SOMAIYA VIDYAVIHAR UNIVERSITY

S K Somaiya College

Love for Dogs: An app for your loved paws

Dissertation submitted to the

S K Somaiya College, Somaiya Vidyavihar University

For the partial fulfilment for the award of the degree of

Bachelor of Computer Applications

Submitted By

Adina Ashley Jacob (Seat No. - 31011220022)
Sneha Suniksha Raj (Seat No. – 31011220045)

TYBCA

DEPARTMENT OF COMPUTER SCIENCE

ACADEMIC YEAR 2022-2023

Under the Supervision of

Prof. Leena Shewale

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CERTIFICATE OF AUTHENTICATION

This is to certify that this dissertation is a work of "*Sneha Suniksha Raj" (Exam seat No. 31011220045)* submitted to the S K Somaiya College in partial fulfillment of the requirement for the award of the degree of Bachelor of Computer Applications.

I consider that the dissertation has reached the standards and fulfilling the requirements of the rules and regulations relating to the nature of the degree. The contents embodied in the dissertation have not been submitted for the award of any other degree or diploma in this or any other university.

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Faculty incharge

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Department of Computer Science

CERTIFICATE

This is to certify that **Ms. Sneha Suniksha Raj** bearing seat no. **31011220045** of Bachelor of Computer Applications (Third year), has satisfactorily completed the Project titled **Love for Dogs: An app for your loved paws** in the partial fulfilment for the award of the Bachelor of Computer Applications degree by the Somaiya Vidyavihar University, during the Academic year 2022-23.

Signature of the Faculty incharge

Signature of the Coordinator

Signature of the Examiner

Date of Examination

College Seal

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Examiner Approval sheet

This dissertation/project report entitled *Love for Dogs- An app for your loved paws* by *Sneha Suniksha Raj* is approved for the degree of Bachelor of Computer Applications.

Examiners

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1.....

(Name and signature)

2.....

Place:

Date:

Acknowledgement

The project contained huge amount of research work and dedication. The implementation would not have been possible if we did not have the support of the faculty members. Therefore, we would like to extend our sincere gratitude to all of them.

I take this opportunity to express my profound gratitude to my institution SK Somaiya College and to the head of the department Ms. Anushree Sukhi for giving me this opportunity to accomplish this project work.

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Nevertheless, we express our gratitude towards our families and colleagues for their kind co-operation and encouragement which helped us in completion of this project.

Sneha Suniksha Raj

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Chapter 1: Introduction

1.1 Background of Project

The introduction of the Software Requirements Specification provides an overview of the entire SRS with problem statement, scope, definitions, acronyms, abbreviations, and the comparison with existing systems. The aim of this document is to gather and analyze and give an in-depth insight of the complete Love for Dogs App by defining the problem statement in detail.

The current scenario is that people become so busy with their own lifestyle that they might not take care of their pet dog as needed. We need to ensure that our dog is leading a healthy lifestyle. That is where our app comes into place.

1.2 Problem statement and objectives of project

The average lifespan for a dog ranges from 10 to 15 years. In general, small dogs live longer than their larger counterparts. Dogs also require a balanced diet and proper health care, like we humans do. They also need to stay healthy and should be given proper food according to their age and health needs. We need to help our dogs live a happy and healthy life.

We also need to understand what the emotions of the pet dog are, which we as humans find it difficult to do. There are many dog lovers in today's world, many are unaware of what the different breeds are, how are they different from each other.

An app that can help you to monitor your dog's health, and provide you with lot of information. With our app you will get to know and understand your dog better.

- The main objective of this application is to provide a non-exhausting way to take care of your pet based on mobile application.
- This application is developed based only on pet dogs. The results include: a personality quiz, calming music, breed information, training and grooming the pet.

1.3 Purpose, Scope and Applicability

1.3.1 Purpose

The user will be able to create a profile for their pet dog. They will have to enter their dog's name, weight, height, bio and profile picture of their dog. The user will be able to identify the personality of their pet dog by answering a few questions. They will also be able to calm their pet dog by playing soothing music.

1.3.2 Scope

The features included in our application are as follows:

- *Breed Information*– Information will be provided about around 40 to 50 famous breeds. Each and every detail about that particular breed will be specified.
- *Personality quiz* – By answering 5 questions you will get to know the dog's momentary state of emotion.
- *Calming music* – Make use of this feature to calm your pet dog whenever required.
- *Meal of the day* – This section will continually be updated with information on nutritious meals.
- *Train your dog* – Informative videos on how to train your dog will also be provided.

1.3.3 Applicability

An application that can easily be used anytime anywhere. This application is useful to the veterinarian for food suggestions and for dog lovers to understand about different breeds and the personality of your pet dog.

1.4 Pros and Cons of Project

Pros:

1. This app is user-friendly and beneficial only for your pet dog.
2. The software analyses the different breeds of dogs and provides information about them.
3. Necessities and requirements of dog food are popped up on the app screen which changes every day.
4. This app can assist you in calming your pet dog by playing some good music.
5. You can also identify the personality of the pet dog.

Cons:

1. The application can be used only via internet.

Chapter 2: Survey of Technologies

Software/Programming Languages

The software that we will be using is Ionic. Since Ionic is built on standardized technology such as IONIC, HTML, SCSS, and JavaScript, we can easily build mobile apps. We can also easily customize the look and feel of the application with just HTML and SCSS modifications. Ionic will also be able to build multiple apps from one codebase.

Ionic also provides a library of components and plugins such as UI components, common app icons etc. Since it operates through web hence it is easier to test. Browsers have better in-built testing and debugging tools that make the testing convenient. We do not need to use an emulator which makes the testing process quick and easy.

Firebase is an app development platform that helps you build and grow apps and games users love. It is backed by Google. We have used Firebase Realtime database, storage, and firebase email authentication.

Firebase Realtime database is cloud-hosted database. Data is stored as JSON and synchronized in real time to every connected client. We can use the cloud storage facility to store images. Firebase authentication is being used to authenticate the user using their email ID and password.

Chapter 3: Requirements and Analysis

3.1 Functional Requirements

Introduction:

This subsection contains the requirements for our app. These requirements are based on the features of the app.

3.1.1 Creation of profile

User should create a new account for their pet dog.

User should be able to log into their account using their registered email ID.

3.1.2 Collection of user data

The system shall collect the pet dog's data such as name, height, weight, bio, gender, date of birth and profile picture.

3.1.3 Provides Breed Information

The system displays a set of dog breeds on the screen.

The system provides detailed information about the selected breed.

3.1.4 Personality Analyses

The app pops up 5 personality questions for the pet dog.

Once these questions are answered the current emotion of your dog will be displayed.

3.1.5 Additional requirements

The system shall provide informative videos on how to train their pet dog.

The system shall have a helpdesk in case of any issue or query that the user has.

The system shall provide a music section for soothing your pet dog.

3.2 Non-Functional Requirements

Introduction:

This subsection contains the requirements for our app set by programmers. These requirements are based on the functional requirements of the app.

3.2.1 Graphical User Interface

The system shall provide a uniform look and feel between all the pages of the app.

The system shall provide use of icons and toolbars.

3.2.2 Creation of user profile – Time constraints

Checking of valid information from the database shall take place within a few seconds.

3.2.3 Navigation on home page

Navigation on the home page shall be executed by clicking the icons.

The user's request to navigate to the other functions must be executed instantly.

3.2.4 Videos loading time

Training videos should load on the screen instantly.

3.2.5 Quiz Page

The emotion of the pet should be displayed instantly once the form is filled

3.2.6 Additional requirements

Media should load within a minute.

3.3 Software and hardware requirements at client side

Software Requirements

The system shall work on Android 7.0 or higher

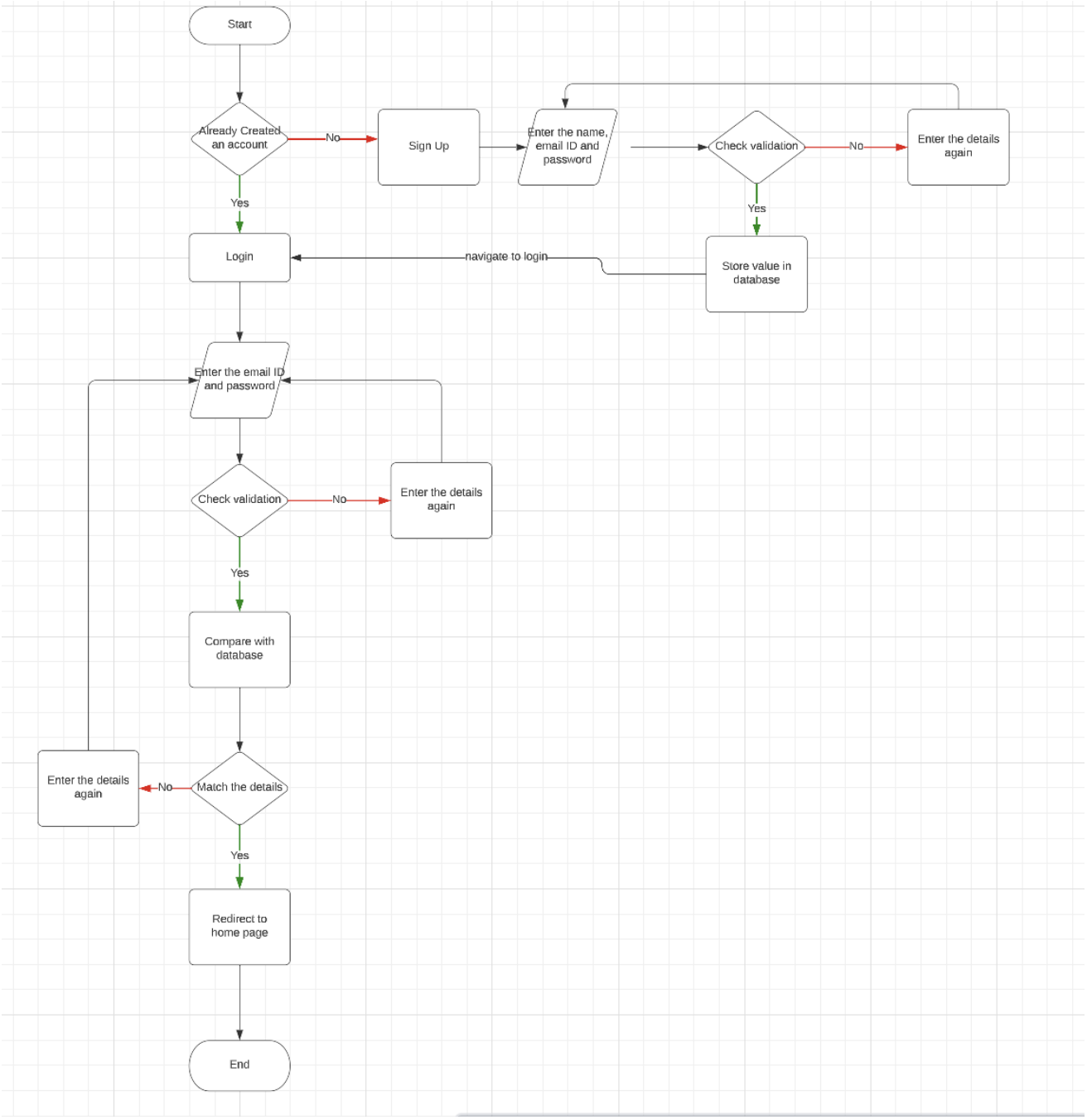
Hardware Requirements

There should be a minimum of 50 MB freely available.

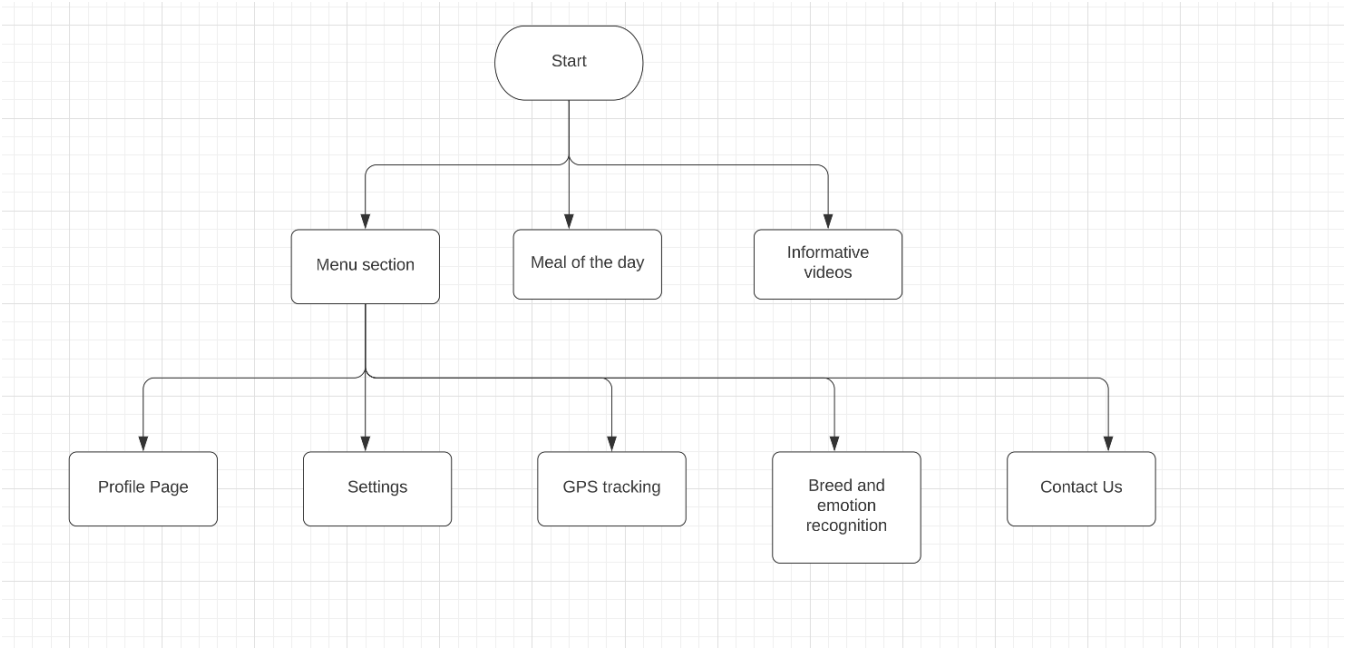
Chapter 4: Systems Design

4.1 Flowchart of the working of the system

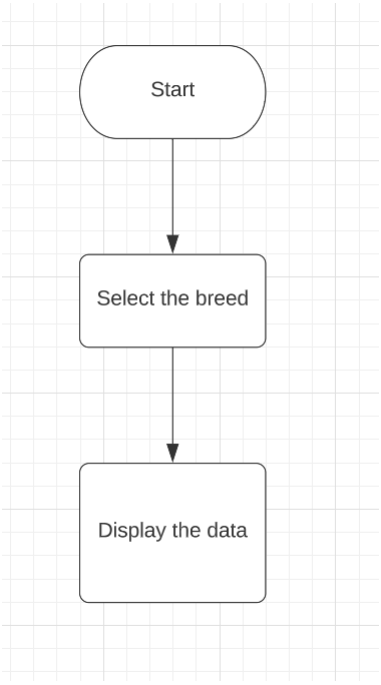
Sign Up and Login flowchart:



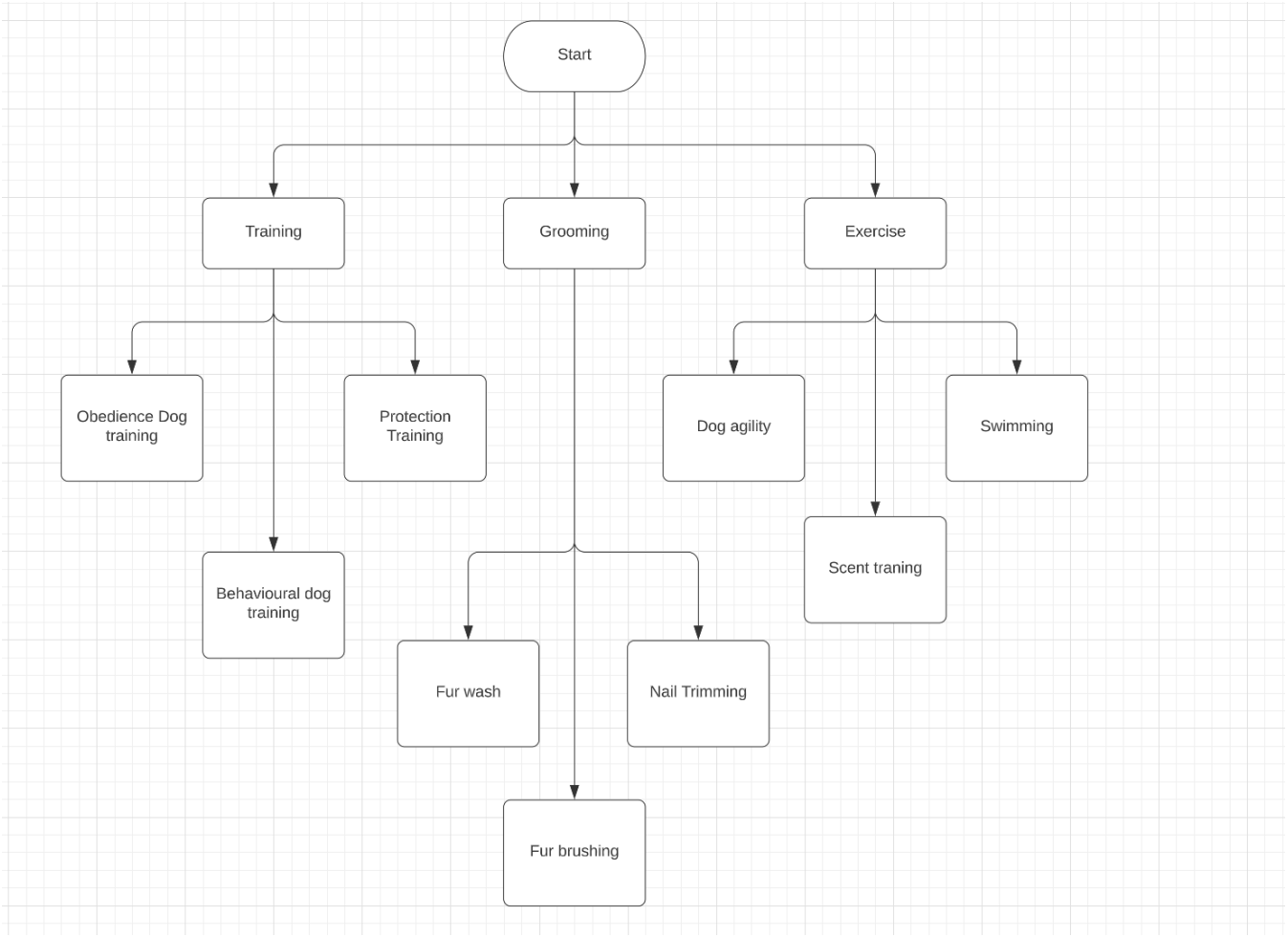
Home page and its navigations flowchart:



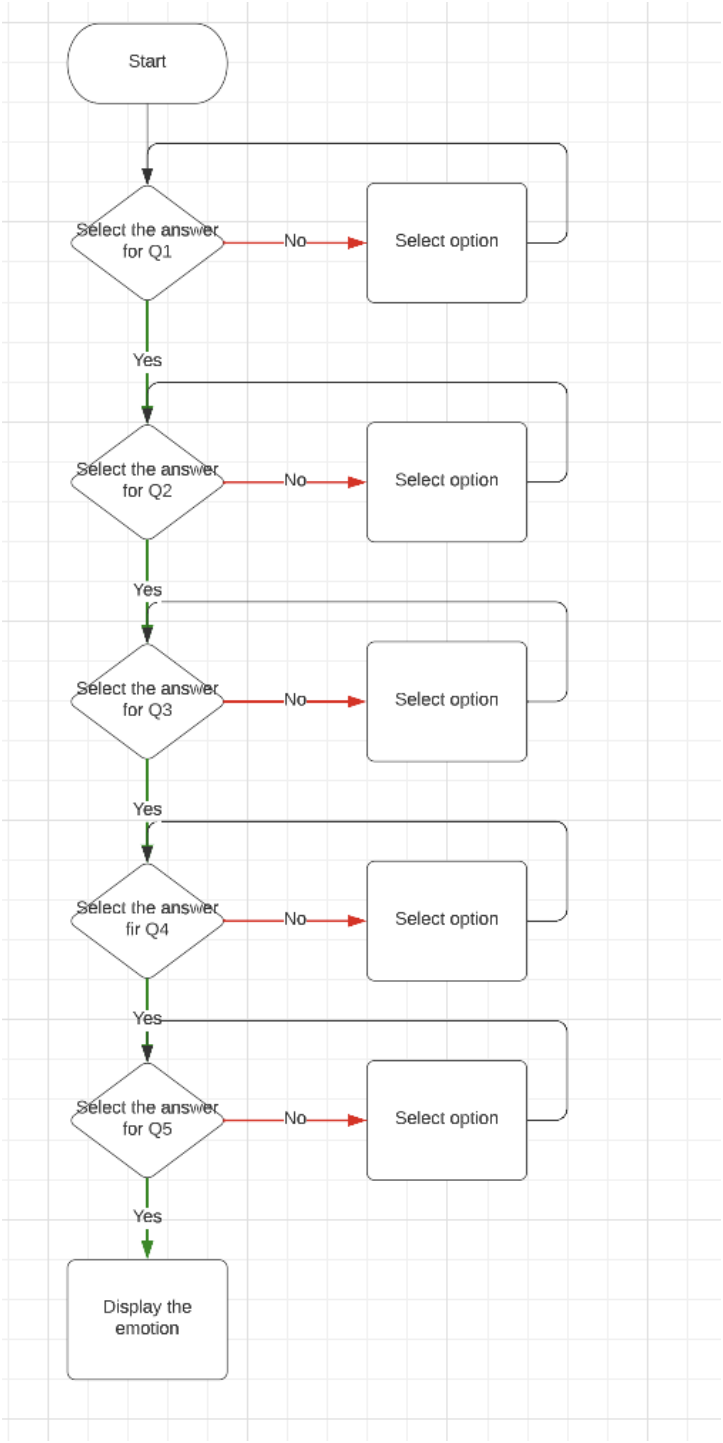
Breed Information flowchart:



Informative Videos flowchart:

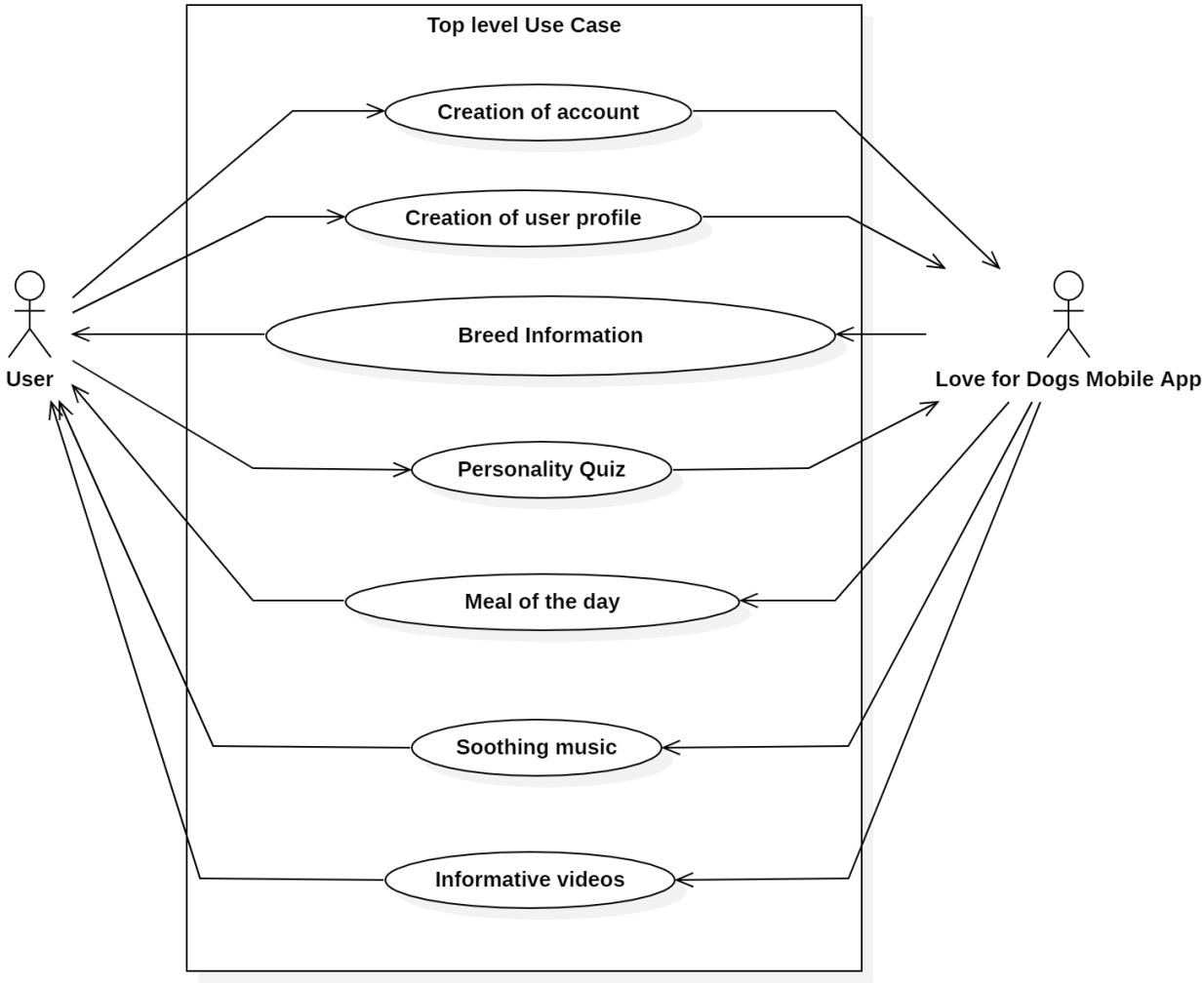


Quiz flowchart:

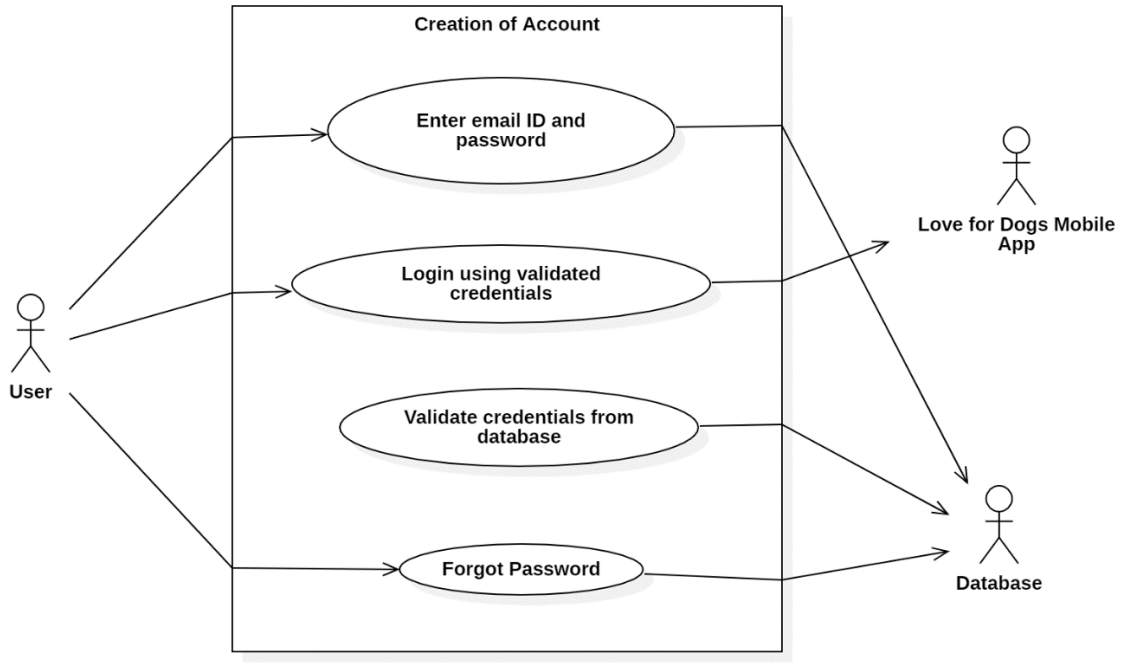


4.2 Use Case Diagram

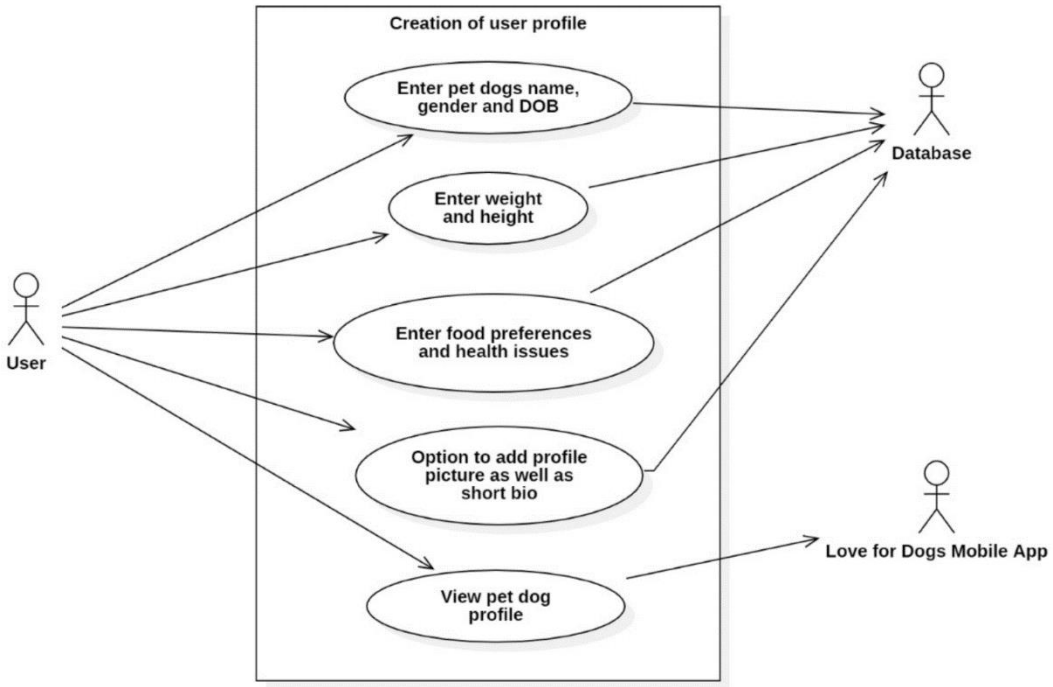
Top level Use Case Diagram:



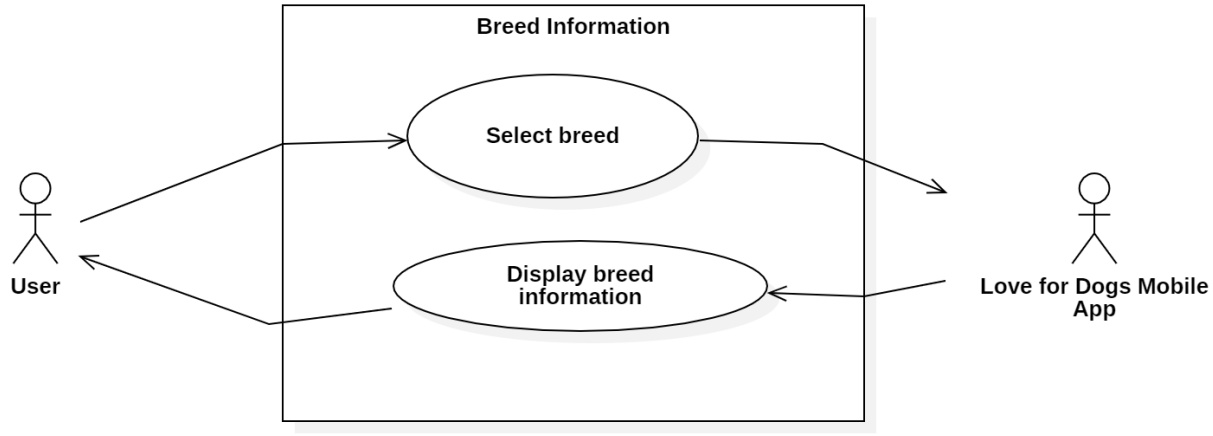
Creation of account Use case:



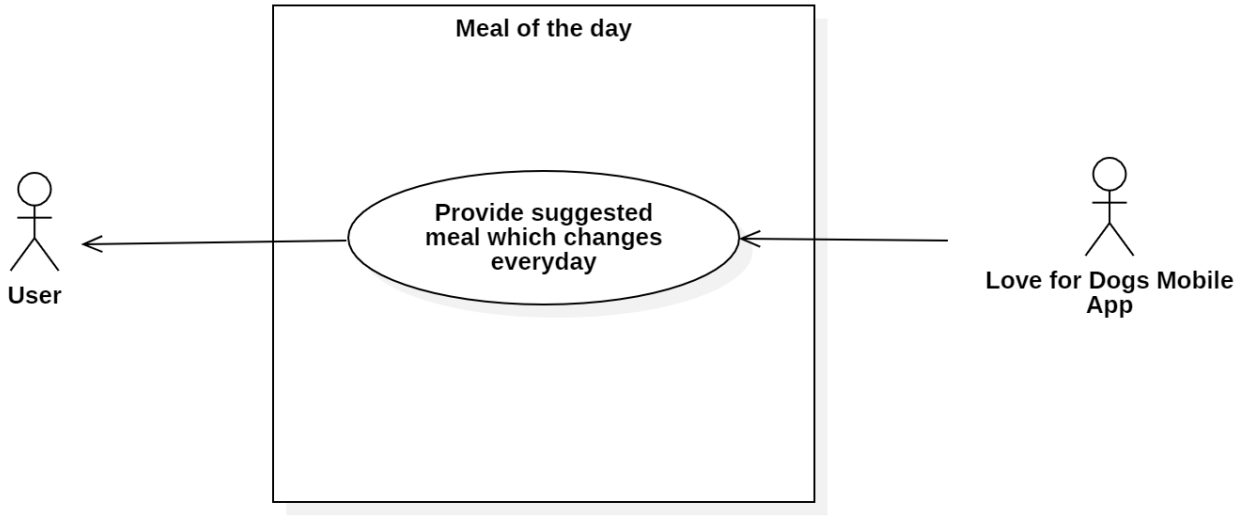
Creation of user profile Use Case:



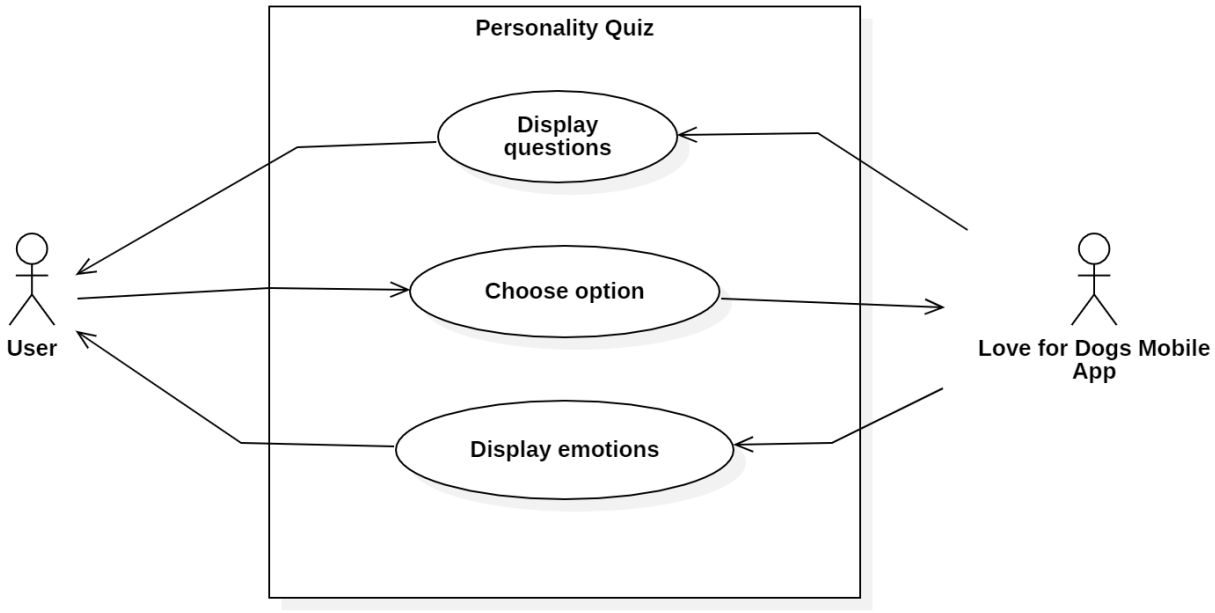
Breed Information Use Case:



Meal of the day Use Case:

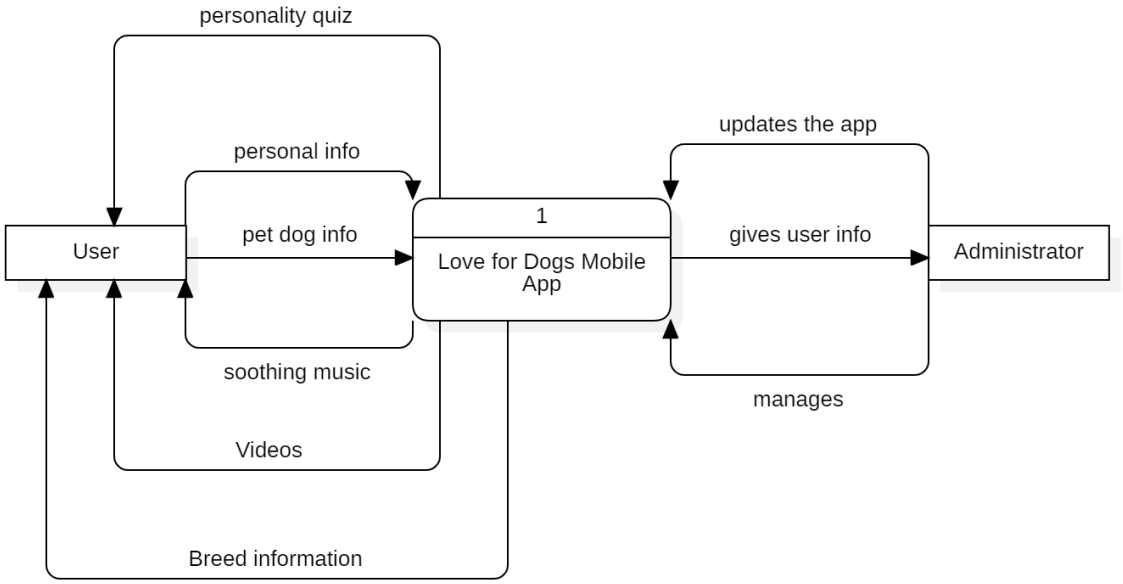


Personality Quiz Use Case:

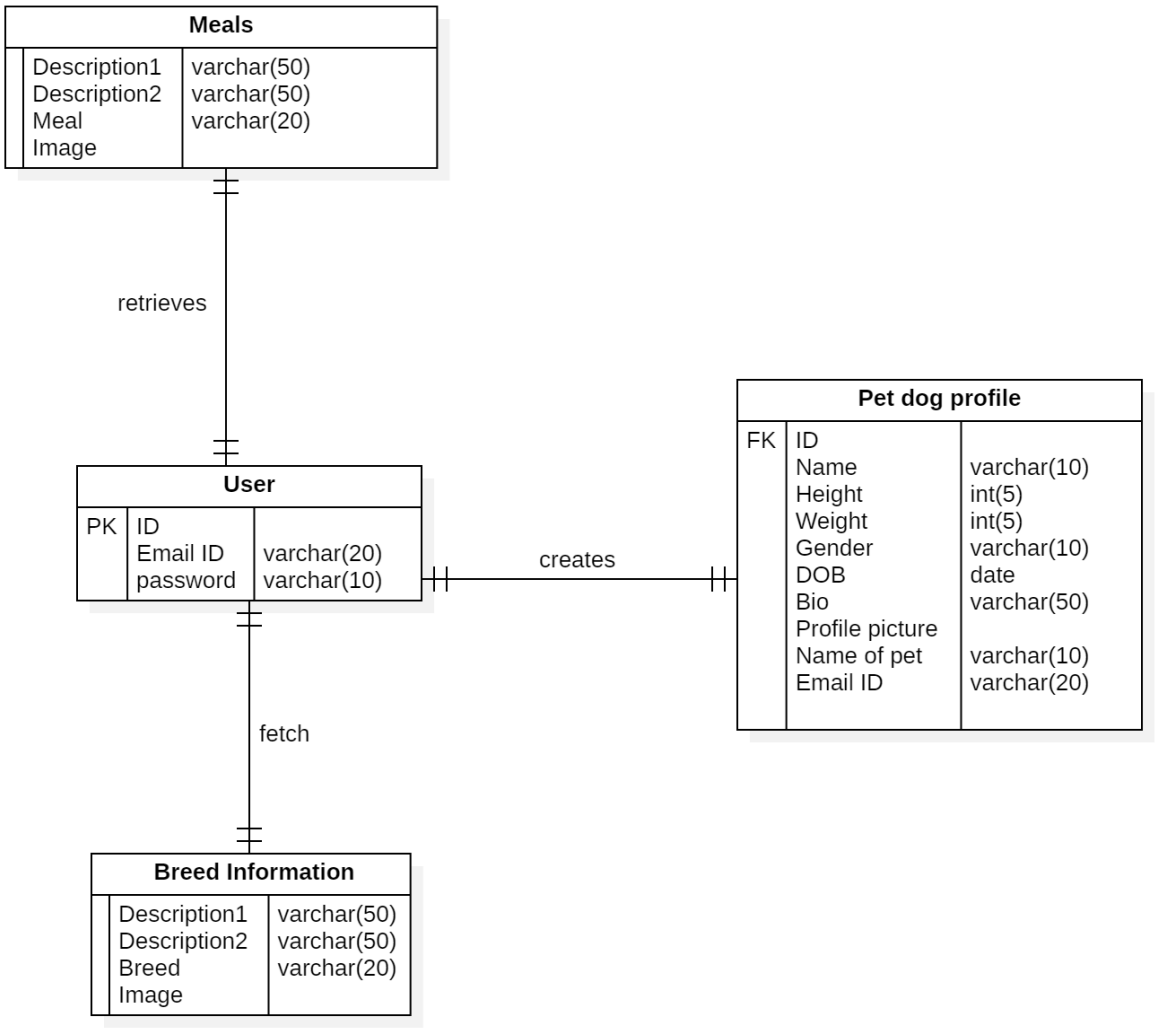


4.3 Data Flow Diagram

Level 0 DFD:

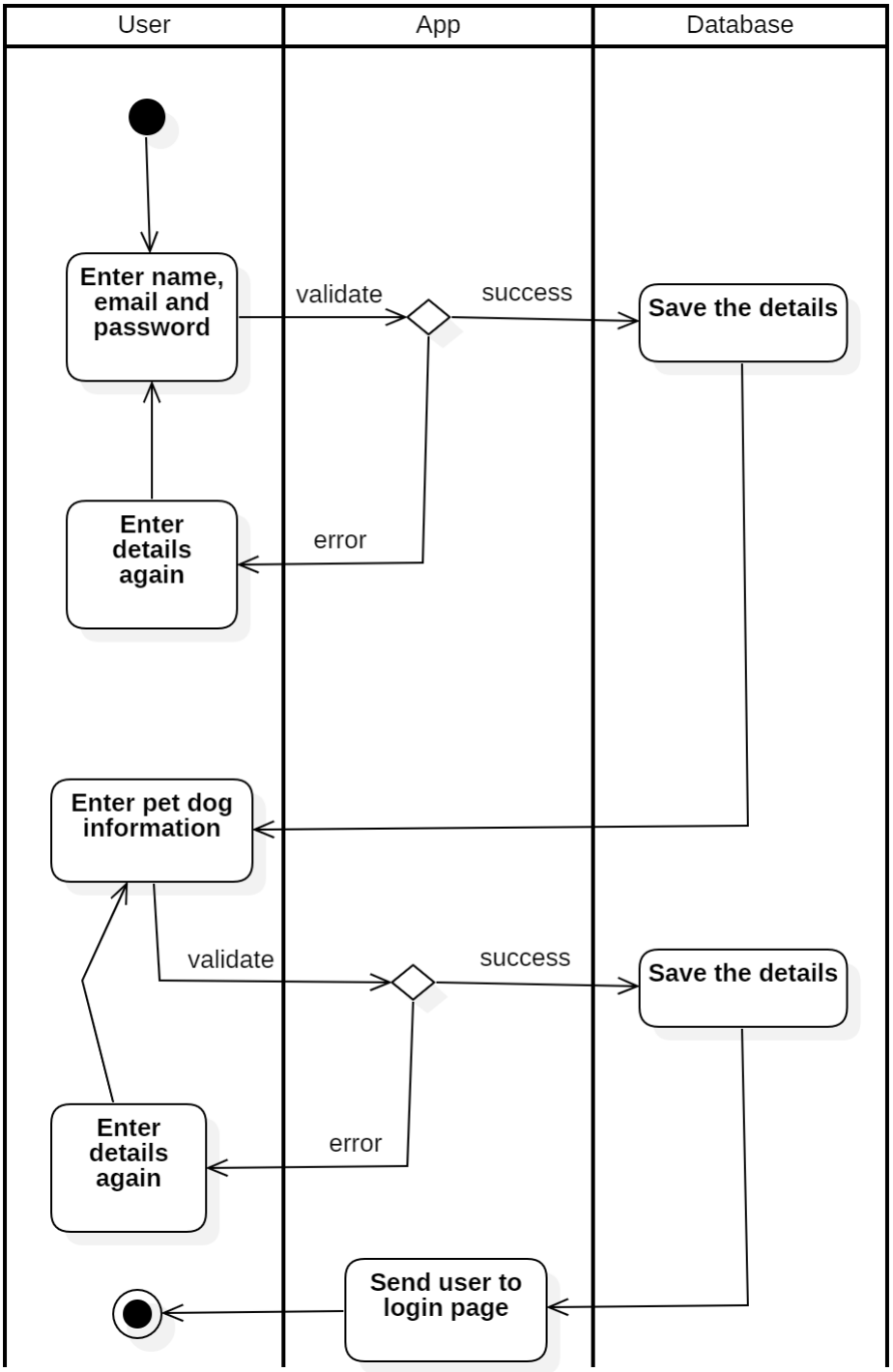


4.4 ER Diagram



4.5 Activity Diagram

Creation of account Activity Diagram:



4.6 Data Dictionary

User Table:

Column name	Data type	Validation
ID	varchar	Created automatically, always unique
Email ID	varchar	No spaces, can include characters and digits, then an @ symbol and then the domain name followed by a . and extension
Password	varchar	Combination of characters and digits and special symbols like @

Pet dog profile Table:

Column name	Data type	Validation
ID	varchar	Created automatically, always unique
Name	varchar	Only characters
Height	int	>=3.8 inches and <=35 inches
Weight	int	>=1 kg and <=145 kg
Gender	varchar	Male or female
DOB	date	Combination of date, month, and year
Bio	varchar	Combination of characters, digits, and special symbols
Profile picture		.jpg, .png formats are accepted
Name of pet	varchar	Only characters
Email ID	varchar	No spaces, can include characters and digits, then an @ symbol and then the domain name followed by a . and extension

Meal of the day Table:

Column name	Data type	Validation
Description1	varchar	Combination of characters and digits and some special symbols. Cannot be empty.
Description2	varchar	Combination of characters and digits and some special symbols. Cannot be empty.
Meal name	varchar	Only characters
Image		.jpg, .png allowed.

Breed Information Table:

Column name	Data type	Validation
Description1	varchar	Combination of characters and digits and some special symbols. Cannot be empty.
Description2	varchar	Combination of characters and digits and some special symbols. Cannot be empty.
Breed name	varchar	Only characters
Image		.jpg, .png allowed.

Chapter 5: Implementation and Testing

5.1 Description of major modules of Project

Sign Up and Login Module

The user needs to Sign Up, so that they can use our app. To sign up, the user needs to enter their name, email ID and password. They will also have to confirm their password.

After signing up, the user then needs to enter information about their pet dog to personalize the user's experience. The user will first be asked to enter pet dogs name, gender, date of birth, height, and weight. Next, the user will have to enter the bio and profile picture for their dog.

After entering the information, the user will be able to login using their email ID and password. On the login page, the functionality of forgot password will also be provided. So, if the user forgets his/her password they will be redirected to the forgot password page. The user will then enter their email ID, they will then receive a forgot password email, to reset their password.

Home Page Module

The home page of our app includes a menu section, it also navigates to some of the major modules of the app. These major modules are Profile, GPS tracking.

Using the menu option, we can also navigate to Contact Us, settings and log out. The user will also be able to view their pet dogs profile picture, name, and bio. User can change their pet dog's basic information, such as name, height, weight, bio. It can be changed from the My account option which can be accessed via the menu.

The home page also contains the meal of the day and informative videos section. The menu also helps us to navigate to Camera which will help us to identify the breed and emotion recognition.

Breed Information Section

Once the user selects the breed from a set of options provided by the system, the details of the breed is displayed. These details include description about the breed, and an image.

Meal of the day Section

The meal of the day section can be accessed via the home page. Meal of the day includes the description of the meal of the day, an image, the advantages of that food item. It will keep on changing every day.

Informative Videos

This section can be accessed via the home page. It includes several types of sections such as training, grooming and exercise. The user can then navigate to their desired section. Based on what the user selects, they will then be navigated to that page.

After the user selects the type, they will then be shown the various kinds within that type. After they select that kind, they will be navigated to a YouTube video.

Personality Quiz

The user will also be able to identify the emotions by filling the personality quiz for your pet dog. Five questions will be displayed and the user can select the appropriate option. Depending upon the options chosen, the emotion of the pet dog will be identified.

Soothing music

Soothing music will be displayed in the app to calm your pet dog.

Contact us and settings module

The contact us module includes an option where the user can send us an email.

The settings module includes options to change the user's basic information about their pet dog.

5.2 Description of major algorithms of Project

Sign up:

User visits the sign-up page, then enter the name, email ID and password. Basic validations on client side take place, after which details will be sent to the server. The server then verifies whether that email address is not already registered. If it is not present, then server hashes the password and stores the user information in a database. Then the user will be redirected to the login page.

Login:

User visits the login page, enters their email ID and password. Server retrieves the user's hashed password from the database using their email address. Server then hashes the entered password and compares it to the hashed password in the database. If the passwords match, the user is then redirected to the home page.

Forgot password:

User visits the forgot password page, they enter their email address. Server then verifies if the email address is present on the database or not. They will then send the email to the user. The user then uses the link to reset the password. The new password will then be hashed and stored in the database.

Breed Information:

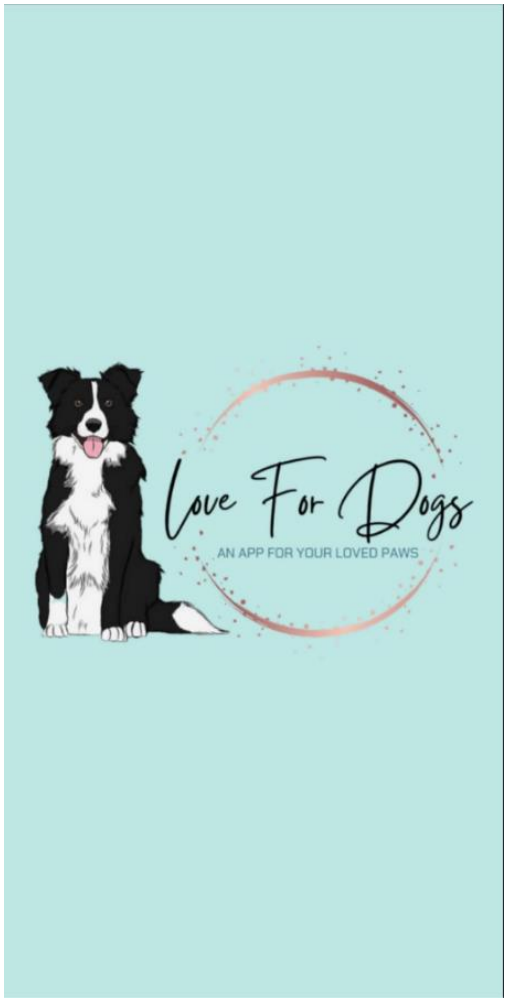
User selects the breed, accordingly to which the information and image will be retrieved from the database.

Personality Quiz:

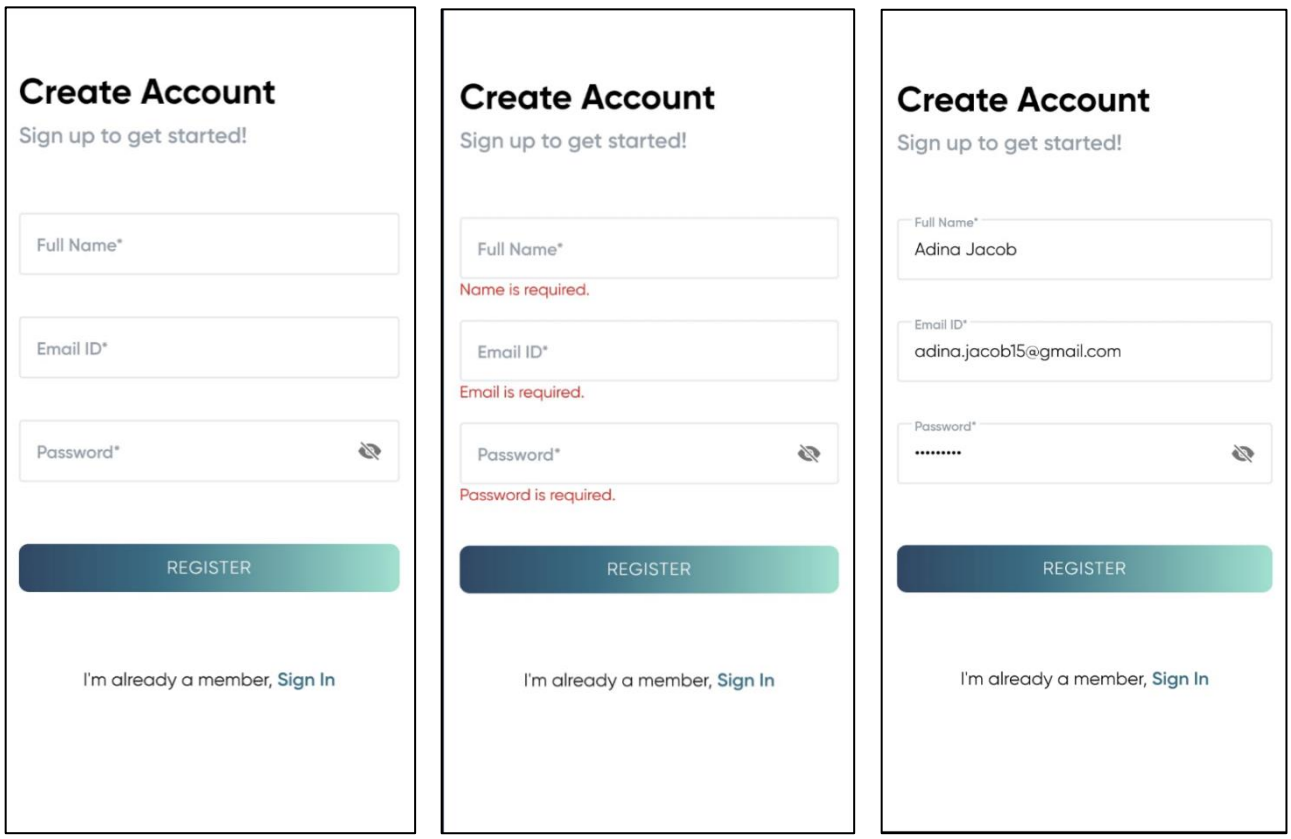
The user answers the questions that will be asked about their pet dog. Once this is done, according to the combination the user has selected, the emotion will be displayed.

5.3 Screenshots of project

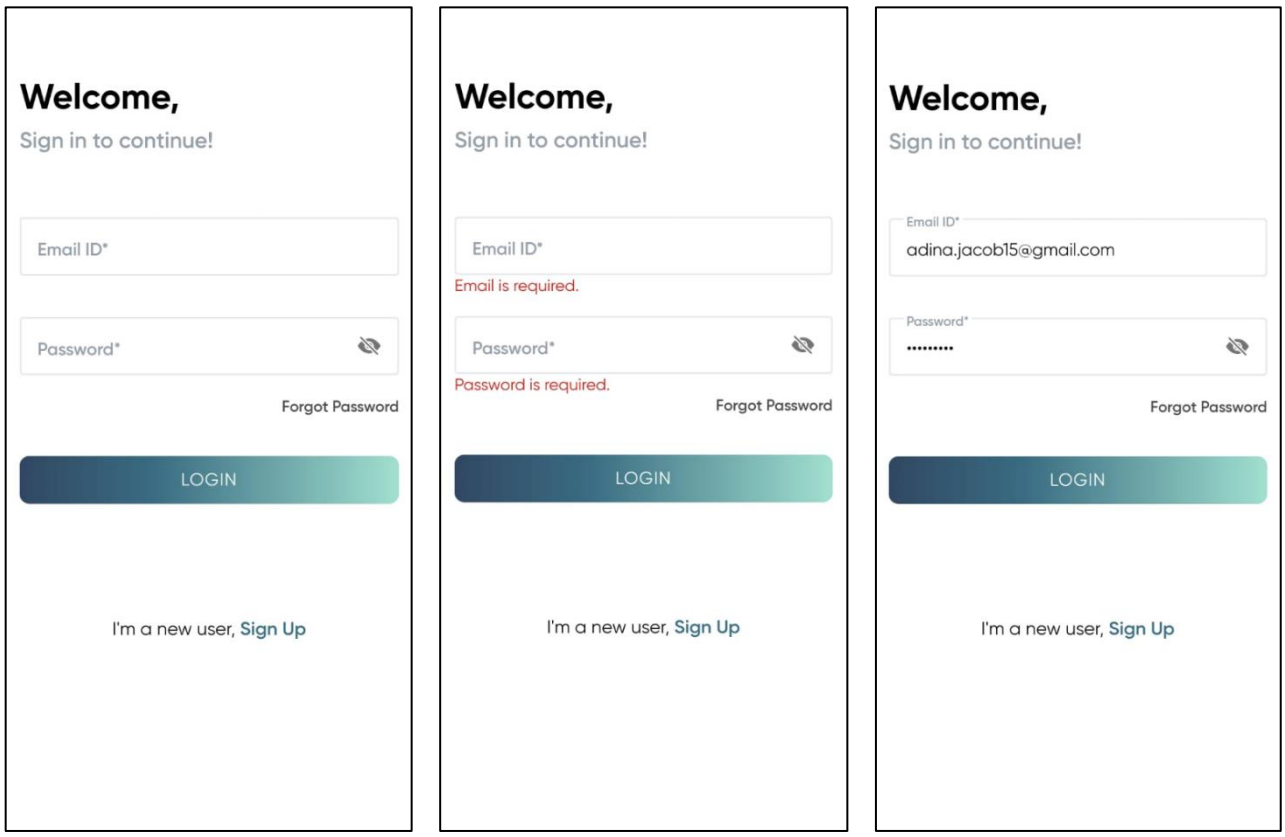
Splash Screen:



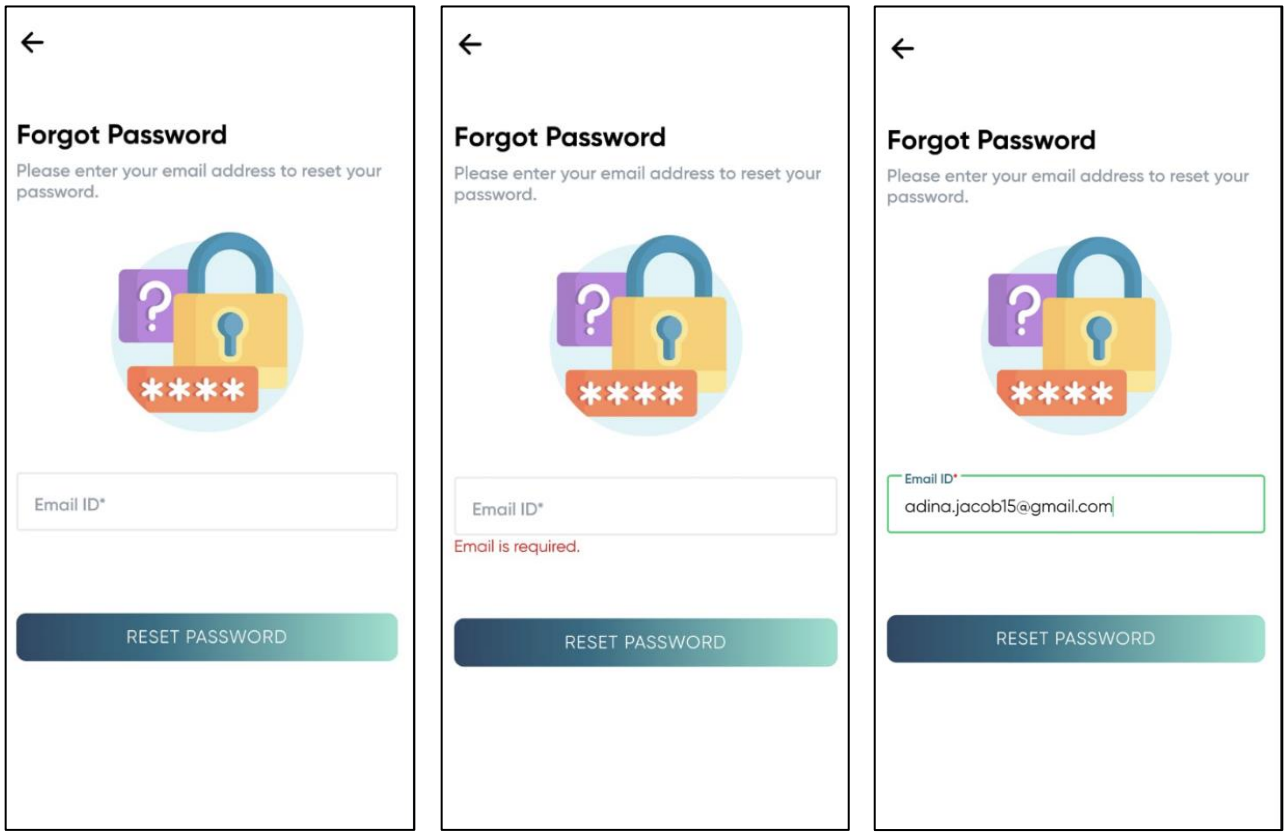
Sign Up Page with validations:



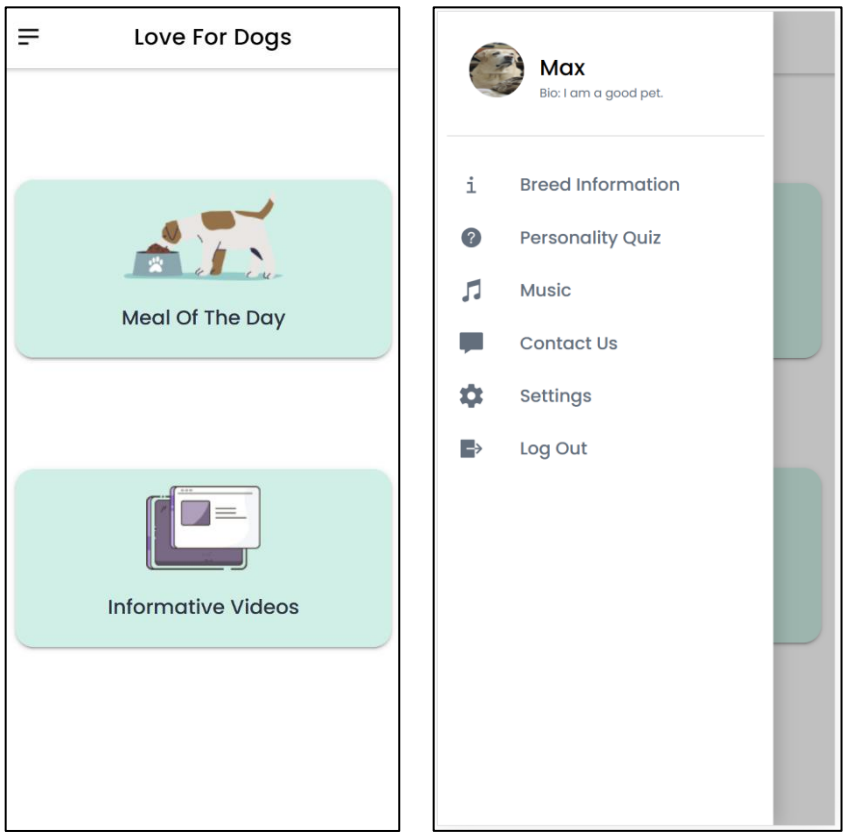
Login page with validations:



Forgot password page with validation:

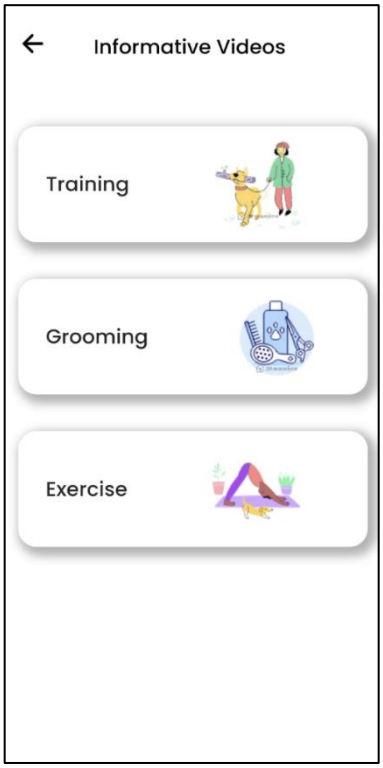


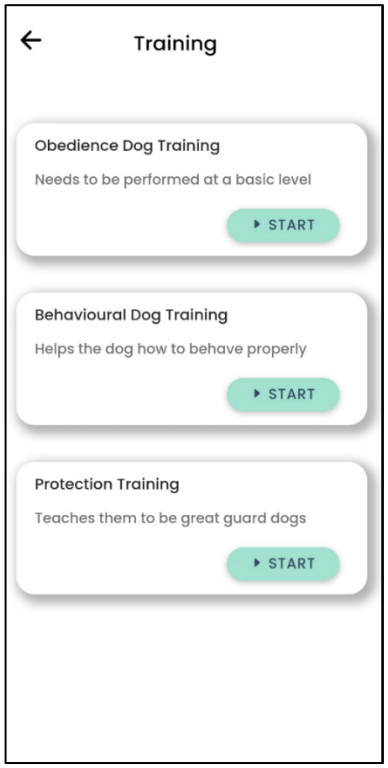
Home Page and menu section:

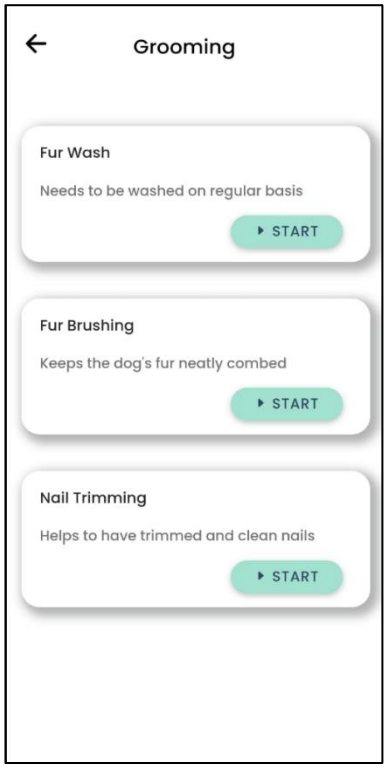


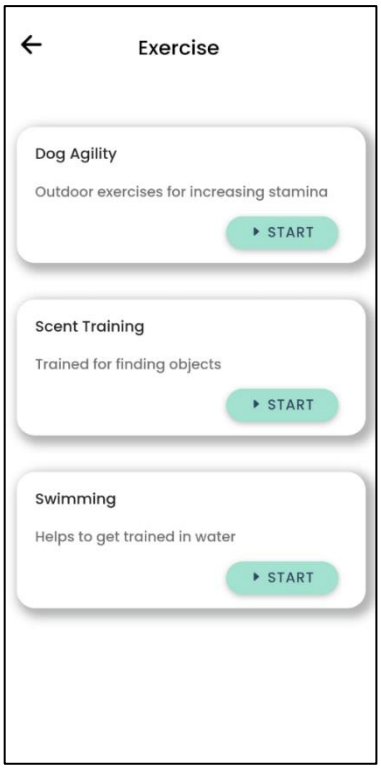
Meal of the day:

Informative Videos:

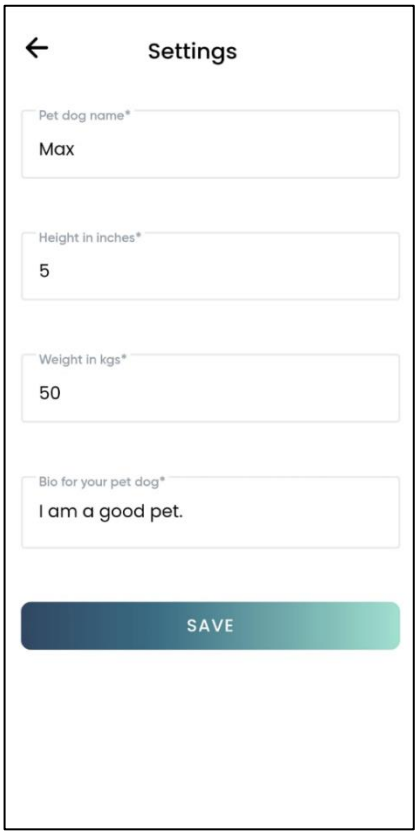




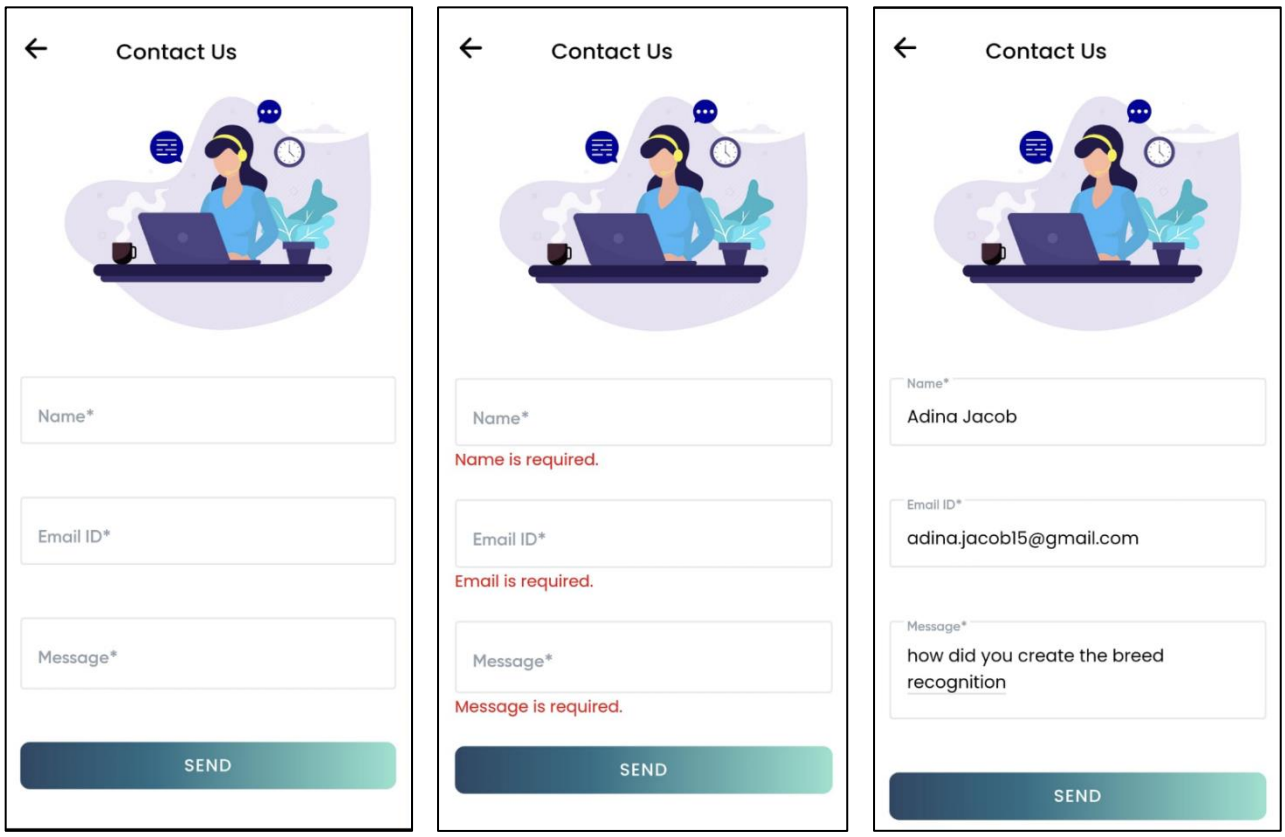




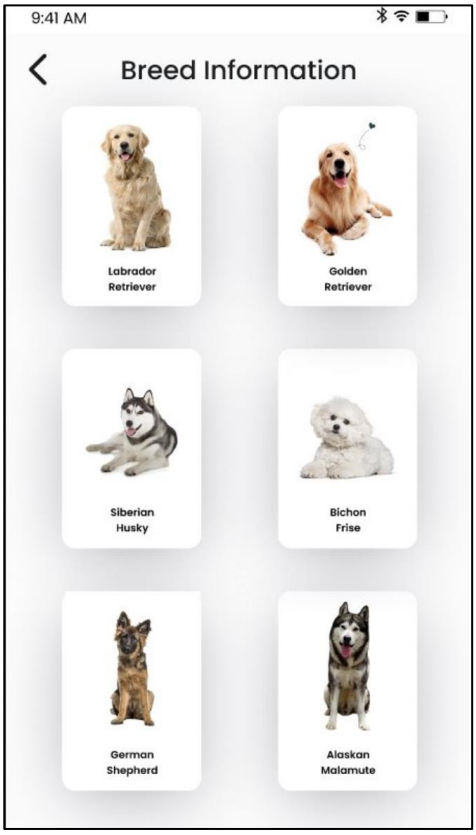
Profile Page and setting page:

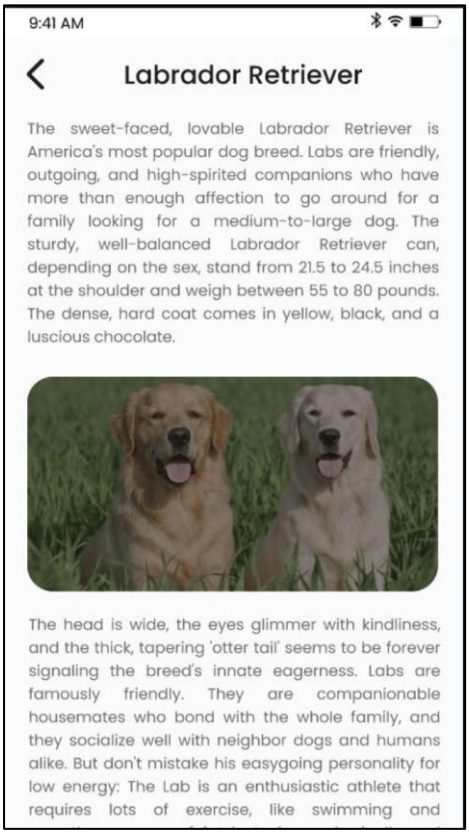


Contact Us Page with validations:



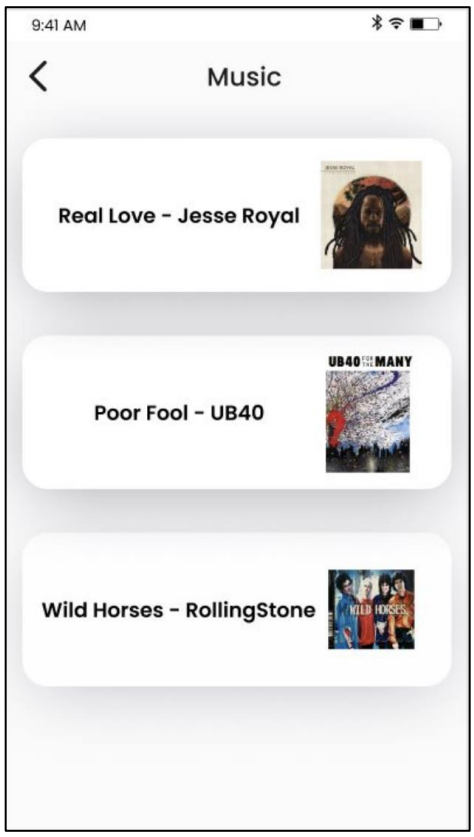
Breed Information:





Personality Quiz:

Soothing music:



5.4 Test Cases and Test Results

Sign Up Page:

Inputs	Expected Result	Actual Result	Status
Full name:			
Valid	Accept	Same as expected	Pass
Invalid (contains digits, special symbols)	Error message “It should only include first and last name, digits and special symbols not allowed.”	Not as expected	Fail
Blank	Error message “Name is required”.	Not as expected	Fail
Invalid (less than 5 chars)	Error message “Name should be min 5 chars long”.	Not as expected	Fail
Email ID:			
Valid	Accept	Same as expected	Pass
Invalid	Error message “Please provide valid email ID”	Not as expected	Fail
Blank	Error message “Email is required”	Not as expected	Fail
Password:			
Valid	Accept	Same as expected	Pass
Invalid	Error message “Password should be min 8 and max 10 characters in length with at least one uppercase, lowercase, one digit, one special character.”	Not as expected	Fail
Blank	Error message “Password is required”	Not as expected	Fail

Login Page:

Inputs	Expected Result	Actual Result	Status
Email ID:			
Valid	Accept	Same as expected	Pass
Invalid	Error message “Please provide valid email ID”	Not as expected	Fail
Blank	Error message “Email is required”	Not as expected	Fail
Password:			
Valid	Accept	Same as expected	Pass
Invalid	Error message “Password should be min 8 and max 10 characters in length with at least one uppercase, lowercase, one digit, one special character.”	Not as expected	Fail
Blank	Error message “Password is required”	Not as expected	Fail

Forgot Password Page:

Inputs	Expected Result	Actual Result	Status
Email ID:			
Valid	Accept	Same as expected	Pass
Invalid	Error message “Please provide valid email ID”	Not as expected	Fail
Blank	Error message “Email is required”	Not as expected	Fail

Accept pet dog information Page:

Inputs	Expected Result	Actual Result	Status
Name:			
Valid	Accept	Same as expected	Pass
Invalid (contains special symbols or digits)	Error message “It should only include first name of the pet dog, special symbols, spaces and digits not allowed.”	Not as expected	Fail
Blank	Error message “Name is required”	Not as expected	Fail
Invalid (less than 3 chars)	Error message “Name should be min 3 chars long”	Not as expected	Fail
Gender:			
Valid	Accept	Same as expected	Pass
Blank	Error message “Gender is required”	Not as expected	Fail
Date of birth:			
Valid	Accept	Same as expected	Pass
Blank	Error message “DOB is required”	Not as expected	Fail
Height:			
Valid	Accept	Same as expected	Pass
Invalid (less than 3.8)	Error message “Minimum height is 3.8 inches”	Not as expected	Fail
Invalid (greater than 35)	Error message “Maximum height is 35 inches”	Not as expected	Fail
Invalid (contains more than 1 decimal)	Error message “Height cannot contain more than 1 decimal point”	Not as expected	Fail
Blank		Not as expected	Fail

	Error message “Height is required”		
Weight: Valid Invalid (less than 1) Invalid (greater than 145) Invalid (contains more than 1 decimal) Blank	 Accept Error message “Minimum weight is 1 kg” Error message “Maximum weight is 145 kg” Error message “Weight cannot contain more than 1 decimal point” Error message “Weight is required”	 Same as expected Not as expected Not as expected Not as expected	 Pass Fail Fail Fail Fail
Profile Picture: Valid Blank	 Accept Error message “Profile Picture is required”	 Same as expected Not as expected	 Pass Fail
Bio: Valid Blank Invalid (less than 10 chars) Invalid (greater than 70 chars) Invalid (only spaces, special symbols)	 Accept Error message “Bio is required” Error message “Bio needs to contain min 10 characters” Error message “Bio needs to contain max 70 characters” Error message “Bio cannot contain only spaces, characters like @, [], etc. It needs to start with a character”	 Same as expected Not as expected Not as expected Not as expected Not as expected	 Pass Fail Fail Fail Fail

Contact Us Page:

Inputs	Expected Result	Actual Result	Status
Name:			
Valid	Accept	Same as expected	Pass
Invalid (contains digits, special symbols)	Error message “It should only include first and last name, digits and special symbols not allowed.”	Not as expected	Fail
Blank	Error message “Name is required”.	Not as expected	Fail
Invalid (less than 5 chars)	Error message “Name should be min 5 chars long”.	Not as expected	Fail
Email ID:			
Valid	Accept	Same as expected	Pass
Invalid	Error message “Please provide valid email ID”	Not as expected	Fail
Blank	Error message “Email is required”	Not as expected	Fail
Message:			
Valid	Accept	Same as expected	Pass
Invalid (less than 10 chars)	Error message “Message needs to contain min 10 characters.”	Not as expected	Fail
Invalid (greater than 100 chars)	Error message “Message needs to contain max 100 characters”.	Not as expected	Fail
Invalid (only spaces, special symbols)	Error message “Message cannot contain only spaces, characters like @, [], etc. It needs to start with a character”	Not as expected	Fail

Blank	Error message “Message is required”	Not as expected	Fail

Settings page:

Inputs	Expected Result	Actual Result	Status
Name:			
Valid	Accept	Same as expected	Pass
Invalid (contains special symbols or digits)	Error message “It should only include first name of the pet dog, special symbols, spaces and digits not allowed.”	Not as expected	Fail
Blank	Error message “Name is required”	Not as expected	Fail
Invalid (less than 3 chars)	Error message “Name should be min 3 chars long”	Not as expected	Fail
Height:			
Valid	Accept	Same as expected	Pass
Invalid (less than 3.8)	Error message “Minimum height is 3.8 inches”	Not as expected	Fail
Invalid (greater than 35)	Error message “Maximum height is 35 inches”	Not as expected	Fail
Invalid (contains more than 1 decimal)	Error message “Height cannot contain more than 1 decimal point”	Not as expected	Fail
Blank	Error message “Height is required”	Not as expected	Fail
Weight:			
Valid	Accept	Same as expected	Pass
Invalid (less than 1)	Error message “Minimum weight is 1 kg”	Not as expected	Fail

Invalid (greater than 145)	Error message “Maximum weight is 145 kg”	Not as expected	Fail
Invalid (contains more than 1 decimal)	Error message “Weight cannot contain more than 1 decimal point”	Not as expected	Fail
Blank	Error message “Weight is required”	Not as expected	Fail
Bio:			
Valid	Accept	Same as expected	Pass
Blank	Error message “Bio is required”	Not as expected	Fail
Invalid (less than 10 chars)	Error message “Bio needs to contain min 10 characters”	Not as expected	Fail
Invalid (greater than 70 chars)	Error message “Bio needs to contain max 70 characters”	Not as expected	Fail
Invalid (only spaces, special symbols)	Error message “Bio cannot contain only spaces, characters like @, [], etc. It needs to start with a character”	Not as expected	Fail

Chapter 6: Implementation and Testing

6.1 Conclusion

The purpose of this project is that it can facilitate connections between users and their pets as well as the larger dog community by offering details on dog breeds, training advice, and other dog activities.

Engaging with the target market and gathering input are crucial during the development process of a love for dog's app to ensure its success. This can help guarantee that the app satisfies the interests and needs of its users.

The app is well planned out and thought through. It has straightforward navigation, an appealing visual design, and special features that make it stands out from other pet-related apps.

6.2 Future Scope of Project

We can include a reminders section in the app, which will help the users to track and remind the users about the timely vaccinations, meals, and water that needs to be provided to their pet dog.

Suggestions for meals will be provided based on the health conditions of the pet dog to have a healthy lifestyle.

Apart from this, we could also create a community within the app, where the users will be able to communicate with each other about their pet dogs. We could also create a step tracker, to track the pet dog's steps, which could be integrated along with the GPS tracker itself.

Can also include GPS tracking for the pet dog, in case they get lost. The GPS tracker can be attached to the pet dog's collar.

Further, reports can also be generated based on the information that we are capturing.

Annexures

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