

# Animal Rescue Team (ART) Application

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**Abstract:** "ART" is an innovative mobile phone software created to simplify the adoption and animal rescue procedure, ultimately altering the lives of both animals in need and caring people or families looking for companionship. This app uses technology to provide a seamless and effective platform for responsible pet adoption by bridging the gap between animal shelters, rescue groups, and future adopters. This entire project would involve the development of the app using Android Studio and Firebase.

**Keywords:** Adoption, Rescue, Mobile Application, Stray Animal

## I. INTRODUCTION

“Every year, millions of animals are killed in India either to feed the non-vegetarian population or in laboratories for medical experiments. Cruelty against animals is a cognizable offence under Section 428 and Section 429 of the Indian penal code. There is an urgent need to implement effectively the laws made for the protection of animals. The first step towards which is educating children to have respect for animals and treat with them kindly. Food and shelter should be provided to street dogs by government shelters, and registered firms and NGOs to assure their safety. There is also a need to have stricter laws for the protection of animals. And thus, as today's youth we feel A.R.T can help all those NGOs and firms who are rescuing animals and hence through these animals will be able to live a life without pain at some extend.”

### 1.1 AIM AND OBJECTIVE

The "ART" app's main goal is to make it easier to rescue and adopt animals, with an emphasis on enhancing the lives of animals in need and establishing connections between them and caring people or families looking for companion. This software aims to use technology to speed up the adoption process, encourage responsible pet ownership, and improve the general well-being of animals in shelters and rescue organizations.

The "ART" app was created with several objectives in mind: to simplify animal adoption by providing a user-friendly platform to connect potential adopters with animals in need; bridging the gap between animal shelters, rescue groups and potential adopters by promoting better communication and collaboration between stakeholders; promote responsible pet ownership with educational content on issues such as spaying/neutering, vaccinations and proper care; increase transparency in the adoption process by providing detailed animal profiles and health information and behavioral assessments; facilitate individual matching of adopters and animals and ensure suitable homes; support animal welfare by encouraging donations for animal care and rehabilitation; increase awareness of animal rescue and welfare issues; discovery and services; promote adoption events and community engagement; and commit to continuous improvement, updating and improving the application based on user feedback and new technologies. With these objectives, "ART" strives to facilitate adoption, improve animal welfare and positively influence the lives of both the animals and the people or families who love them.

### 1.2 PROBLEM STATEMENT:

The current animal rescue and adoption landscape is plagued by inefficiencies and challenges that complicate the well-being of animals in need and the fulfillment of loving individuals and families seeking companionship. Traditional animal adoption methods often lack transparency and accessibility, making it difficult for potential adopters to find a match and limiting the reach of animal shelters and rescue organizations. Additionally, the lack of education on responsible pet ownership and the lack of a centralized platform to report lost and found pets further exacerbates the

problem. In this regard, there is an urgent need for an innovative and comprehensive mobile application that can meet these challenges, simplify the adoption process, improve communication between stakeholders, promote responsible pet ownership and ultimately effectively rescue and rehome animals while enriching both lives. animals and adopters.

## II. PROPOSED SYSTEM

### 2.1 Technologies:

#### A. Android Studio:

Android Studio is the official integrated development environment (IDE) for Android app development. It provides a comprehensive set of tools for designing, coding, testing, and debugging Android applications. Android Studio includes features like a visual layout editor, code editor, emulator, and access to the Android SDK, making it the go-to choice for developers creating Android apps.

#### B. Firebase:

Firebase is a cloud-based platform developed by Google that offers a range of services for building and managing mobile and web applications. One of its core features is Firebase Realtime Database, which is a NoSQL cloud-hosted database. Firebase Realtime Database allows developers to store and synchronize data in real-time across connected clients, making it an excellent choice for building real-time applications such as chat apps, collaborative tools, or multiplayer games. It offers offline support, automatic data synchronization, and a secure and scalable infrastructure, making it a popular choice for app developers looking for a reliable backend solution. Additionally, Firebase provides authentication, hosting, cloud functions, and other services that complement the database, simplifying app development and deployment.

#### C. Github:

- GitHub is a web-based platform and collaboration tool that plays a crucial role in app development and software engineering in general. It offers several features and benefits for collaborative app development:
- Version Control: GitHub uses Git, a distributed version control system, to track changes to code. This allows multiple developers to work on the same project simultaneously, while maintaining a history of all changes made. It ensures that changes can be tracked, merged, or reverted easily.
- Collaborative Workflow: GitHub provides a collaborative workflow where developers can work on different branches of the codebase. They can create branches for new features or bug fixes and then merge them back into the main codebase through pull requests, allowing for code review and discussion before changes are merged
- Issue Tracking: GitHub offers a built-in issue tracking system. Developers can create and manage tasks, bug reports, and feature requests using issues. This feature helps teams prioritize work, track progress, and discuss specific aspects of the project.
- Code Review: Pull requests in GitHub facilitate code review. Team members can review proposed changes, comment on code, and suggest improvements. This collaborative approach helps maintain code quality and consistency.

The app contains 1 major module with their submodules as follows:

#### User:

The user can be an organization or a person who is interested in adopting or rescuing stray animals.

#### Log In/Register:

Users can register and create an account by entering an email ID or mobile number. This user information is then stored in Firebase.

#### Homepage:

Consists of three buttons with horizontal scrollable view: -

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1. Rescue
2. Adopt
3. A.R.T

It also contains a refresh view where information about different animal abuse appears as the user refreshes it from top. Sign-out button for signing out from app. Bottom navigation bar with three tabs:

1. Explore(left)
2. Home(center)
3. My Profile(right)

#### **Rescue:**

- By clicking “Give your current location”, we get the users' current location on the screen and also, the location is saved in our database.
- We can choose a picture to upload by “CHOOSE” button.
- Image can also be captured at the instance of abuse and can be uploaded by upload button.
- We can also upload our images using the "Show Uploads" button.
- A user can also delete the image uploaded by him through the app.
- The location as well as the image are stored in the database
- We also use notification using cloud messaging.

#### **D. Cloud Messaging (Firebase):**

- In mobile devices and online applications, Google's Firebase Cloud Messaging (FCM) is a flexible cloud-based messaging solution that is perfect for real-time communication.
- Cross-platform texting is made possible by its compatibility for the web, Android, and iOS platforms.
- FCM makes it easier to send users real-time messages, push notifications, and engaging updates while ensuring scalability, security, and analytics to improve the user experience and keep them engaged with your app.
- Features like topic-based messaging, customizable notifications, delivery reports, and seamless integration with other Firebase services are just a few of the features that make FCM stand out from the competition.

#### **E. Adopt:**

- The Rescued animals are then up for adoption.
- Select the desired animal from the list of animals and then click “For Adoption click here”.
- This will get us a mail that you're interested in this animal for adoption.
- A.R.T also has information regarding top animal welfare organizations of India and through A.R.T users can donate to such organizations as well.

#### **F. Profile:**

- Once the user logs in, his profile page is generated.
- Any profile picture can be kept by the user.
- Authenticated user's information will be visible.
- Consists of options arranged in a list view. Options include: - Help, Contact us, Feedback, About us.
- Profile pictures can also be changed.

#### **G. Learn More:**

- There is also a Help tab which contains some FAQs regarding our app.
- ART's Vision and Mission.
- Feature to provide us feedback.
- Feature to Contact US

**III. SYSTEM ARCHITECTURE:**

This diagram represents the app system with different components such as User, Login, Homepage, Top Navigation, Sign Out, Bottom Navigation, Rescue, Adopt, Home, Explore, and MyProfile. The flow starts with the User entering their credentials in the Login component. If the login is successful, the User is directed to the Homepage. The Homepage displays the Top Navigation, Sign Out, and Bottom Navigation components. The User can interact with the Top Navigation by clicking on Rescue or Adopt. Similarly, the User can interact with the Bottom Navigation by clicking on Home, Explore, or MyProfile.

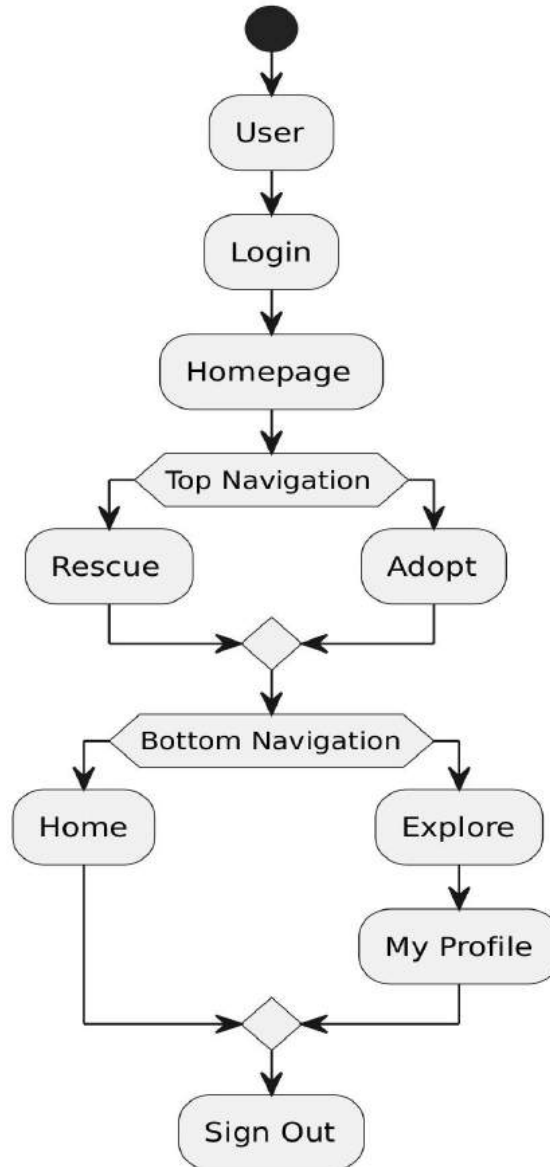
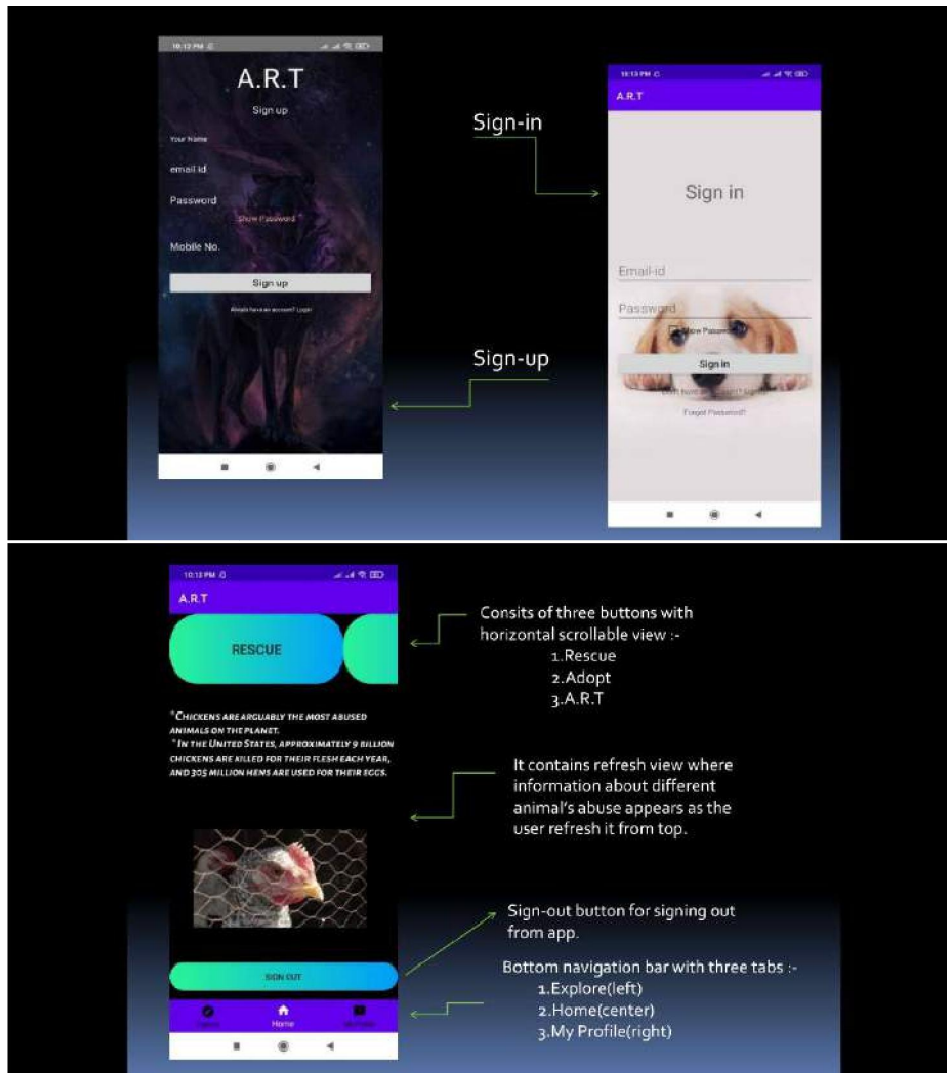
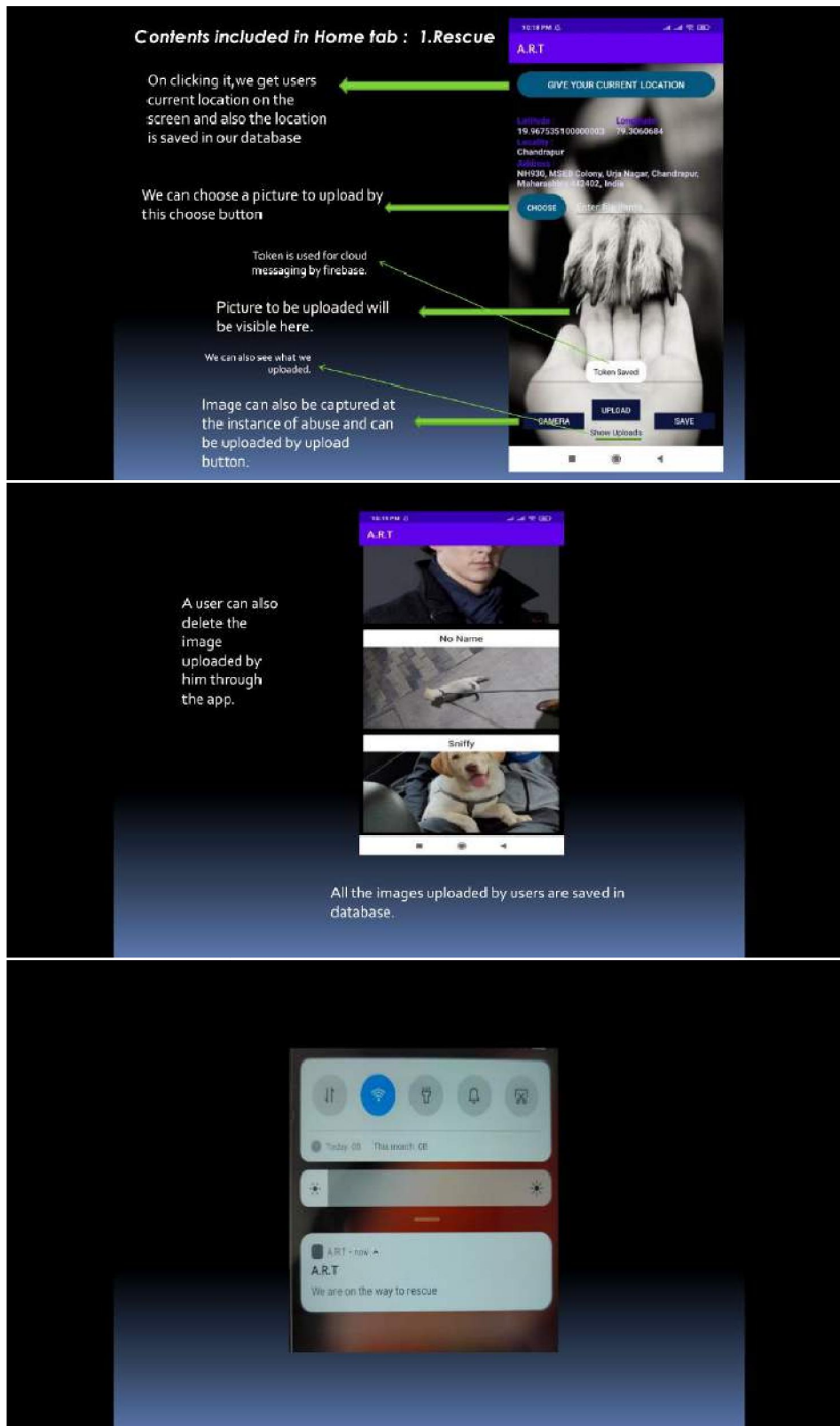


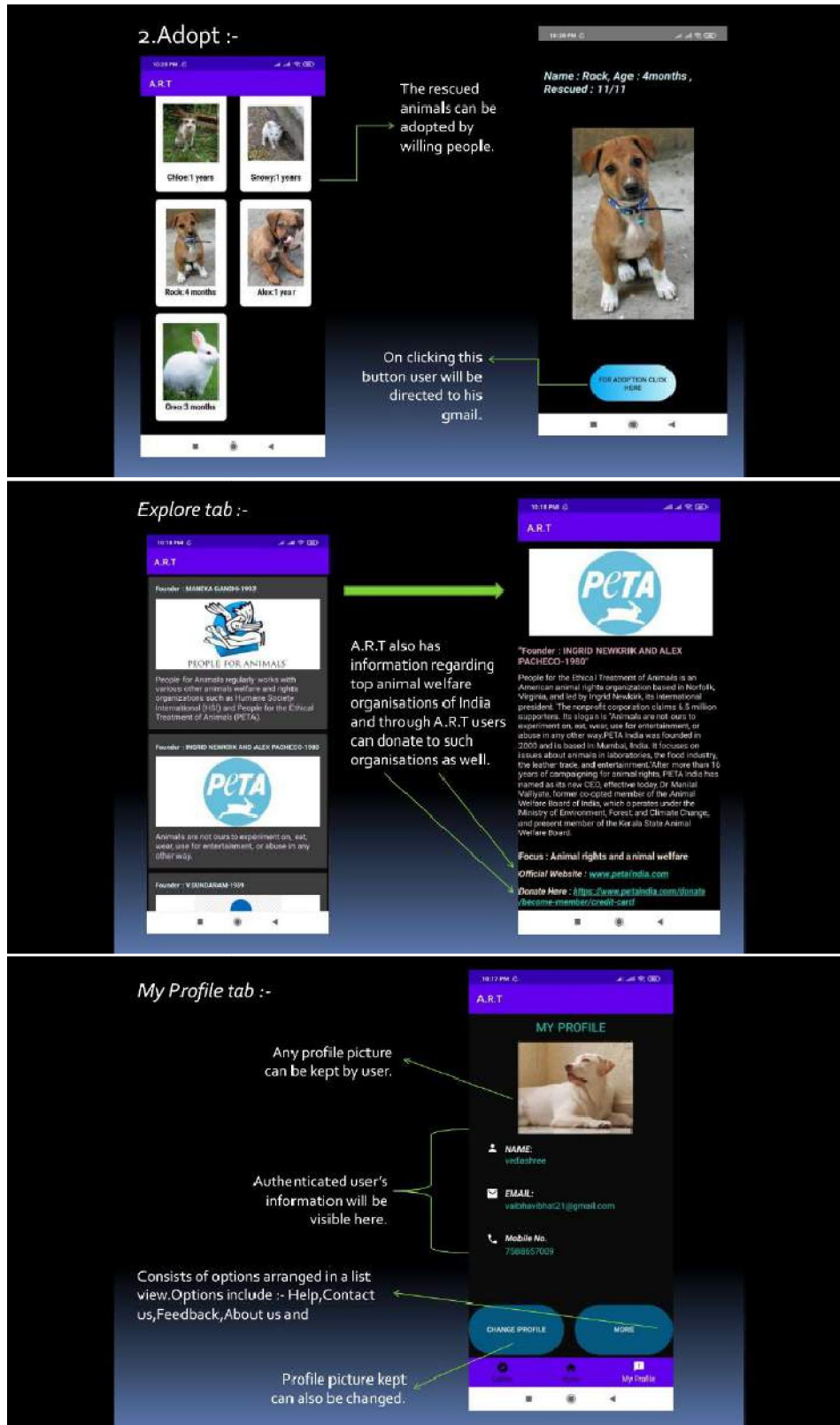
Fig. System Diagram

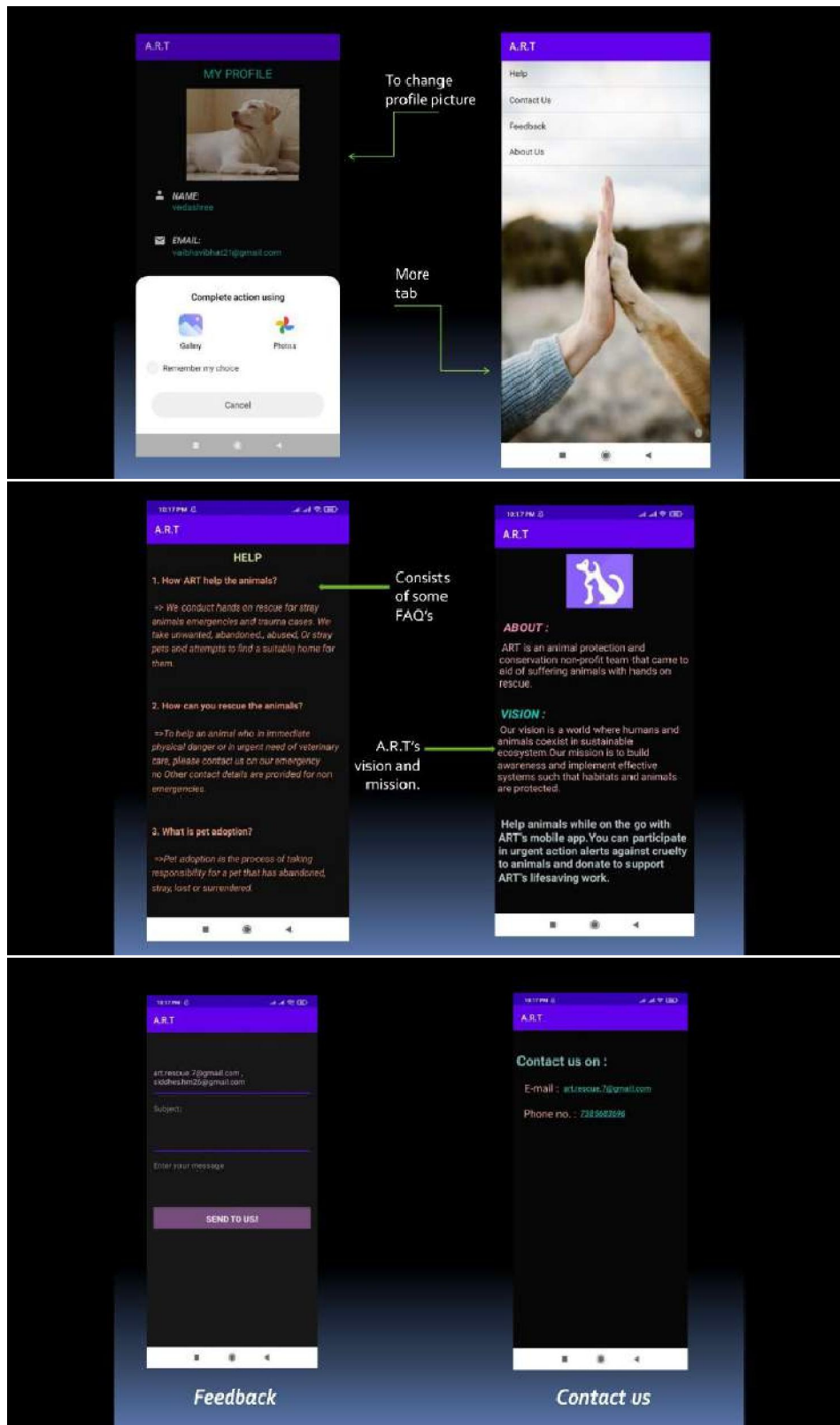
**IV. RESULTS**













### V. CONCLUSION

In conclusion, it can be stated that the development and implementation of the animal rescue and adoption application is an important step forward in addressing the critical issue of animal welfare. By creating a user-friendly platform that simplifies the adoption process, increases transparency and promotes responsible pet ownership, the app provides a beacon of hope for animals in need and compassionate individuals or families looking for a companion. It bridges the gap between shelters, rescue organizations and potential users, promoting better communication and collaboration. Featuring customized housing, educational resources and animal welfare support, this program not only enriches the lives of animals, but also empowers users to make informed and humane choices. Going forward, it is our collective commitment to ensure the continued success and growth of this program so that it can fulfill its mission to rescue and adopt animals, one loving home at a time. Together, we can make a lasting impact on the welfare of animals and the communities that care for them.

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