

Empowering Women's Safety with Leveraging Advanced IoT Technology for Comprehensive Protection and Security

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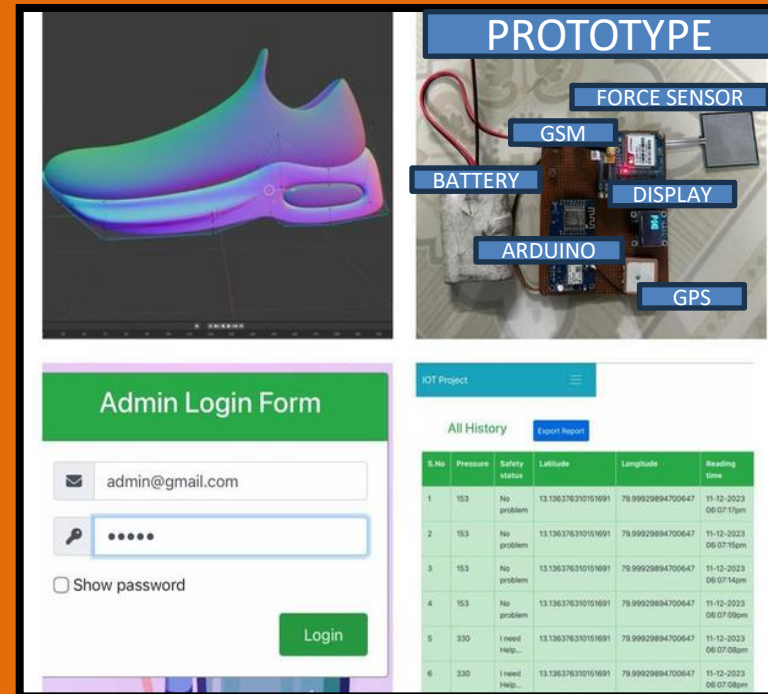
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ABSTRACT

Globally, women entail physical assault and harassment, which emphasizes the critical requirement for proactive and efficient safety measures. However, a lot of present technologies are inadequate and often lack comprehensive information protection, integration, and real-time responsiveness, which reduces user confidence and reliability. A complete integrated platform in the form of GUARDHER and GUARDIANSTEP has been designed to provide a safety system that serves women with precautionary measures. GUARDHER is a companion app, where the user has to register and create a secure wallet that contains their personal photo and other key information within a passkey protection. This application will be linked to GUARDIANSTEP, which consist of pair of shoes with the innovative feature of force sensor connected to a high-performance Microcontroller unit. Once the threshold pressure is applied by the user to the force sensor, it eventually results in transmission of the current location with their personal profile in the wallet to the control panel using Internet of Things (IoT) for immediate remedies. Within a delay time, the user has to deactivate/turn-off the emergency button via the application after entering the passkey of their respective wallet to prevent false alerts. The difference it holds from the current-day safety apps or devices, that it is a combination of personal profile protection, transfer of personal details along with their photo, real-time location tracking, and an advanced force sensor in footwear. It is a unique combo that offers user authentication, alerts in case of emergencies, delay time to turn it off and proactive safety measures that will build user confidence and responsive ability in extreme conditions. The "GUARDHER & GUARDIANSTEP" product offers a holistic solution by providing a secure platform and also ensures the integrating safety features in mobility, fostering a society where women can move freely with confidence and empowerment.

METHODOLOGY



The solution for this problem is to develop a smart footwear with integrated sensor, GPS and modules to activate real time tracking and transfer of personal profile which contains Name, Photo, Mobile number, Working place of respective users to Control panel in case of force sensor is to ensure the women is safe and secure.

ABOUT THE IDEA

- ❖ The product splits into two "GUARDHER" and "GUARDIANSTEP".
- ❖ At first GUARDHER is an application where user will initially register with their personal details which is particularly only for women. After registration, they will be creating a wallet inside the application with a passkey to secure the details they provided. The Wallet contains a safe profile of their,
 - Photo
 - Name
 - Mobile number
 - Working place
- ❖ All the details were mandatory to maintain a profile in our app. Once the profile is created, they can link their wallet to the control panel or control room. This application "GUARDHER" profile will be linked with their respective "GUARDIANSTEP" footwear.
- ❖ Secondly "GUARDIANSTEP" is a footwear integrated with a force sensor which gets activated once the user gives the pressure beyond the threshold limit with their foot. To distinguish the activation, the pressure threshold will be fixed slightly beyond the actual walking or running pressure by the foot. After the activation the current location of the user will be sent to the control panel as well as to the registered mobile number (parents/guardians). Then also the vibration motor which is fixed in their footwear gets activated to confirm the false alerts. If it is a false alert (randomly the sensor gets activated) the user can "Of" the vibration motor by entering into our application and to provide their particular Passkey they had given. If else the motor is destroyed or not turned off within a specific time limit, the profile in their wallet automatically sent to the control panel and the nearby police stations will get the needed information about the user with their photo. This footwear helps in faster recovery.