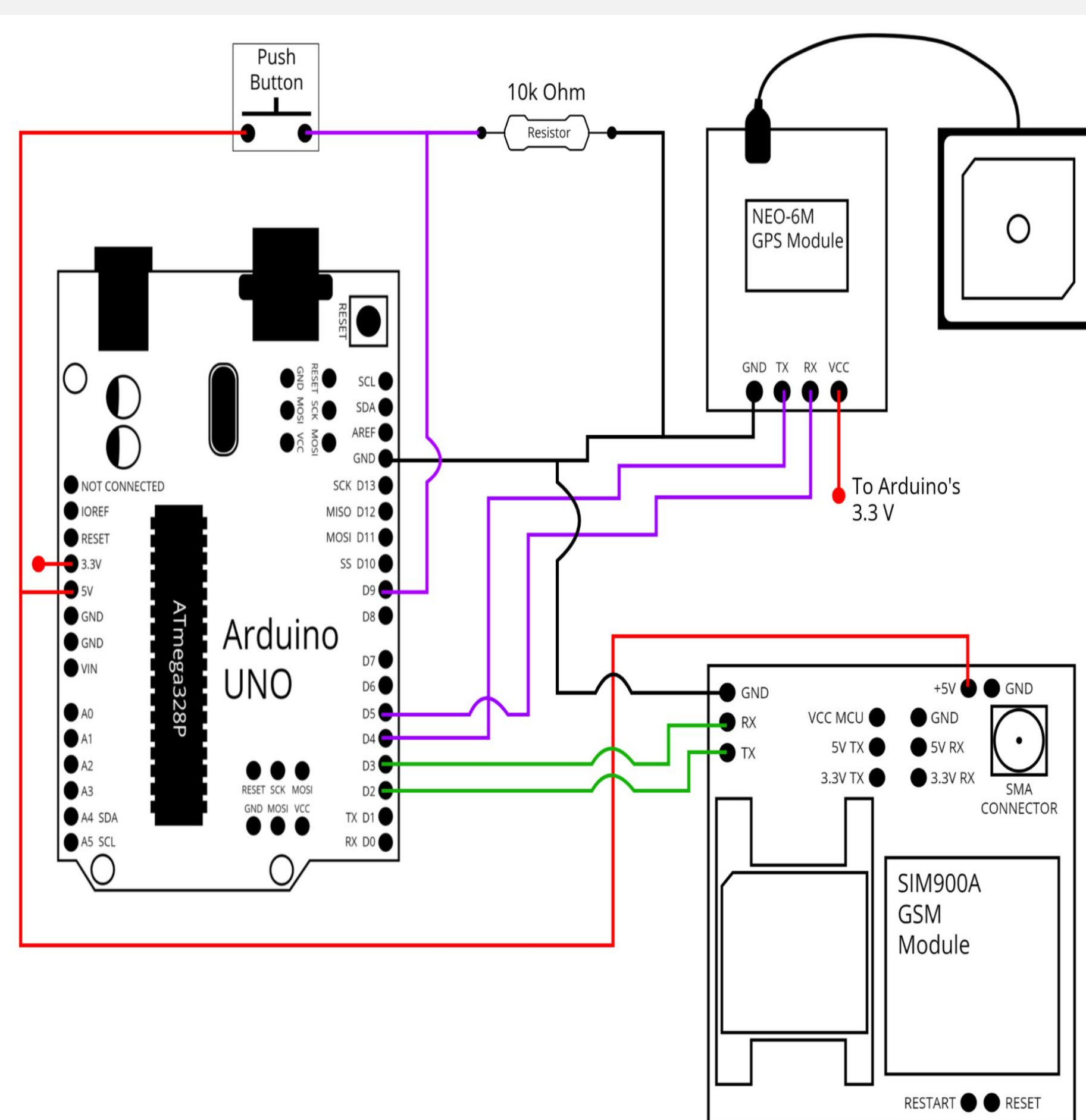


Fig: Location Tracker

Experimental/Simulation Outcome

- To ensure that the design and functionality of wearable devices for women's and girls' security were effective, a number of simulations and experiments were conducted. The objective of these trials was to evaluate the wearable device's overall performance, the accuracy of the physiological monitoring, and the dependability of the distress algorithms.

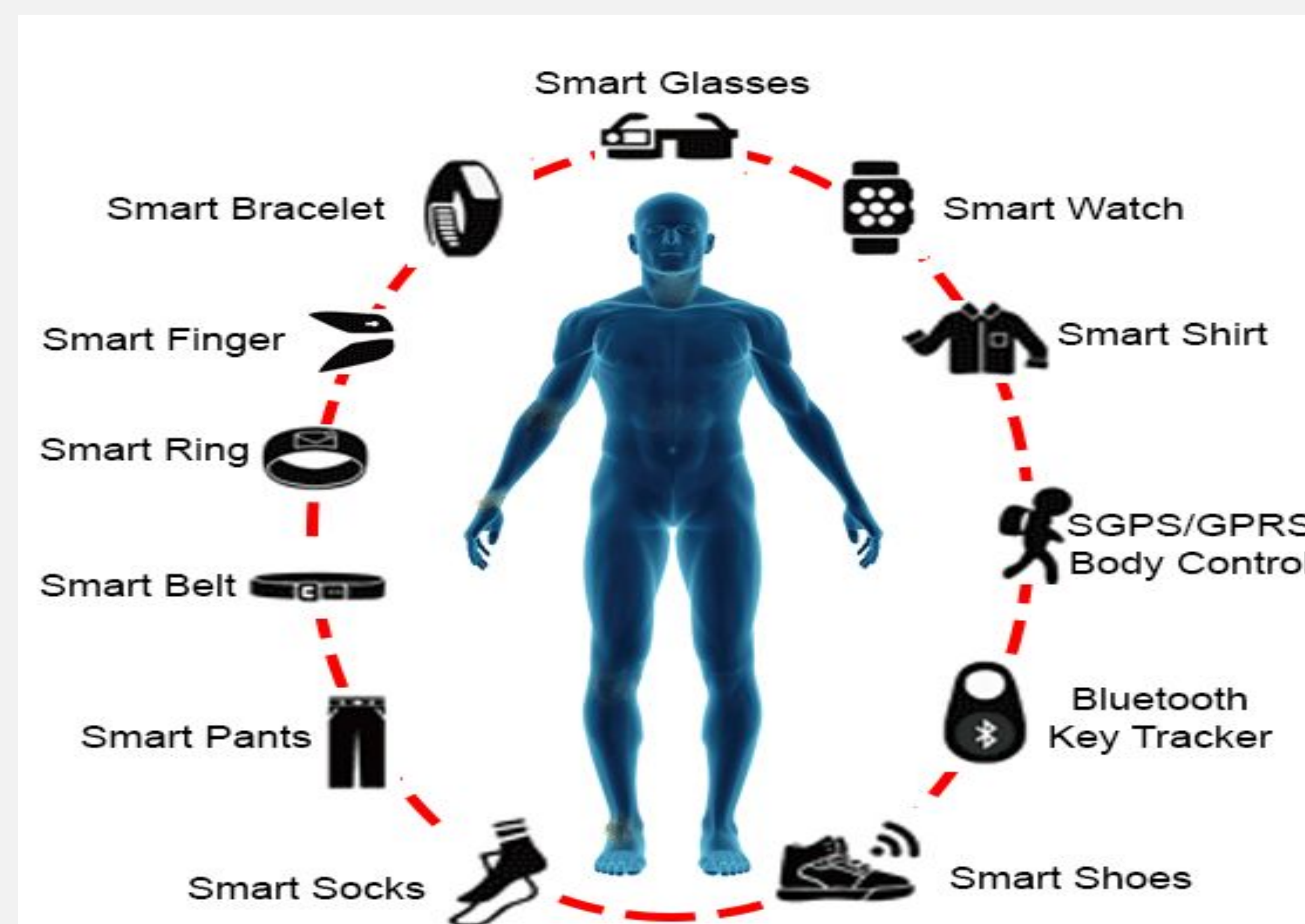


Fig: Suitable Devices

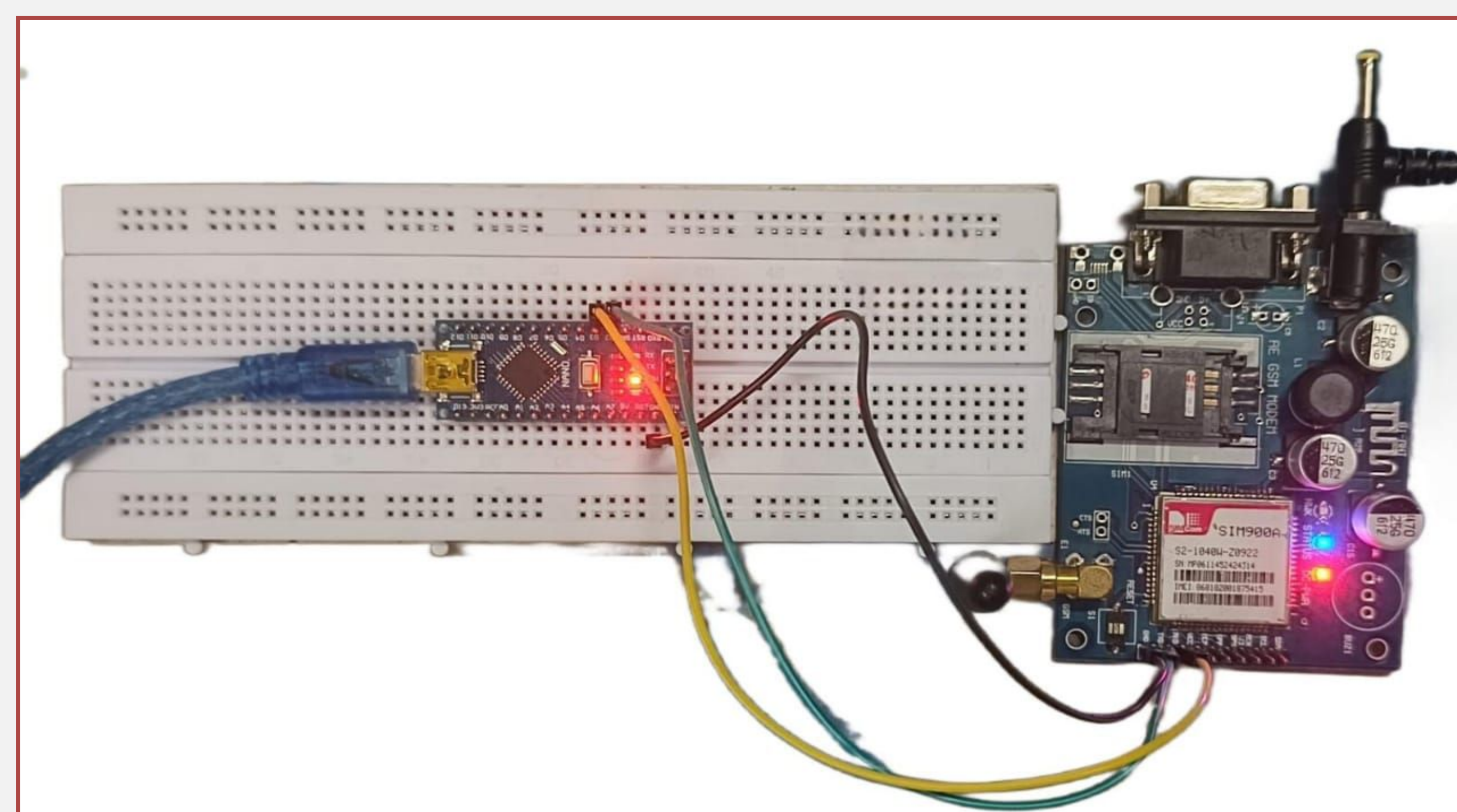


Fig: Prototype

Conclusions

- An important move toward promoting safety, autonomy, and general well-being has been made with the creation and application of IoT-based wearable technology for the protection of women and girls. The initiative goes beyond standard safety precautions through the use of modern technology to provide a complete solution that fits the target demographic's changing needs.
- This project's scope is to provide a comprehensive security approach that includes health monitoring, education, and community support features in addition to immediate safety concerns.
- Privacy issues are brought up by the gathering and tracking of physiological data. Upholding user privacy while using data for safety reasons is a challenging limitation that has called for careful consideration.

Future Work

- To decrease the size of the model, for ease of use
- Evolution towards AI-driven predictive analytics, anticipating potential threats and providing proactive safety measures
- Regular updates and improvements based on user feedback and technological advancements

References

- Wasim Akram, Mohit Jain, C. Sweetlin Hemalatha (2019). Design of a Smart Stay Device for Women Using IoT. In Proceedings of the International Conference On Recent Trends In Advanced Computing, Vellore Institute of Technology, Chennai, India.
- Prof. Sudhir Kadam, Dhruvil Parikh, Pallavi Kapoor, Shital Karnani "IoT based Wearable Safety Device for Women." International Journal of Engineering Research & Technology (IJERT), Vol. 9, Issue 05, May 2020. ISSN: 2278-0181.