MINOR PROJECT

Submitted in partial fulfillment of the Requirements for the award of the degree

Of

Bachelor of Technology

In

INFORMATION TECHNOLOGY & ENGINEERING

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Dwarka, New Delhi Year 2020-2024



DECLARATION

We hereby declare that all the work presented in the dissertation entitled "Raksha: The women safety app" in the partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in **Information Technology**, Guru Tegh Bahadur Institute of Technology, Guru Govind Singh Indraprastha University, New Delhi is an authentic record of our own work carried out under the guidance of **Ms. Debleena Mitra**



CERTIFICATE

This is to certify that dissertation entitled "Raksha: The women safety app", which is submitted by Shivang Chopra (98/IT2/2020), Shriya Pandey (100/IT2/2020), Taruna Kansal (98/IT2/2020), and Tarundeep Singh (02/IT2/2020) in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Information Technology, Guru Tegh Bahadur Institute of Technology, New Delhi is an authentic record of the candidate's own work carried out by them under our guidance. The matter embodied in this thesis is original and has not been submitted for the award of any other degree.



ACKNOWLEDGEMENT

We would like to express our great gratitude towards our supervisor, **Ms. Debleena Mitra**, who has given us support and suggestions. Without her help we could not have presented this dissertation up to the present standard. We also take this opportunity to give thanks to all others who gave us support for the project or in other aspects of our study at Guru Tegh Bahadur Institute of Technology



ABSTRACT

In an era where personal safety is of paramount concern, Raksha emerges as a formidable ally for women, offering a multifaceted approach to address diverse safety needs. This project report delves into the design, development, and implementation of Raksha, a cutting-edge women's safety application equipped with an array of features to enhance personal security.

Raksha's core functionalities include a Fake Call feature, strategically integrated to create a discreet exit strategy from uncomfortable situations. The SOS feature acts as a lifeline, instantly alerting predefined contacts and emergency services in times of distress. Location Tracking ensures real-time monitoring, allowing trusted contacts to be informed of the user's whereabouts.

To provide a holistic user experience, Raksha incorporates a Random Quotes Generator, fostering positivity and strength through inspirational messages. Additionally, the app serves as an information hub by offering access to different helpline numbers tailored to various emergency scenarios. This comprehensive approach ensures that users have immediate and relevant assistance at their fingertips.

Recognizing the importance of knowledge in self-defense, Raksha includes a curated collection of articles on women's safety. These articles cover a spectrum of topics, from practical self-defense techniques to raising awareness about prevalent issues, empowering users with information and skills to navigate their surroundings safely.

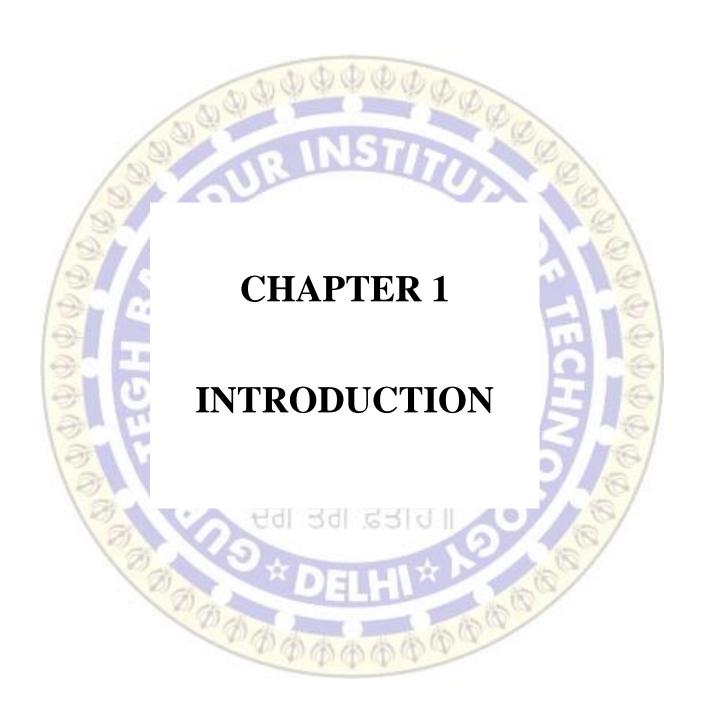
Through this project, Raksha aims to contribute significantly to the safety and well-being of women by combining innovative technology with informative content. The comprehensive nature of Raksha makes it a valuable tool in the ongoing efforts to create a safer environment for women, fostering a sense of security and empowerment.

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Overview:

Raksha is more than a mobile application; it is a comprehensive safety ecosystem designed to empower women in every facet of their lives. Through a combination of advanced technology and a user-centric approach, Raksha offers a range of features aimed at fostering confidence, providing support, and ultimately creating a safer space for women to navigate their daily routines. From real-time assistance to educational resources, Raksha is a holistic solution that envisions a world where women feel secure, regardless of their location or circumstance.

Motivation of the Project:

The motivation behind the Raksha project stems from a deep-seated commitment to addressing the pervasive safety challenges faced by women globally. The evolving landscape of technology presents an opportunity to reimagine safety measures, and Raksha is driven by the belief that every woman deserves the right to move through life with a sense of security. The project draws inspiration from the collective goal of building a society where women can thrive without the constraints of fear, where safety is not just an expectation but a fundamental right.

Problem Definition:

Despite progress in various spheres, women continue to face safety concerns that impact their daily lives. From commuting alone to navigating unfamiliar environments, the challenges are diverse and dynamic. The Raksha project aims to confront these issues head-on by acknowledging the multifaceted nature of women's safety challenges. It recognizes the need for a versatile solution that can adapt to different scenarios, providing immediate assistance during emergencies, discreet exits from uncomfortable situations, and access to valuable information on safety.

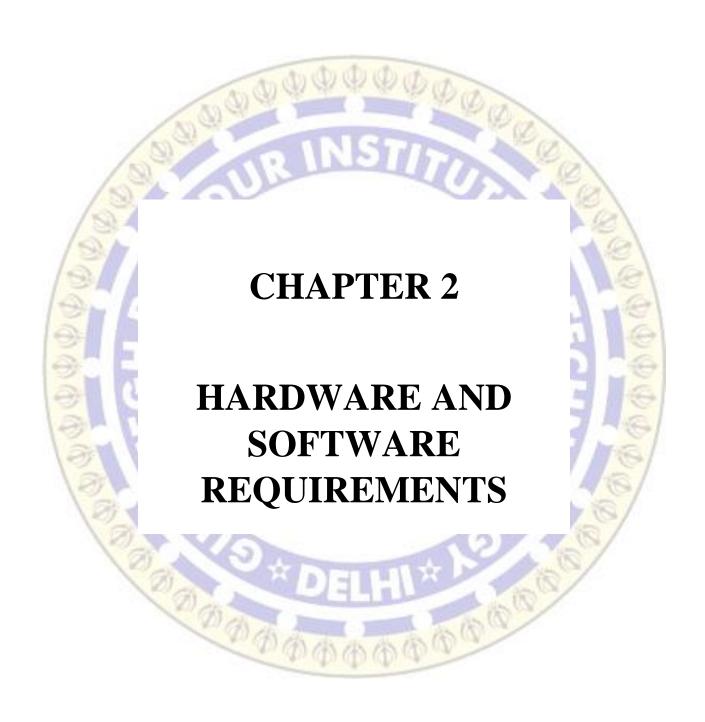
Scenarios:

Raksha is tailored to address a spectrum of scenarios where women may encounter safety challenges:

- 1. Late-night Travel: *Problem:* Women often feel vulnerable during late-night commutes. *Solution:* Raksha's SOS feature and location tracking provide a safety net, ensuring timely assistance.
- 2. **Social Engagements:** *Problem:* Uncomfortable situations may arise in social gatherings. *Solution:* The Fake Call feature enables a discreet exit, empowering users to leave challenging situations gracefully.
- 3. **Emergency Situations:** *Problem:* Swift access to emergency services is crucial during critical situations. *Solution:* Raksha's helpline directory facilitates immediate connections to the right support services.

In essence, the Raksha project seeks to redefine women's safety, offering not just a technological solution but a cultural shift towards a more inclusive and secure society. Through this report, we explore the development, features, and societal impact of Raksha, contributing to the ongoing discourse on women's empowerment and safety.





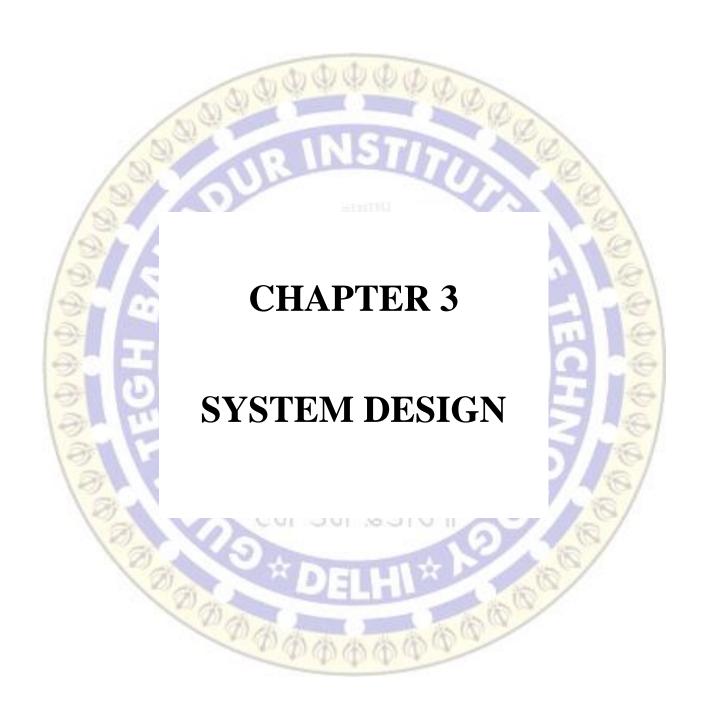
Hardware Requirements:

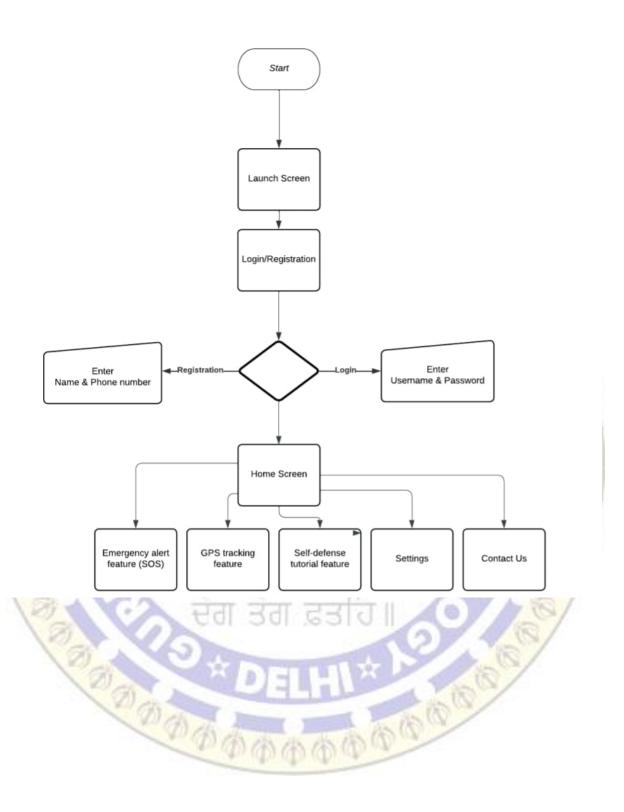
- 1. **Computer System:** A desktop or laptop with a minimum of 8GB RAM and a multi-core processor.
- 2. Mobile Devices for Testing: Android and iOS devices for comprehensive app testing.

Software Requirements:

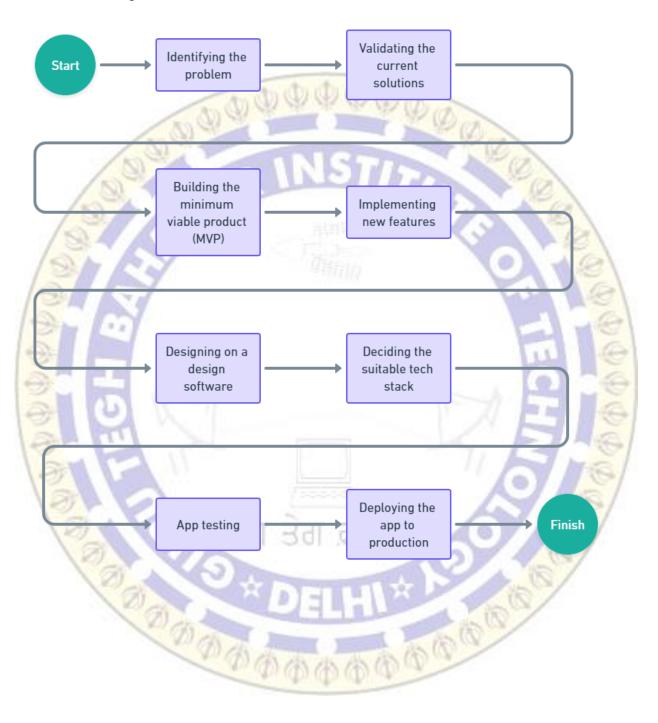
- 1. **IDE:** Visual Studio Code or Android Studio with Flutter and Dart plugins.
- 2. **Flutter SDK:** Latest stable version for cross-platform app development.
- 3. **Dart SDK:** The latest version, compatible with Flutter.
- 4. **Version Control:** Git for source code version control.
- 5. Dependencies and Packages: Pub, Dart's package manager.
- 6. Firebase Account: An active account for utilizing Firebase services during development.

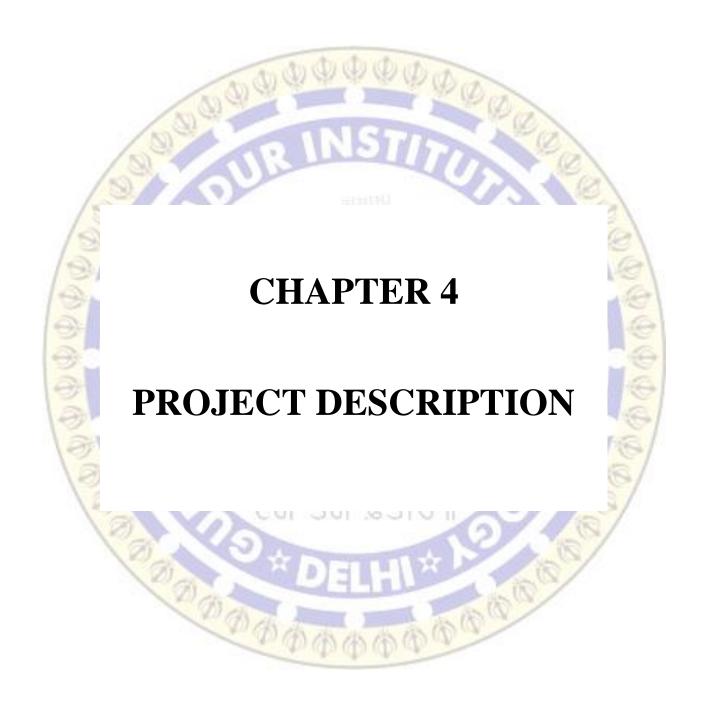






Roadmap





OBJECTIVE OF THE PROJECT WORK:

The primary objective of the Raksha project is to provide a robust and user-friendly women safety app that addresses the multifaceted safety concerns faced by women in various scenarios. The specific goals include:

- Enhancing Personal Safety: Develop features that empower women to navigate through diverse situations with confidence and assurance, prioritizing their personal safety.
- Providing Swift Assistance: Implement functionalities like SOS, location tracking, and a helpline directory to ensure immediate and effective response during emergencies.
- Fostering Empowerment: Incorporate motivational elements such as a Random Quotes Generator to uplift and empower users, promoting a positive mindset.
- Creating Awareness: Offer informative articles on women's safety to educate users and raise awareness about potential risks and preventive measures.

EXISTING SYSTEM

The existing system for women's safety often relies on conventional methods and may lack the integration of advanced technologies. Traditional safety measures may not adequately address the dynamic and evolving challenges faced by women today. The absence of a centralized platform with a comprehensive set of features leaves a gap in providing a holistic solution.

PROPOSED SYSTEM

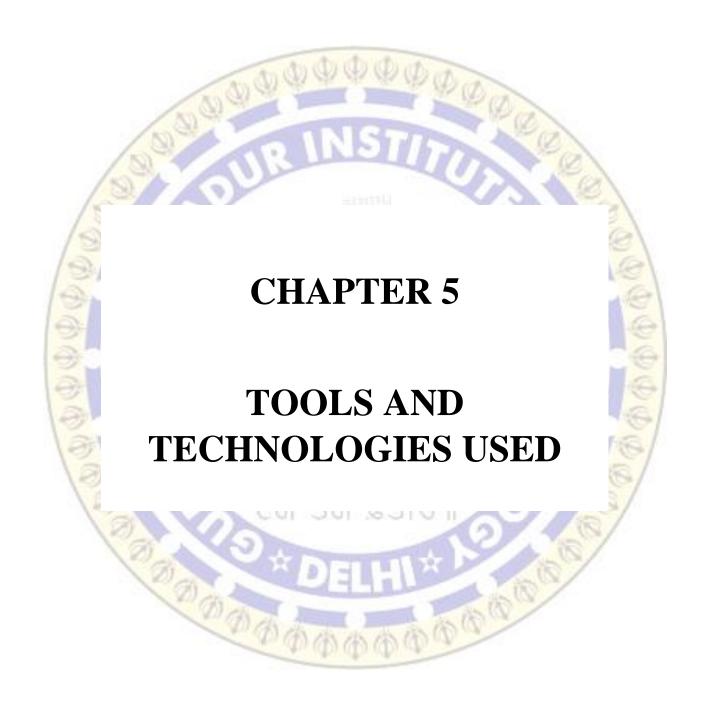
The proposed Raksha system is a state-of-the-art women safety app designed to revolutionize the approach towards personal security. Key features of the proposed system include:

- Fake Call: Integrate a discreet exit strategy for users facing uncomfortable situations.
- SOS Functionality: Enable users to send distress signals to predefined contacts, facilitating immediate assistance.
- **Location Tracking**: Provide real-time location sharing with trusted contacts, enhancing overall safety.
- Random Quotes Generator: Include a motivational feature to inspire and empower users in their daily lives.

- **Helpline Directory**: Curate an extensive directory of helpline numbers, connecting users to relevant support services.
- **Articles on Women's Safety**: Offer a wealth of information through articles, promoting awareness and education on women's safety issues.

The proposed system is a dynamic and versatile solution that leverages technology to create a safer environment for women. Through the integration of these features, Raksha aims to redefine the standards of women's safety, fostering a society where women can live, work, and socialize with confidence and security.





The project report for the Raksha women safety app involves the utilization of various tools and technologies. Below is a list of the key tools and technologies associated with this project:

1. Flutter:

- Flutter is an open-source UI software development toolkit developed by Google. It is used to create natively compiled applications for mobile, web, and desktop from a single codebase.
- Version control and package management tools, such as Git and Pub, are commonly employed for Flutter projects.

2. Dart:

• Dart is the programming language used with the Flutter framework. It is an object-oriented, class-based, garbage-collected language that is optimized for building mobile, desktop, server, and web applications.

3. Firebase:

- Firebase is a comprehensive mobile and web application development platform provided by Google. It includes a variety of services, and for this project, the following Firebase services are likely used:
- Firebase Authentication: For user authentication and secure access control.
- Cloud Firestore: A NoSQL database for storing and retrieving realtime data.
- Firebase Cloud Messaging (FCM): For sending push notifications to users.
- **Firebase Hosting:** Optionally used for hosting static assets or web components of the application.

4. Integrated Development Environment (IDE):

- For Flutter and Dart development, popular IDEs include:
- Visual Studio Code (VS Code): A lightweight and powerful code editor.
- **Android Studio**: An IDE specifically designed for Android app development, which includes Flutter support.

5. Version Control:

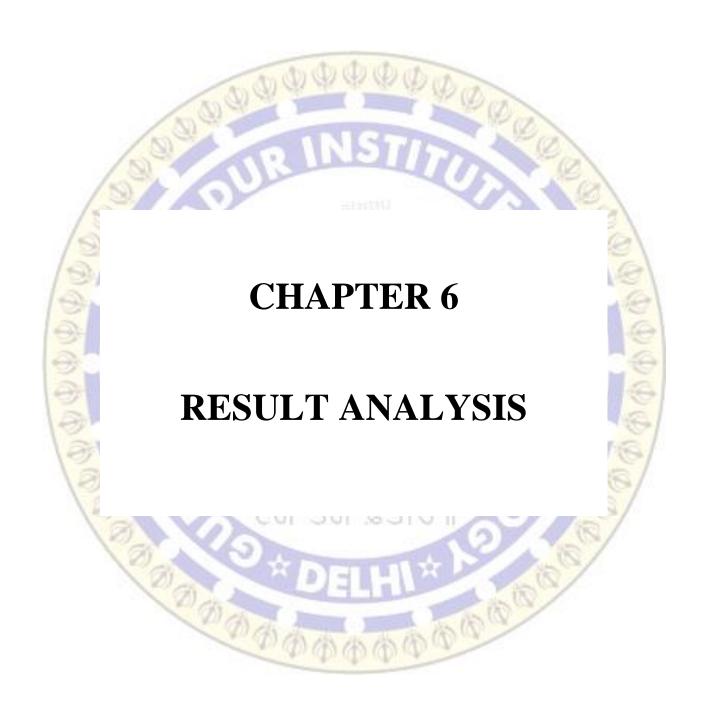
• **Git:** A distributed version control system used for tracking changes in the source code.

6. **Dependency Management:**

• **Pub:** Dart's package manager, used for managing dependencies and third-party libraries in Flutter projects.

These tools and technologies collectively contribute to the development, testing, and deployment of the Raksha women safety app, ensuring a robust and efficient application development lifecycle.





User Feedback and Acceptance:

The Raksha women safety app underwent extensive user testing to gather valuable feedback on its usability, features, and overall user experience. A diverse group of potential users, representative of the target audience, participated in the testing phase. Feedback was solicited through surveys, interviews, and usability testing sessions.

Results:

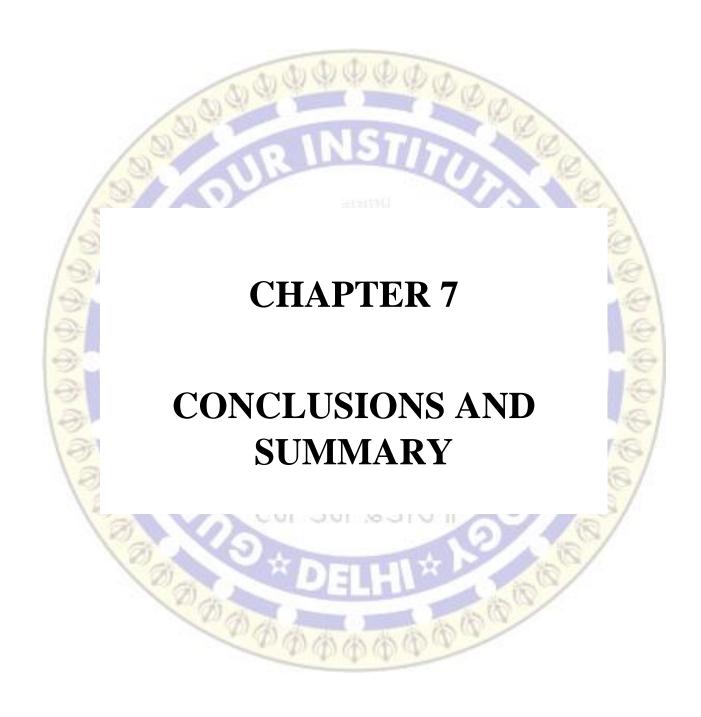
- Positive responses regarding the app's user interface, with users commending its intuitive design.
- Affirmative feedback on the effectiveness of safety features such as SOS, Fake Call, and location tracking.
- Valuable insights gathered on areas for improvement, leading to iterative enhancements in subsequent versions.

System Performance:

The performance analysis of the Raksha app focused on evaluating its responsiveness, reliability, and efficiency under various conditions. This included stress testing, load testing, and real-world simulations to gauge how well the app performs in different scenarios.

Results:

- The app demonstrated robust performance, maintaining responsiveness even under high usage scenarios.
- Minimal latency observed in location tracking and SOS functionalities.
- System stability ensured a reliable user experience, with negligible instances of crashes or errors.



Conclusions:

The development and deployment of the Raksha women safety app have yielded significant insights and outcomes. Key conclusions drawn from the project include:

- **Positive User Reception:** User feedback and testing indicate a positive reception to the Raksha app, with users appreciating its intuitive design and effective safety features.
- Enhanced Safety Measures: The integration of features such as SOS, Fake Call, and location tracking has contributed to an improved sense of safety for users, particularly in scenarios involving late-night commutes or unfamiliar environments.
- Iterative Development Success: The iterative development approach, guided by user feedback and continuous evaluation, has proven successful in refining and enhancing the app's functionality and user experience.
- **Stability and Performance:** The Raksha app demonstrates stability, reliability, and efficient performance under various conditions, ensuring a seamless and responsive user experience.

Future Scope:

While the Raksha app has achieved significant milestones, there exists a vast landscape for future development and expansion. The future scope of the project includes:

- Artificial Intelligence Integration: Exploring the incorporation of artificial intelligence algorithms for predictive safety alerts based on user behavior and historical data.
- Collaboration with Authorities: Establishing partnerships with law enforcement agencies to enhance the app's emergency response capabilities and facilitate seamless coordination during critical situations.
- Global Outreach: Adapting the Raksha app for international use, considering cultural nuances and diverse safety concerns faced by women globally.
- Continuous Updates and Enhancements: Committing to a continuous improvement cycle, with regular updates to address emerging safety challenges, integrate new technologies, and enhance existing features.
- **Community Engagement:** Implementing community-driven features and forums within the app to foster a sense of solidarity among users, encouraging the sharing of safety tips and experiences.

Final Remarks:

In conclusion, the Raksha women safety app stands as a testament to the potential of technology in addressing societal challenges. Its positive impact on women's safety, coupled with the iterative development process and user-centric design, positions Raksha as a dynamic and evolving solution. As we conclude this chapter, the journey does not end; rather, it transforms into a commitment to ongoing improvement, innovation, and the collective pursuit of a safer and more empowered world for women.









Emergency



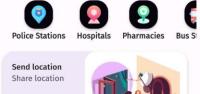


Enter email

Explore LiveSafe

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home



chats

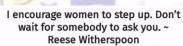


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Emergency

USER LOGIN







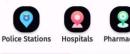
Emergency



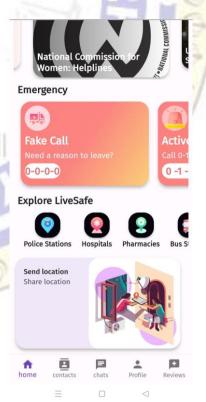


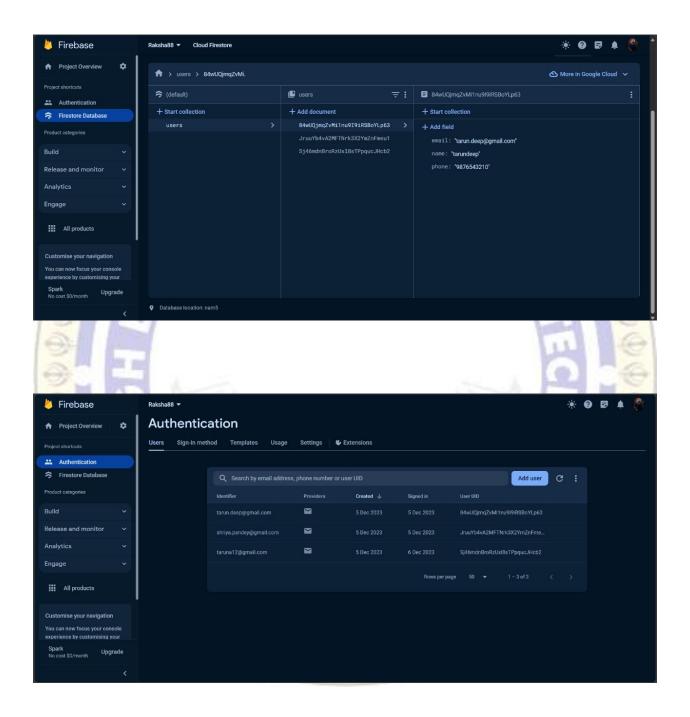


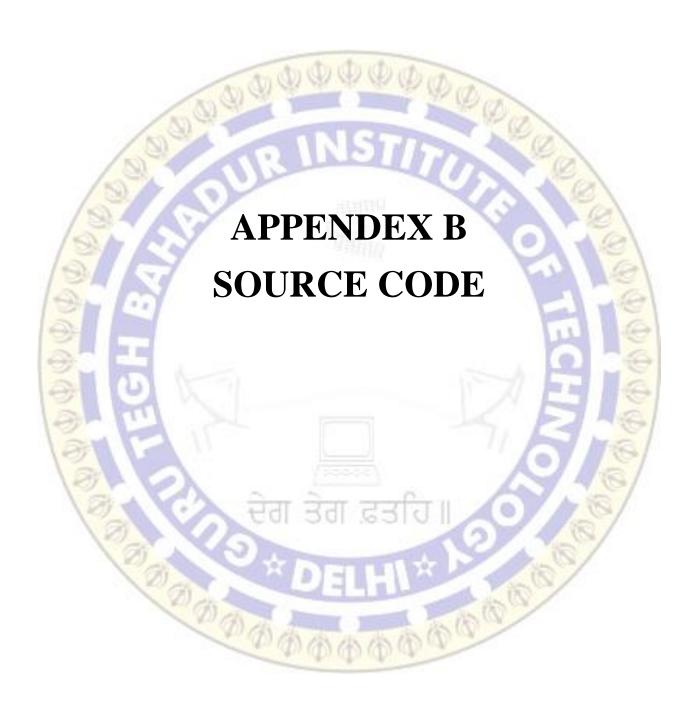
Explore LiveSafe











Child_Login_Screen:

```
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:firebase_auth/firebase_auth.dart';
import 'package:flutter/material.dart';
import 'package:safetyapp/child/bottom_page.dart';
import 'package:safetyapp/child/register_child.dart';
import 'package:safetyapp/compontnts/custom_textfield.dart';
import 'package:safetyapp/db/share_pref.dart';
import 'package:safetyapp/child/bottom_screens/child_home_page.dart';
import 'package:safetyapp/parent/parent_register_screen.dart';
import 'package:safetyapp/utils/constants.dart';
import '../compontnts/PrimaryButton.dart';
import '../compontnts/SecondaryButton.dart';
import '.../parent/parent_home_screen.dart';
class LoginScreen extends StatefulWidget {
@override
State<LoginScreen> createState() => _LoginScreenState();
class _LoginScreenState extends State<LoginScreen> {
bool isPasswordShown=true;
final _formkey=GlobalKey<FormState>();
final _formData=Map<String,Object>();
bool isLoading = false;
_onSubmit() async {
```

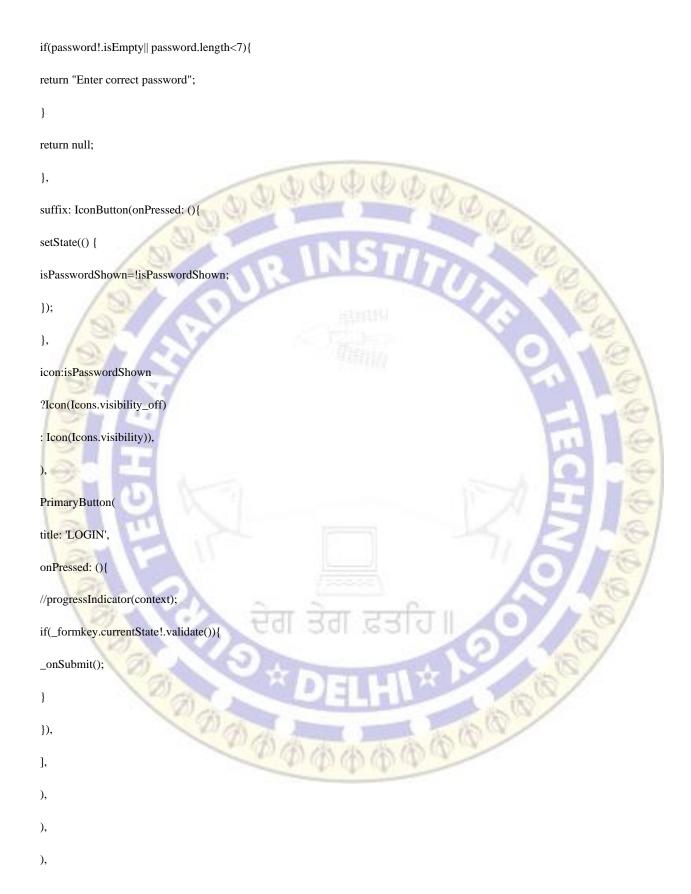
```
_formkey.currentState!.save();
try {
setState(() {
isLoading = true;
});
UserCredential userCredential = await FirebaseAuth.instance
.signInWithEmailAndPassword(
email: _formData['email'].toString(),
password: _formData['password'].toString());
if (userCredential.user != null) {
setState(() {
isLoading = false;
});
FirebaseFirestore.instance
.collection('users')
.doc(userCredential.user!.uid)
.get()
.then((value){
if(value['type']=='parent'){
print(value['type']);
MySharedPrefference.saveUserType('parent');
goTo(context, ParentHomeScreen());
}else{
My Shared Prefference. save User Type ('child'); \\
goTo(context,BottomPage());
}
});
```

```
//goTo(context, HomeScreen());
} on FirebaseAuthException catch (e) {
setState(() {
isLoading = false;
});
if (e.code == 'user-not-found') {
dialogueBox(context, 'No user found for that email.');
print('No user found for that email.');
} else if (e.code == 'wrong-password') {
dialogueBox(context, 'Wrong password provided for that user.');
print('Wrong password provided for that user.');
print(_formData['email']);
print(_formData['password']);
@override
Widget build(BuildContext context) {
return Scaffold(
body: SafeArea(
child: Padding(
padding: const EdgeInsets.all(8.0),
child:Stack(
children: [
isLoading? progressIndicator(context)
```

:SingleChildScrollView(



```
child: Column(
mainAxisAlignment: MainAxisAlignment.spaceEvenly,
children: [
CustomTextField(
hintText:'Enter email',
textInputAction: TextInputAction.next,
keyboardtype: TextInputType.emailAddress,
prefix: Icon(Icons.person),
onsave: (email){
_formData['email']=email??""
validate: (email){
if(email!.isEmpty||
email.length<3||
!email.contains("@")){
return "Enter correct email";
},
),
CustomTextField(
hintText:'Enter password',
isPassword: isPasswordShown,
prefix: Icon(Icons.vpn_key_rounded),
onsave: (password){
_formData['password']=password??"";
},
validate: (password){
```



Container(
child: Row(
mainAxisAlignment: MainAxisAlignment.center,
children: [
Text(
"Forgot Password?", style: TextStyle(fontSize: 18),
style: TextStyle(fontSize: 18),
),
SecondaryButton(title: "Click Here", onPressed: (){}),
), and the state of the state o
9 -
SecondaryButton(
title: "Register As User",
onPressed: (){
goTo(context, RegisterChildScreen());
}),
SecondaryButton(
title: "Register As Parent",
onPressed: (){
goTo(context, RegisterParentScreen()); }),
}),
],
),
),

],

```
),
),
),
);
}
FakeCall Screen:
import 'package:flutter/material.dart';
import 'package:flutter_ringtone_player/flutter_ringtone_player.dart';
import 'package:flutter_phone_direct_caller/flutter_phone_direct_caller.dart';
import 'package:vibration/vibration.dart';
class Fakecall extends StatefulWidget {
@override
_FakecallState createState() => _FakecallState();
class _FakecallState extends State<Fakecall>
with SingleTickerProviderStateMixin {
bool isRinging = false;
late AnimationController _animationController;
_callNumber(String number) async {
await\ Flutter Phone Direct Caller. call Number (number);
```

}

```
void startFakeCall() async {
setState(() {
isRinging = true;
});
// Play ringtone
FlutterRingtonePlayer.playRingtone();
// Simulate call for 10 seconds (adjust duration as needed)
await Future.delayed(Duration(seconds: 10));
// Stop ringtone
FlutterRingtonePlayer.stop();
setState(() {
isRinging = false;
});
void _showFakeCallDialog() {
showDialog(
context: context,
barrierDismissible: false,
builder: (BuildContext context) {
return Scaffold(
backgroundColor: Colors.white,
```

body: Column(

mainAxisAlignment: MainAxisAlignment.start, // Align caller name to the top crossAxisAlignment: CrossAxisAlignment.center, children: [Padding(padding: const EdgeInsets.only(top: 50.0), child: Column(children: [Text(_generateRandomName(), style: TextStyle(fontSize: 30, // Increased font size for the caller name fontWeight: FontWeight.bold, color: Colors.black, SizedBox(height: 10), Text("+91823457890", style: TextStyle(fontSize: 20, color: Colors.black,),), SizedBox(height: 30),],

),

```
),
Expanded(
child: Column(
mainAxisAlignment: MainAxisAlignment.center,
crossAxisAlignment: CrossAxisAlignment.center,
children: [
Row(
mainAxisAlignment: MainAxisAlignment.spaceEvenly
children: [
GestureDetector(
onTap: () async {
Navigator.of(context).pop();
startFakeCall();
_callNumber('98765432110');
if (await Vibration.hasCustomVibrationsSupport()??
false) {
Vibration.vibrate(duration: 500);
},
child: AnimatedBuilder(
animation: _animationController,
builder: (context, child) {
return CircleAvatar(
backgroundColor: Colors.green,
radius: 35,
```

child: IconButton(

icon: Icon(Icons.call, size: 30), // Increased icon size onPressed: null,),); },),), CircleAvatar(backgroundColor: Colors.red, radius: 35, child: IconButton(icon: Icon(Icons.call_end, size: 30), // Increased icon size onPressed: () { Navigator.of(context).pop(); },),),],),],),),],),

);

```
},
);
}
String _generateRandomName() {
final List<String> names = [
'Mom',
'Dad',
'Bestie',
'Shriya',
'Tarun',
'Taruna',
'Shivang'
]; // Add more names if needed
return names[DateTime.now().millisecondsSinceEpoch % names.length];
@override
void initState() {
super.initState();
_animationController = AnimationController(
vsync: this,
duration: Duration(milliseconds: 500),
);
_animationController.repeat(reverse: true);
}
```

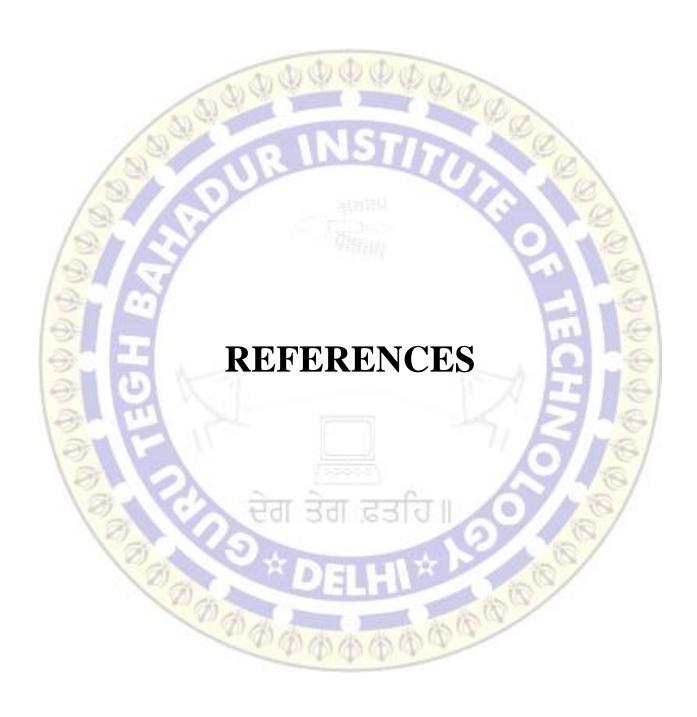
```
@override
Widget build(BuildContext context) {
return Padding(
padding: const EdgeInsets.only(left: 10.0, bottom: 5),
child: Card(
elevation: 5,
shape: RoundedRectangleBorder(borderRadius: BorderRadius.circular(20)),
child: InkWell(
onTap: () {
startFakeCall();
_showFakeCallDialog();
child: Container(
height: 180,
width: MediaQuery.of(context).size.width * 0.7,
decoration: BoxDecoration(
borderRadius: BorderRadius.circular(20),
gradient: LinearGradient(
begin: Alignment.topLeft,
end: Alignment.bottomRight,
colors: [
Color(0xFFFD8080),
Color(0xFFFB8580),
Color(0xFFFBD079),
],
),
```

),

child: Padding(
padding: const EdgeInsets.all(8.0),
child: Column(
crossAxisAlignment: CrossAxisAlignment.start,
children: [
CircleAvatar(
radius: 25,
backgroundColor: Colors.white.withOpacity(0.5),
child: Image.asset('assets/fakecall.png'),
),
Expanded(
child: Column(
mainAxisAlignment: MainAxisAlignment.spaceEvenly,
Alica was a Class Animal Alica was a Class Animal Alica was a start
crossAxisAlignment: CrossAxisAlignment.start,
children: [
children: [
children: [Text(
children: [Text("Fake Call",
children: [Text("Fake Call", style: TextStyle(
children: [Text("Fake Call", style: TextStyle(color: Colors.white, fontWeight: FontWeight.bold, fontSize: MediaQuery.of(context).size.width * 0.06,
children: [Text("Fake Call", style: TextStyle(color: Colors.white, fontWeight: FontWeight.bold, fontSize: MediaQuery.of(context).size.width * 0.06,
children: [Text("Fake Call", style: TextStyle(color: Colors.white, fontWeight: FontWeight.bold, fontSize: MediaQuery.of(context).size.width * 0.06,
children: [Text("Fake Call", style: TextStyle(color: Colors.white, fontWeight: FontWeight.bold, fontSize: MediaQuery.of(context).size.width * 0.06,
children: [Text("Fake Call", style: TextStyle(color: Colors.white, fontWeight: FontWeight.bold, fontSize: MediaQuery.of(context).size.width * 0.06,),),

color: Colors.white,

fontSize: MediaQuery.of(context).size.width * 0.045,),),],),),],),),), @override void dispose() { _animationController.dispose(); super.dispose(); }



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- S. Boukhary and E. Colmenares, "A Clean Approach to Flutter Development through the Flutter Clean Architecture Package," 2019 International Conference on Computational Science and Computational Intelligence (CSCI), Las Vegas, NV, USA, 2019, pp. 1115-1120, doi: 10.1109/CSCI49370.2019.00211.
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