Our project focuses on the design and development of a new-age women's safety app, SHEild, that aims to provide a reliable and efficient solution to enhance the safety of women in potentially dangerous situations. The app will start operating when get triggered from an external wearable device (such as watch). The app is designed to trigger an SOS alert with location details based on multimodal data from a mobile device, such as audio, even in situations where the user may not be able to operate the mobile device.

During registration of user, provided information (such as mobile no. email, aadhaar etc.) is protected by the integration of Solana Blockchain technology and stored on the cloud server. Solana is a high-performance Blockchain platform that provides secure and  
transparent data storage and communication. Solana can quickly generate a block and accommodate up to 20,000 transactions in a single block. Thus, the platform charges low transaction fees as compared to Ethereum. The average cost per transaction on the Blockchain network is $0.00025, providing long-term financial  
stability. This enhances the overall security and reliability of the app, as the information can be securely stored and retrieved for future reference or legal purposes.

The Women Safety App is built using the latest advancements in hardware and software technologies. ESP-32, a low-power Wi-Fi and Bluetooth microcontroller, is used as the primary hardware component to enable seamless communication between the mobile  
device and the app. ESP-32's capabilities of data acquisition, motion detection, and wireless communication make it an ideal choice for our project.

Once the application is triggered, the app start collecting information(such as location, audio) and send it to a secure cloud server hosted on Google Cloud Platform. This ensures that the data is securely transmitted and stored and can be accessed by authorised personnel for further action.

One of the key features of our Women's Safety app is its ability to sense potential danger situations with the help of a triggering device, such as a watch, to signal the app and send an emergency SOS to an authorised person. This app identifies nearby police station and send the women details along with location details asking for help. It will also identify nearby app user and send them an SOS with location details asking for help. The app includes a trusted contacts feature that allows users to add trusted friends or family members  
who can be notified in case of an emergency. The app also includes a real-time location sharing feature that allows users to share their location with selected contacts, ensuring that their whereabouts are known to trusted individuals at all times. Our app uses the Google  
Maps API to accurately detect the user's location and provide real-time tracking for added security.

Triggering device include the microphone for audio data (we will sync the audio recorder of the smartphone with the application for collecting audio details) .

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In the event of no internet connectivity, the app will send an SMS to the members of the contact list asking for help. To perform this task, we will be using the Twilio API.

The Women's Safety App also includes a comprehensive settings menu that allows users to customise the app to their preferences. Users can set the sensitivity of the danger detection algorithms, adjust the audio and video recording settings, and configure other  
app-related settings. The app also includes a battery-saving mode that optimises the app's power.

The app can provide a platform for women to connect with a supportive community of other women and social workers. This can create a sense of solidarity and empowerment. We believe that our New Age Women Safety App has the potential to make a tangible  
impact on the lives of women around the world, creating a comprehensive solution that addresses the unique safety needs of women in the modern era.

The app's user interface is designed using Figma, a popular prototyping tool that allows for seamless collaboration and iterative design processes. The app's interface is designed to be user-friendly and intuitive, ensuring that users can quickly access  
and utilise the safety features, even in stressful situations. The app's interface is optimised for mobile devices, providing a seamless experience across different screen sizes and orientations. The Women's Safety App is built using Flutter, a powerful and versatile open-source UI toolkit developed by Google. Flutter allows  
for the efficient development of cross-platform applications with a single codebase, ensuring that the app is compatible with all android devices. Flutter's hot-reloading feature allows for rapid development and iteration, ensuring that the app can be quickly refined and improved based on user feedback.