https://doi.org/10.46335/IJIES.2024.9.6.17 **e-ISSN: 2456-3463**
Vol. 9, No. 6, 2024, PP. 77-80

International Journal of Innovations in Engineering and Science, www.ijies.net

Campus Guard

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***Received on**: 5 May,2024* ***Revised on**: 29 June,2024* ***Published on**: 01 July ,2024*

***Abstract**: CAMPUSGUARD APP is a location-based safety smartphone application. This application is specially designed for the security of the people around the campus When it comes to security concern, a smart phone can be one of the easiest way of gaining help. This project strives to create an android app which will help people to take control of there own safety We have created simple android application which comprises of various safety measures. This application allows users like students, faculty, staff, and non-staff to send an emergency notification to the campus security department by using a single sos emergency button or by sending alerts to there designated contacts which they have manually updated in there emergency list in the application. They just need to click the button; the campus security department will receive a real-time emergency notification from the person in danger. This message will include the victim's personal information and also the map position.*

Keywords— Campus Guard, Security Application, SOS, Android, GPS.

INTRODUCTION

Security has become a major concern in today's world, similarly security play an important role when it comes to the safety of the individuals within college community. As a student we are aware of the multiple incidents that one can face on daily basis like accidents, robbery, assaults, animal attacks, and many more so as a responsible member of our educational institution we are committed to provide a comprehensive safety solution for our campus, we are thrilled to introduce the CampusGuard project – a dedicated college campus safety app.

The CampusGuard app is designed to be an integrated and efficient safety tool. It takes user ID

(UID) / email and password of the user as an input for login activity by ensuring that it remains exclusive to our college campus. The app has many integrated safety features which will aid user to use this application in any panic or emergency situation.

The main feature of the app is Emergency SOS button which will give users the capability to quickly send alerts and immediately notify the college administration and users designated contacts in case of any untoward incidents. By just sending alert one can track the location of the person in danger and can take immediate action with the help of GPS location tracking.

By introducing the CampusGuard app, we are taking significant steps to prioritize the safety and well-being of every individual within our college, thereby reinforcing our commitment to a secure and supportive campus environment.

LITERATURE REVIEW

As we all know that Safety plays an important role in todays date. When we hear the word safety many things come to our mind like sexual assault, robbery, Accident and many more. Today we can see that crime against woman is increasing day by day thus many safety apps are developed for Women Safety. But safety should be provided for both gender and for all age people. We have decided to develop a project for our college campus.

The project we are Proposing is Specially for the college students, faculties or any other person within the campus.

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There are many already existing projects present in the market that works on safety of woman or students. Most of the projects are only for woman's safety but we have decided to create a project that will be beneficial for all types of people like Students, Faculties or Workers but only work for the people within the college campus who will register in the app. Some of the Already existing Application that we have referred are as follows:

A Research Paper on Android App for Women Safety: Kunal Kataria1, Rushikesh Khade2, Rohit Kurhade3, Amit Pende4, Prof. Sonal Chanderi5 (April 2023)

This project is designed by Kunal Kulkarni for women to provide them safety during a panic situation. For that user have to first register in the app to use it. In this app they provide a help button to the user and also the user can store three contact numbers of their closed ones or family members whom they can contact during the panic situation. They can also send pre written message which will be directly send to the contact numbers on clicking the help button.

Raksha: A Safety alert application: Bharti Sahu1, Ayushi Chandrakar2, Teshu Gaurav Singh3 (February 2022)

This project is developed by Bharti Sahul for both men and women. The application helps to track the live location of the user by using GPS and will also send SMS to the stored contact numbers and SMS will be send in time interval of 30 sec.

Shake2Safety App:

This App is very easy to use the user have to just shake their mobile phone or press the power button to send the SMS or call to the stored contact numbers. It works even without any internet connection.

Smart24x7 App :(2022)

This app is developed and designed for women's and senior citizens. The app will send an alert to emergency contacts in panic situation and will record the voices and take some photos during the panic situation and transfer it to the police as well as to the saved contact numbers.

METHODOLOGY

To address the campus safety challenges outlines in the problem statement, we propose a comprehensive methodology centered around the development and implementation of a Flutter application tailored for emergency situations and location tracking. The methodology encompasses the following key steps:

1. Requirement Gathering: Engage stakeholders including campus administrators, security personnel, and end users to gather insights and define key functionalities and features of the application.
2. Design and prototyping: Conceptualize the user interface (UI) and user experience (UX) of the application through wireframes, mockups, and interactive prototypes, allowing for iterative feedback and refinement.
3. Development: Code both the frontend and backend components of the application using the Flutter framework for the frontend UI and RESTful APIs for backend services, ensuring compatibility, reliability, and scalability.
4. Testing and Quality Assurance: Conduct rigorous testing and quality assurance throughout the development process, including unit testing, integration testing, user acceptance testing (UAT),
5. Performance testing, and security testing, to identify and address any bugs or usability issues.

This proposed methodology provides a systematic approach to developing and implementing the Flutter application for campus safety, ensuring its effectiveness, usability, and reliability in addressing the identified safety challenges.

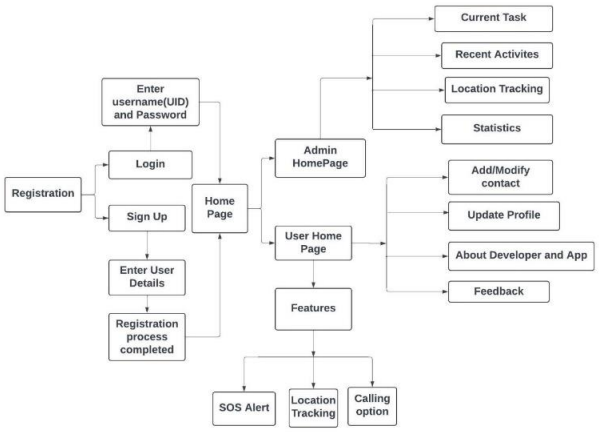

Fig 1. User Flowchart

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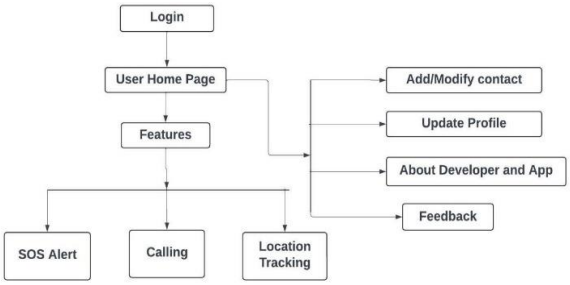

Fig 2. Admin Flowchart

A. FEATURES:

The Flutter application designed for campus safety encompasses a range of features aimed at providing timely assistance and enhancing safety protocols for students and faculty members. These features include:

- Real-Time Location Tracking: Integration of advanced location tracking technology, allowing campus security and emergency responders to pinpoint the exact whereabouts of individuals in distress, enhancing the efficiency of response efforts.
- Integration with Campus Resources: Seamless integration with campus maps and directories, providing users with access to essential information and resources during emergencies, such as emergency call boxes and designated safe zones.
- Customizable Emergency Contacts: Flexibility for users to customize their list of emergency contacts, including family members, friends, and campus authorities, ensuring that help is readily available when needed most.
- Notification Alerts and Updates: Instant delivery of notification alerts to users regarding emergency situations, campus safety advisories, and critical updates, keeping users informed and aware of potential risks.

These features collectively empower users with the means to quickly access assistance, communicate critical information, and navigate emergency situations with confidence and assurance.

EXPERIMENTAL RESULTS

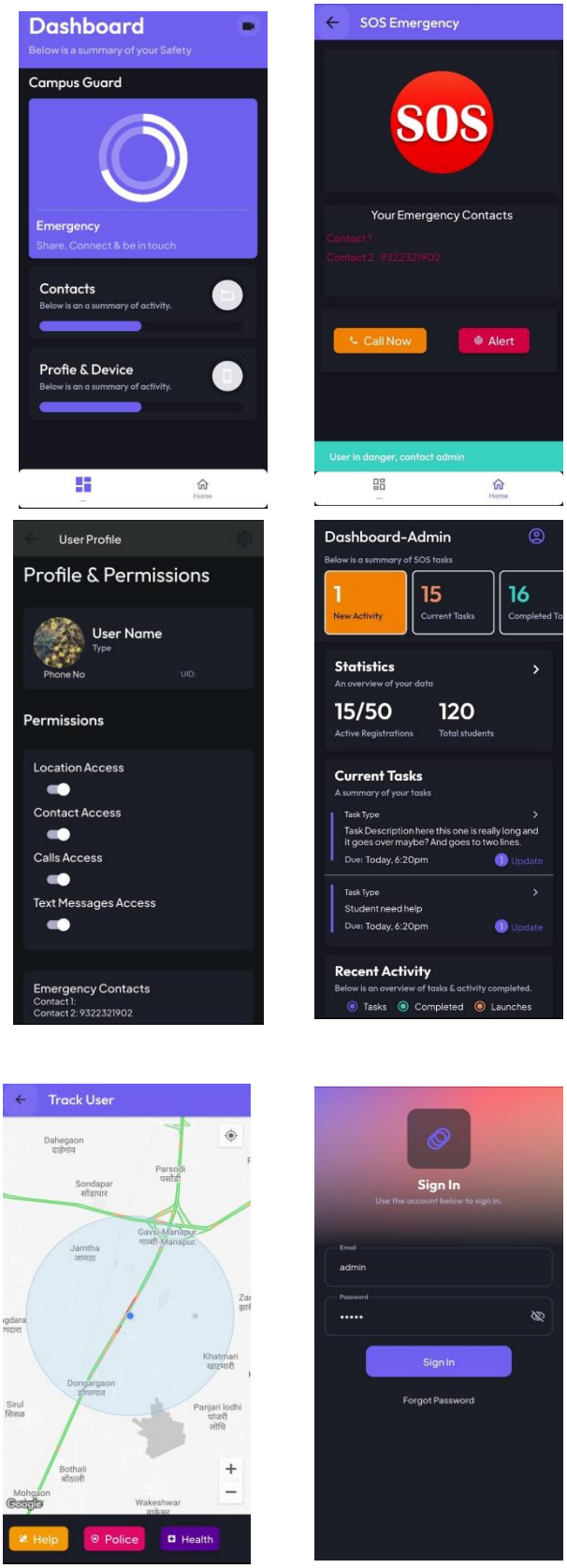

Fig-User Dashboard

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CONCLUSION

We have created a powerful tool that addresses the complex safety challenges faced by students, faculty, and campus staff.

In the future, the CampusGuard project aims to become a super-safe system for college campuses. It will use tech like AI to predict risks and set up virtual safe zones with GPS. Plus, it will work closely with emergency services to keep everyone safe. By listening to users and looking at data, it will keep getting better and better. As it grows to other schools, colleges, university campuses and adds wearable gadgets, it will be even more crucial for keeping students safe.

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