Umm Al-Qura University
Collage of Computing
Computer Science and
Artificial Intelligence department

Advanced Programming
2nd Semester 2023-2024
Course Project

Nadeem

نَـدِيـم

Jana Alomairi
Aghid Alansari
Wsaif Al-kuzaie
Dawla Asiri
Jana Alqurashi

Advanced Programming Course

Instructor: Dr. Shaimaa Bajoudah

2023- 2024

1-Project Title

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2- Project Idea and Project Aims

Our project aims to solve the challenges pet owners face in accessing medical help for their pets, finding reliable veterinarians, obtaining essential information about pet care, and securing temporary accommodations when they need to travel. To achieve this, we developed a user-friendly mobile application that offers a range of services to support pet owners in taking care of their beloved animals.

3- Project Functionalities

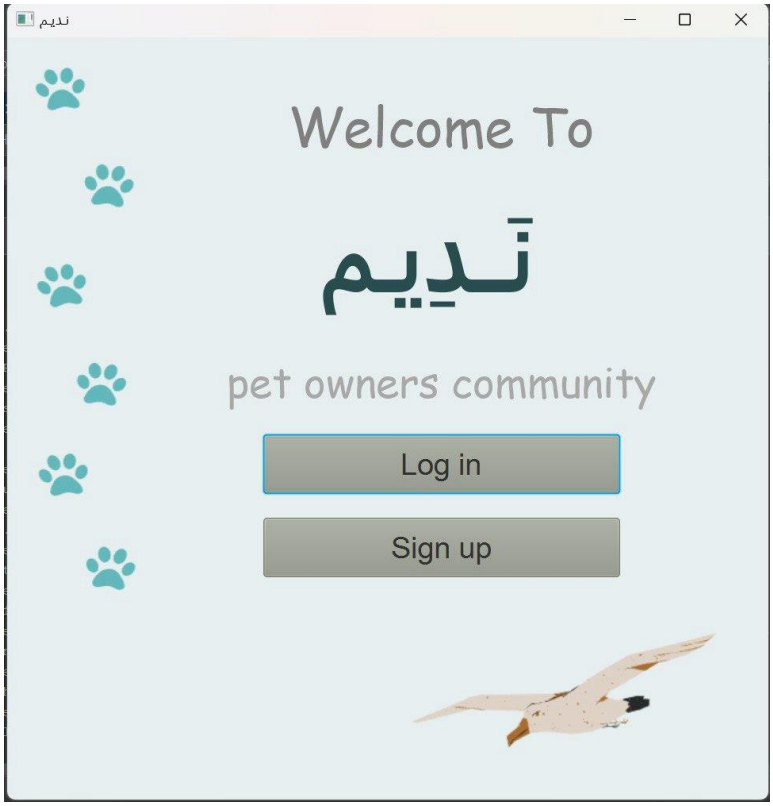
The application facilitates easy access to reputable veterinarians, by displaying all the needed information related to the vet clinic. It serves as an informative hub with personalized pet care guides and tips, tailored to the specific needs of each pet based on their type and breed. The app also helps find lost pets and connects those looking to adopt. in addition, our app assists pet owners to find reliable pet hotels that ensure the well-being of pets during the owner's absence. The app also has info on emergency vet services and a community forum for pet owners to share experiences and get advice.

4- Project Design and Implementation

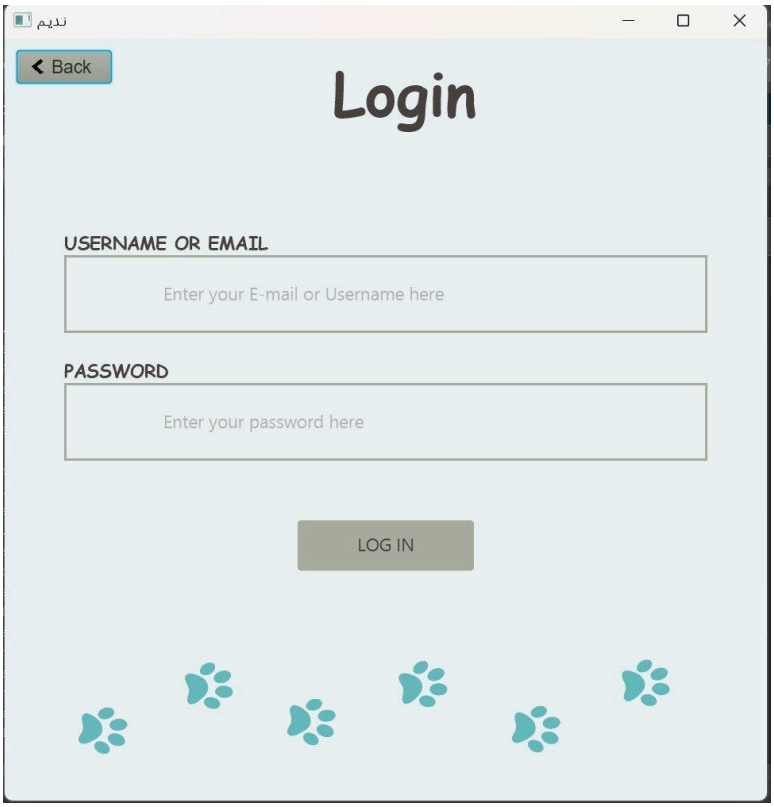
A.Graphical User Interface

We have designed a program that serves Pet’s Owners to make them happy and have easy access to their pet care needs, we built 14 interfaces.

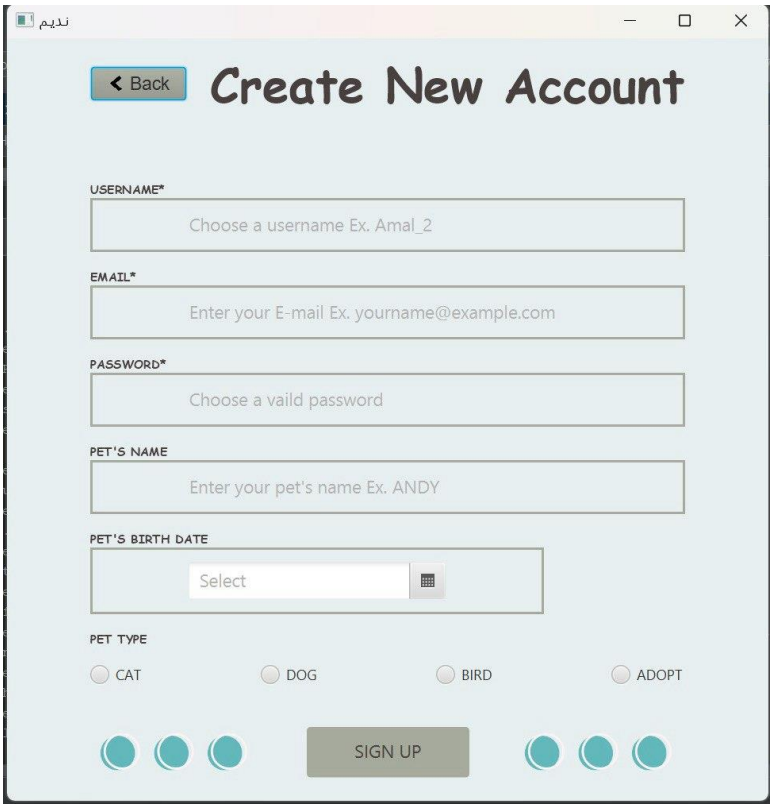
1.


نديم
Welcome To
نَـدِيم
pet owners community
Log in
Sign up

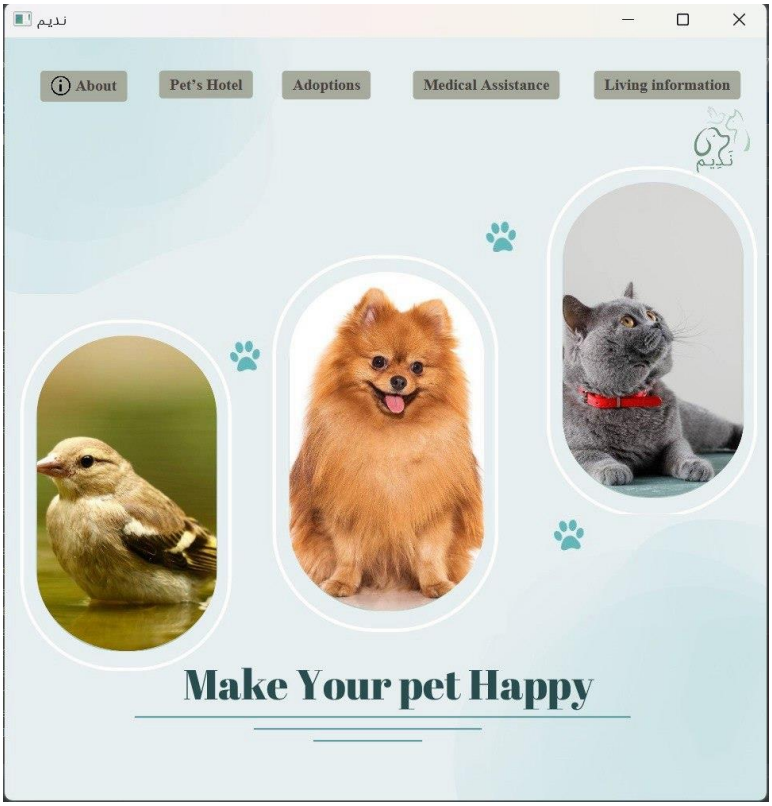
2.


نديم
Back
Login
USERNAME OR EMAIL
Enter your E-mail or Username here
PASSWORD
Enter your password here
LOG IN

3.


نديم
Back
Create New Account
USERNAME*
Choose a username Ex. Amal_2
EMAIL*
Enter your E-mail Ex. yourname@example.com
PASSWORD*
Choose a vaild password
PET'S NAME
Enter your pet's name Ex. ANDY
PET'S BIRTH DATE
Select
PET TYPE
CAT
DOG
BIRD
ADOPT
SIGN UP

4.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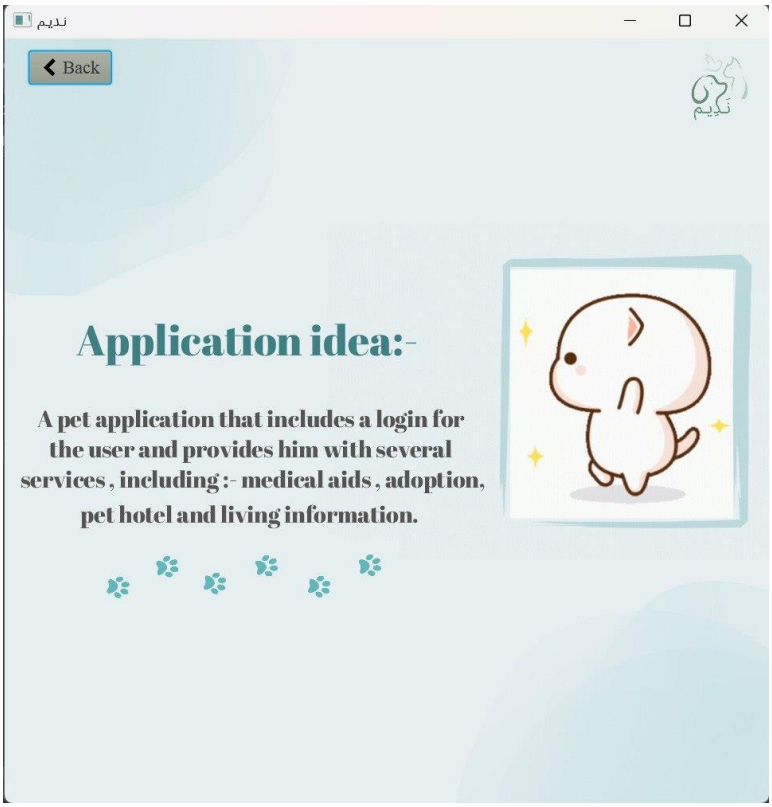
About
Pet's Hotel
Adoptions
Medical Assistance
Living information
Make Your pet Happy

5.


نديم
Back
Application idea:-
A pet application that includes a login for the user and provides him with several services , including :- medical aids , adoption, pet hotel and living information.

6.

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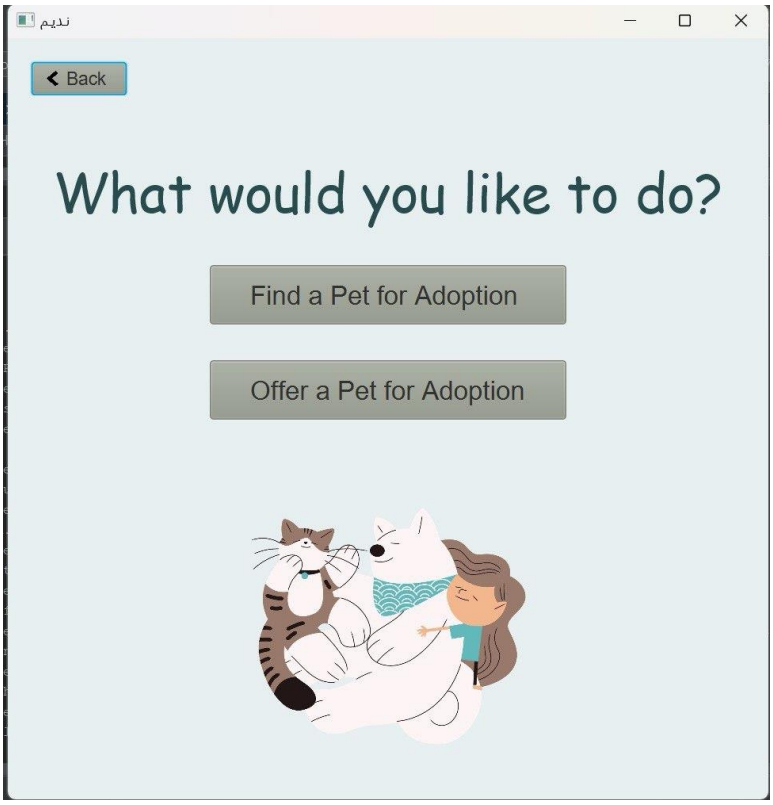
Back
PET HOTEL
Pet's type :
Select Type
City :
Select City
Date of arrival :
35sr per day ..
Date of departure :
Calculate the price
Confirm

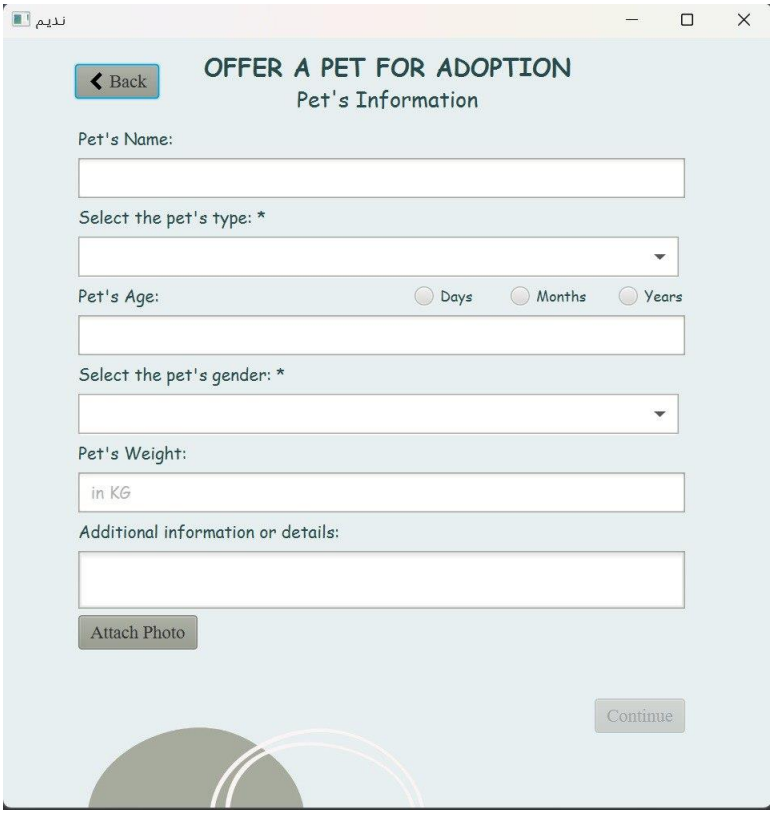
7.


نديم
Back
What would you like to do?
Find a Pet for Adoption
Offer a Pet for Adoption

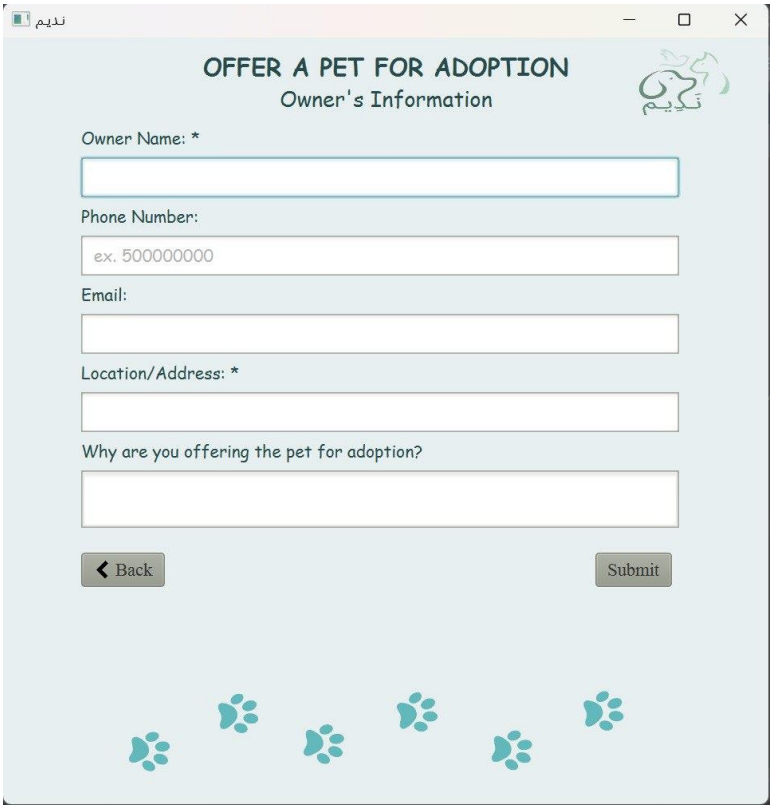
8.

نديم
Back
FIND A PET FOR ADOPTION
All
Pet's Name: سُنبل
Type: Cat
Age: 18 Months
Gender: Male
Weight:
Owner's Name: صالح
Phone Number: 566073523
Address: Jeddah
email:
Additional Info: القط هادي وأليف لونه أشقر
Reason for adoption:

9.


نديم
Back
OFFER A PET FOR ADOPTION
Pet's Information
Pet's Name:
Select the pet's type: *
Pet's Age:
Days
Months
Years
Select the pet's gender: *
Pet's Weight:
in KG
Additional information or details:
Attach Photo
Continue

10.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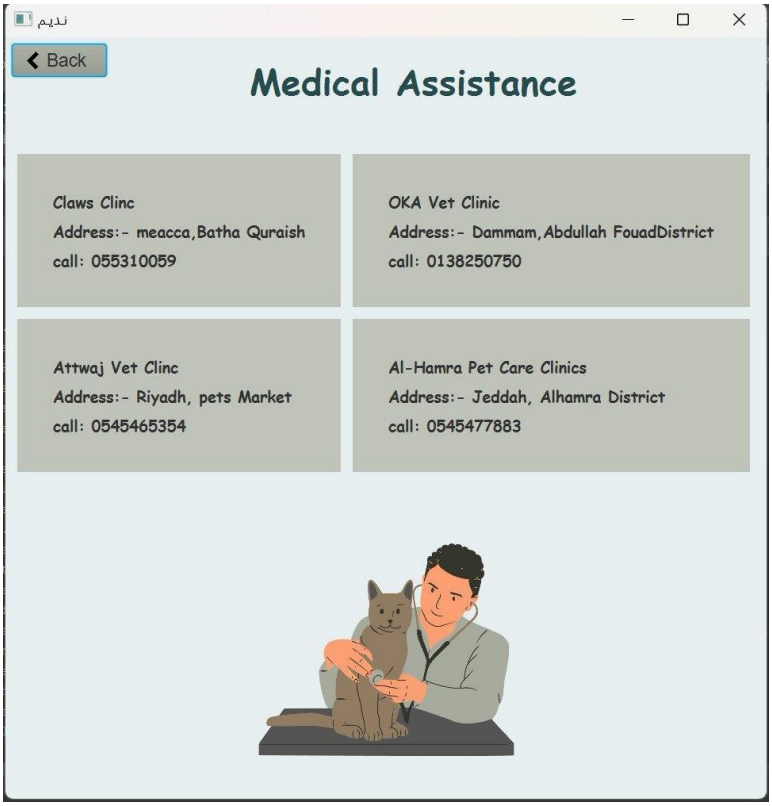
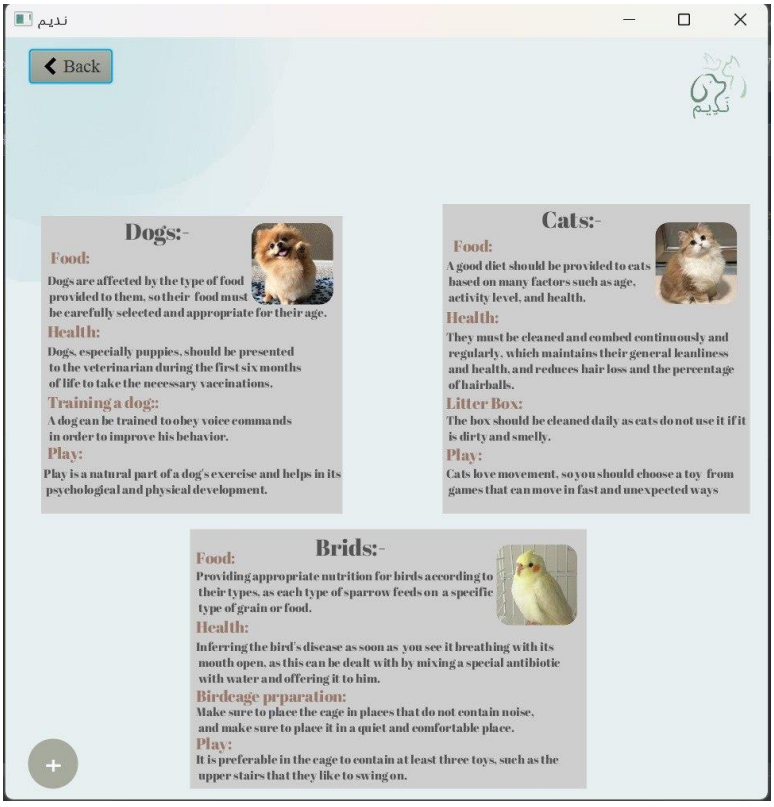
OFFER A PET FOR ADOPTION
Owner's Information
Owner Name: *
Phone Number:
ex. 500000000
Email:
Location/Address: *
Why are you offering the pet for adoption?
Back
Submit

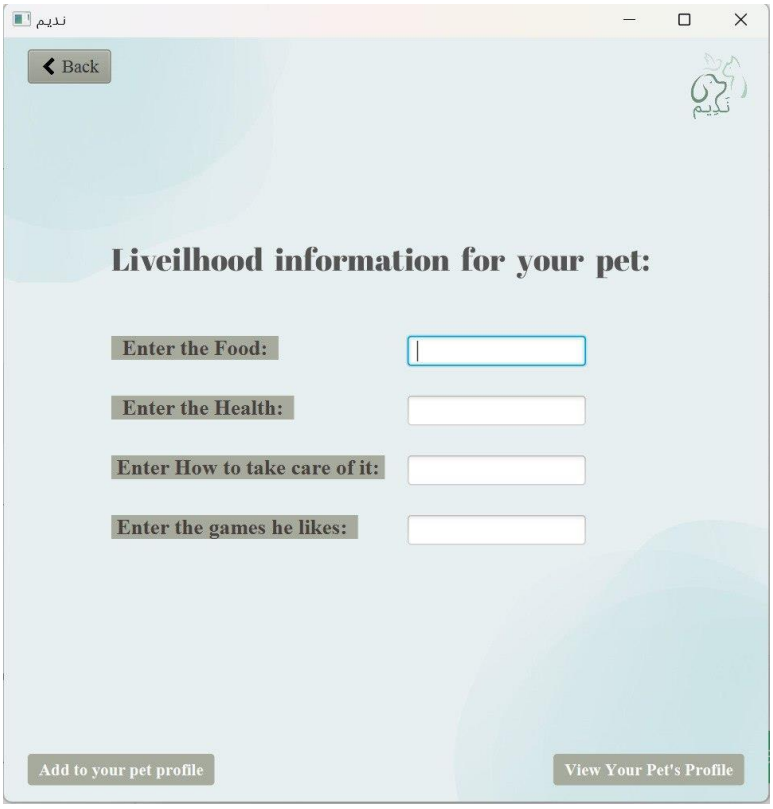
11.


نديم
Back
Medical Assistance
Claws Clinc
Address:- meacca,Batha Quraish
call: 055310059
OKA Vet Clinic
Address:- Dammam,Abdullah FouadDistrict
call: 0138250750
Attwaj Vet Clinc
Address:- Riyadh, pets Market
call: 0545465354
Al-Hamra Pet Care Clinics
Address:- Jeddah, Alhamra District
call: 0545477883

12.


نديم
Back
Dogs:-
Food:
Dogs are affected by the type of food provided to them, so their food must be carefully selected and appropriate for their age.
Health:
Dogs, especially puppies, should be presented to the veterinarian during the first six months of life to take the necessary vaccinations.
Training a dog::
A dog can be trained to obey voice commands in order to improve his behavior.
Play:
Play is a natural part of a dog's exercise and helps in its psychological and physical development.
Cats:-
Food:
A good diet should be provided to cats based on many factors such as age, activity level, and health.
Health:
They must be cleaned and combed continuously and regularly, which maintains their general leanliness and health, and reduces hair loss and the percentage of hairballs.
Litter Box:
The box should be cleaned daily as cats do not use it if it is dirty and smelly.
Play:
Cats love movement, so you should choose a toy from games that can move in fast and unexpected ways
Brids:-
Food:
Providing appropriate nutrition for birds according to their types, as each type of sparrow feeds on a specific type of grain or food.
Health:
Inferring the bird's disease as soon as you see it breathing with its mouth open, as this can be dealt with by mixing a special antibiotic with water and offering it to him.
Birdcage prparation:
Make sure to place the cage in places that do not contain noise, and make sure to place it in a quiet and comfortable place.
Play:
It is preferable in the cage to contain at least three toys, such as the upper stairs that they like to swing on.

13.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Back
Liveilhood information for your pet:
Enter the Food:
Enter the Health:
Enter How to take care of it:
Enter the games he likes:
Add to your pet profile
View Your Pet's Profile

14.

نديم
Back
YOUR PET PROFILE
Pet's Name: Andy
Type: Cat
Age: 7 Months
Gender: Female
Weight: 1.4 kg
Owner's Name: Jana
Phone Number: 533809377
Address: Makkah
Email: Janaom0@gmail.com
Your Pet's Food:
Chicken from Applaws
Your Pet's Health:
Good Health
How to take care of it:
Play with her and give her a treat
Games Your Pet Prefers:
She loves to play with Small balls

The propose for each interface is :

1 : The Welcoming page
2 : Log in page
3 : Sign up page
4 : The Home page and the user will choose one of the services
5 : Page for introduction about our program
6 : Page for Pet Hotel
7 : Page for Adoption and it have 3 pages inside
8 : Page for Adopting
9 : Page for Offer an Adoption
10 : Complete for Offer an Adoption page
11 : Page for Medical Assistance
12 : Page for Living Information
13: Page for Adding a Living Information to the pet profile
14 : Profile Page for the user information and their pets

The flow of the program will be first the user will choose to log in or sign up.
If he choose Sign Up, he will enter the UserName (it's required) then he will enter the Email (it's required) then he will enter the Password (it's required) , then he will enter the Pet's name and his Birth date and his type, then he will press the button "SIGN UP" and all the data will transfer to the tables in our data base.
If he choose Log In, he will enter only the UserName or Email and the Password, then he will press the button "LOG IN" and all the data will compare to the data we have save it when he sign up.
When the user press "SIGN UP" or "LOG IN" the Home page will appear and he can choose one of our services, which is "About Scene" it have simplified information about our program.
And "Pet Hotel Scene" when the user enter this scene, he will enter the Pet Type and the City for the Hotel and the date of arrival for the hotel and the date of departure then he will press the "Calculate the price" button then it will calculate the price 35 per day, when he want to confirm the reservation for the hotel he will press button "Confirm" then the reservation will transfer to our Data Base. Also, the user can press button "Back" to return to the Home page.
And "Adoptions Scene" when the user press this page he will have two options,
the first one is "Adopt" it's for finding a pet for adoption, when the user find a pet for adoption he will contact the owner and complete the process with the owner.
The second one is "Offer a Pet for Adoption" and it have 2 pages inside it, one of them for inserting pet's informations like the name and the

type and the age and the gender and the weight and he can add an additional information or details and he can attach a photo of his pet. When he done he press the “Continue” button to go to the other page and it is for the owner informations like the Owner Name (it’s-required) and his Phone Number (it’s required) and his Email and his Location / Address (it’s required) and the reason for offering the pet for adoption. When he done he will press the “Submit” button then all the informations will transfer to our Data Base and he will back to the page before and see his offer as a post.
And one of our services is “Medical Assistance” when the user choose this service he will see some wonderful reliable veterinary clinics with great reviews and experiences, we have specified 4 different clinics in 4 different cities, the user can choose one of them and contact them.
Last service we have is “Living information” when the user click this button he will see some information about 3 different types of pets, Cat, Dog, Bird. Also, he can add his pet information to their profile and he will see it in the profile page when he click on the “View Your Pet’s Profile” in the “AddPetInfo” Scene.

B. Event-Driven Programming

So far we have created 38 events using action events and key events to control the flow of the program and implement the methods we created.
LoginFirst and SignupFirst are source actions to translate from “NadeemScene” which is the start page to the “LogIn” and “SignUp” Scenes.
backLogin and backSign are other source actions to return to the previous scene to control the flow, as does all the other source actions such as: backHotel, backAdopt, backMed, backAcc, B6, B7, B10, backbtn1, backbtn2 and backbtn3.
For source actions buttonLoginPage3 and SignUpButtonPage2 first verifies data in the database to start the program and translates to “Menu” Scene.
Where B1, B2, B3, B4, and B5 source action buttons are in the “Menu” Scene to move to another scene according to the user's choice. While B8 and B11 are also used for the same purpose for different scenes, B9 is to check and update some information about the pet in the “AddPetInfo” Scene.
And also we have ptad and ofead source actions buttons to determine if the user wants to adopt a pet or offer his pet for adoption in the “Adoption” Scene. If the user chooses to offer his pet up for adoption

he must fill the form in the “AdoptOffer1” and “AdoptOffer2” which contains a number of source actions such as: cboGender abd cboType combo boxes, attachBtn, continueBtn, and submitbtn to collect and validate the information entered and add it to the database. But if the user chooses to Find a pet for adoption in the “Adopt” Scene, so he can filter the type of pets if he does an action on the cboPets combo box.
We still have some additional source events, such as: price button to calculate the price in the “PetHotelScene” and confirmReserve button to confirm the reservation and save it in the database.

C. Java Database Programming

We have 4 tables for now.
First table for the user and he can add post in the living information, its name is “user”, its columns is:

user_id	INT AI PK
username	varchar(50)
email	varchar(100)
password	varchar(100)

Second table for the Pet information , its name is “pet”, its columns is:

Pet_id	INT AI PK
pet_name	varchar(50)
pet_dob	date
pet_type	varchar(45)
pet_food	varchar(200)
pet_health	varchar(200)
pet_care	varchar(200)
pet_games	varchar(200)
pet_pic	varchar(200)

Third table for add post to offer for adoption, its name is “Adoption”, its columns is :

PetId	INT AI PK
PetName	varchar(45)
PetType	varchar(45)
PetAge	varchar(10)
PetAgeUnit	varchar(45)
PetGender	varchar(45)
PetWeight	varchar(45)
PetInfo	varchar(500)
PetImage	varchar(250)

OwnerName	varchar(45)
Phone	varchar(9)
Email	varchar(45)
Address	varchar(45)
Reason	varchar(500)

Fourth tabel is for the reservation on the pet hotel, its name is “petHotel”, its columns is :

IdPetHotel	INT AI PK
PetType	varchar(45)
City	varchar(45)
DOarrival	varchar(45)
DOdep	varchar(45)
price	varchar(45)

D.Extra

In addition to the existing functionality, we have added three extra methods to enhance the capabilities of the application.

The first method, checkValidWeight, validates the input in a text field for a weight value. It ensures that the input is a valid double value. If the input is invalid, the method updates the text field's style to provide visual feedback to the user and displays an error message using an alert dialog. If the input is empty, it assumes it to be valid. This validation ensures that the weight input is accurate and prevents any unintended errors or invalid data from being processed. Additionally, the method includes validation for an age value. It checks if a toggle group has a selected toggle for the age unit. It retrieves the text input from the text field and attempts to convert it into an integer. This validation ensures the age value is a valid integer.

The second method, Attach Photo, allows users to attach a photo file within the JavaFX application, treating it as a multimedia feature. By utilizing a File Chooser dialog, users can select an image file with popular extensions such as PNG, JPG, or JPEG. Once a file is chosen, the method retrieves the file's path and displays the selected photo in an Image View component. Additionally, the label provided as a parameter is updated to indicate the attached photo by showing the name of the selected file. This functionality enriches the user experience by enabling them to incorporate visual content as part of their interactions with the application.

The third method is to calculate the price of a pet’s hotel when the user interacts with a price button, indicating their intention to calculate the price for a service or

accommodation. Within this method, we retrieve the selected arrival and departure dates. We then calculate the number of:
days between these dates Next, we validate the selected dates and ensure they are valid. If the dates are valid, we proceed with the price calculation.
Inside the calculation block, we check if both arrival and departure dates are not null. If they are not null, we proceed to calculate the price based on the number of days. The calculated price is then displayed in the text field.

In addition to those methods, there are three important methods in the sign-up interface that help make sure users provide valid information. The 'checkValidUsername' method checks if the username meets certain criteria, like how long it is, and which characters are allowed. The 'checkValidEmail' method focuses on making sure the entered email address looks correct. It checks if it has the right format. Finally, the 'checkValidPassword' method checks if the password is secure enough, for example, if it's long enough. These methods work together to make sure users are entering the right kind of information when signing up.

By adding all these methods, the application provides additional functionalities such as input validation for username, email, password, weight and age values, the ability to attach and display photos, and the calculation and display of prices based on selected dates. These enhancements contribute to the overall functionality, user-friendliness, and multimedia capabilities of the JavaFX application.

5- The distribution of the work

In this section, mention the distribution of the work between the team. Be honest and feel free to show your tasks individually.

Member	Task(s)
1- Jana Alomairi	Welcomig scene, Pet Hotel scene, Database, Report
2- Aghid Alansari	Home page, About scene, Living Information scene, Add Pet Info scene Database, Report
3- Wsaif Al-kuzaie	Adopion Options ,Medical assistance Database, Report
4- Dawla Asiri	Offer for Adoption(1 and 2), Search for Adoption, Pet Account Scenes Database, Report
5- Jana Alqurashi	Log-in and Sign-up interfaces Database, Report

6- What we learnt

Through working on this project, we have learned how to divide work among group members, how to track errors and find solutions to them, and that we can make a program that is simple, useful and enjoyable at the same time, also we have gained some knowledge from each other. Teamwork had a major role in the completion of this project, and after its completion, we feel completely satisfied with our work, and we hope in the future that we can work on a larger project than this.

7- Project difficulties

We encountered some problems while working on this project, including the difficulty of integrating the interfaces for group members and working on them together, not knowing where the errors were, the difficulty of linking the codes and the database, also finding the appropriate time to work together was a little difficult.

8- Project Declaration

We confirm that the work of this project was solely undertaken by ourselves and that no help was provided from other sources as those allowed. As well as we confirm that we completely aware of the violation consequences of the academic integrity.

List all your IDs

Jana Alomairi
Aghid Alansari
Wasaif Al-kuzaie
Dawla Asiri
Jana Alqurashi