Department Of

Computer Science

CS 353

Database Systems

Project Proposal

https://datanimal-bilkent.github.io/

Asım Güneş Üstünalp 21602271
Turan Mert Duran 21601418
Radman Lotfiazar 21600450
Berdan Akyürek 21600904

1. Introduction

With the developments in technology, it is possible to see technological solutions in every field. Instead of using old-fashioned systems, people prefer technological systems due to their low cost and high efficiency. Like in many other fields, a technological solution can make the work in a zoo easier and more efficient. DatAnimal aims to provide an easy to use and low cost solution that makes zoo management easy.

2. Project Description

DatAnimal is a software for everyone in a zoo including visitors, employees and coordinators. DatAnimal aims to provide a better life for all Visitors, Employees, Coordinators and Animals. Visitors can follow and attend the events using DatAnimal. This way they can only join the events they are interested in without leaving home. Employees can organize their time and work effectively. They can check the stocks of their department and see the required work. They can see the animals in each cage and their situation. Veterinarians can follow the health situation of animals easily and keepers can see the food and cleaning conditions. Coordinators can manage the zoo easily. They can create or cancel events and check their situation.

3. Why Do We Need a Database for DatAnimal?

In the DatAnimal software, we are going to keep track of everything that can be found in zoo management systems. Information about employees, animals, stock situations, facilities, coordinators, visitors, events and treatments should be controlled somehow. Because keeping track of such big information is not easy, we are offering to use our database system that keeps all this information online. Thanks to the database, we will never lose any data on our clients. Their information is always safe with us.

On the other hand, lots of trees are cut down for papers. Can you imagine how much paper would we need to keep track of such a big system and how many trees would have to be cut down ?

4. How Do We Use a Database as a Part of the Project?

Our DatAnimal database is going to be providing all information that any zoo management system would need. We need a database for us to offer all these beautiful solutions to our customers. System will ask for any data that can be needed and the database is going to be used for retrieving the data. On the other hand, our system is going to make some changes on current zoo management systems, those changes need to be stored somewhere. In all such situations we will use our database as a part of our project and store safely all the information of our customers.

5. Requirement

5.1. Functional Requirement

In the DatAnimal application there are 2 different end-user types, employees and visitors. Both of them have to authenticate themselves in order to use applcation's features which are specified for each of them.

5.1.1. Visitor

- Visitors should be able to observe the zoo's working hour.
- Visitors should be able to observe their time and date of entrance and exit.
- Visitors should be able to observe how much money they spend in the zoo.
- Visitors should be able to attend different events which are prepared by coordinators.
- Visitors should be able to pay the price of events through the application.
- Visitors should be able to write comments on group tours.
- Visitors should be able to read the comments which other visitors write about group tours.
- Visitors should be able to fill a complaint form and see the response to their complaint made by the coordinators.
- visitors should be able to donate as much as possible to conservation organizations.

5.1.2. Employee

There are three different types of employees which we discuss about their authentication separately.

5.1.2.1. Coordinator

- Coordinators should be able to create events
- Coordinators should be able to assign the cage to keepers weekly.
- Coordinators should be able to invite veterinarians to specific educational programs.
- Coordinators should be able to read the compliant forms.
- Coordinators should be able to respond to the complaint forms.
- Coordinators should be able to project how much money is collected for a conservation organization.
- Coordinators should accept or reject the requests of treatment and training for animals.
- Coordinators should be able to specify the quota of visitors for each group tour.
- Coordinator is able to send an email to all visitors of an event to inform them about cancelation or modifications.

5.1.2.2. Keeper

- Keepers should be able to see which cage they are responsible for each week.
- Keepers should be able to schedule training for animals
- Keepers should be able to request treatment for animals.
- Keepers should be able to regulate foods for animals.

5.1.2.3. Facility Worker

- Facility workers should be able to observe how much money they earn monthly.
- Facility workers should be able to update the stock.
- Facility workers should be able to observe what is stored in stock and how much it is.

- Facility workers should be able to observe the history of the stock's update.
- Facility workers should be able to purchase food for animals and update the food storage.

5.1.2.4. Veterinarian

- Veterinarians should be able to observe in which educational programs they are invited.
- Veterinarians should be able to observe all information about educational programs which they are invited to.
- Veterinarians should be able to accept or reject the invitation for participating in an educational program.
- Veterinarians should be able to examine animals.
- Veterinarians should be able to request treatment for animals.
- Veterinarians should be able to schedule different training for animals.
- Veterinarians should be able to request an emergency meeting with the coordinators.

5.2. Non-Functional Requirement

5.2.1. User-Friendly

System should be as clear as possible. Users should be able to find all features in the menu which is provided in the system. Furthermore, a user guide will help users to experience a friendly atmosphere.

5.2.2. Reliability

System should not crash when users are using it. System should perform all functionality without any failure continuously. Moreover, the system should perform all functionality as much as possible without occurring any errors and if it does face an error it should recover as fast as possible. Furthermore, as this system is a database system it should handle big data when responding to users' requests without much delay or error.

5.2.3. Security

Since personal information of users is stored in the database, the system should be secure. Each type of the user is provided with different features in the system, hence, their accessibility to these data should be limited based on their user type. Furthermore, for accessing more information they should request and specify their reason for accessing those data. Moreover, each user for logging in the system needs an email and password which they specified in the sign in process.

5.2.4. Capacity

As this system is a database system, it needs to have adequately large capacity to store all the information of the users and the required information about the Zoo(The stock of the facilities, the animals in the cages, the schedule of events etc.). While the number of employees of the Zoo is limited, the amount of visitors that can open an account on the system is not determined. That's why the system should have lots of spare capacity to handle those future visitors. Therefore, a database with adequate storage is needed to store all information without facing any error or delay.

5.3. Pseudo Requirement (constraints)

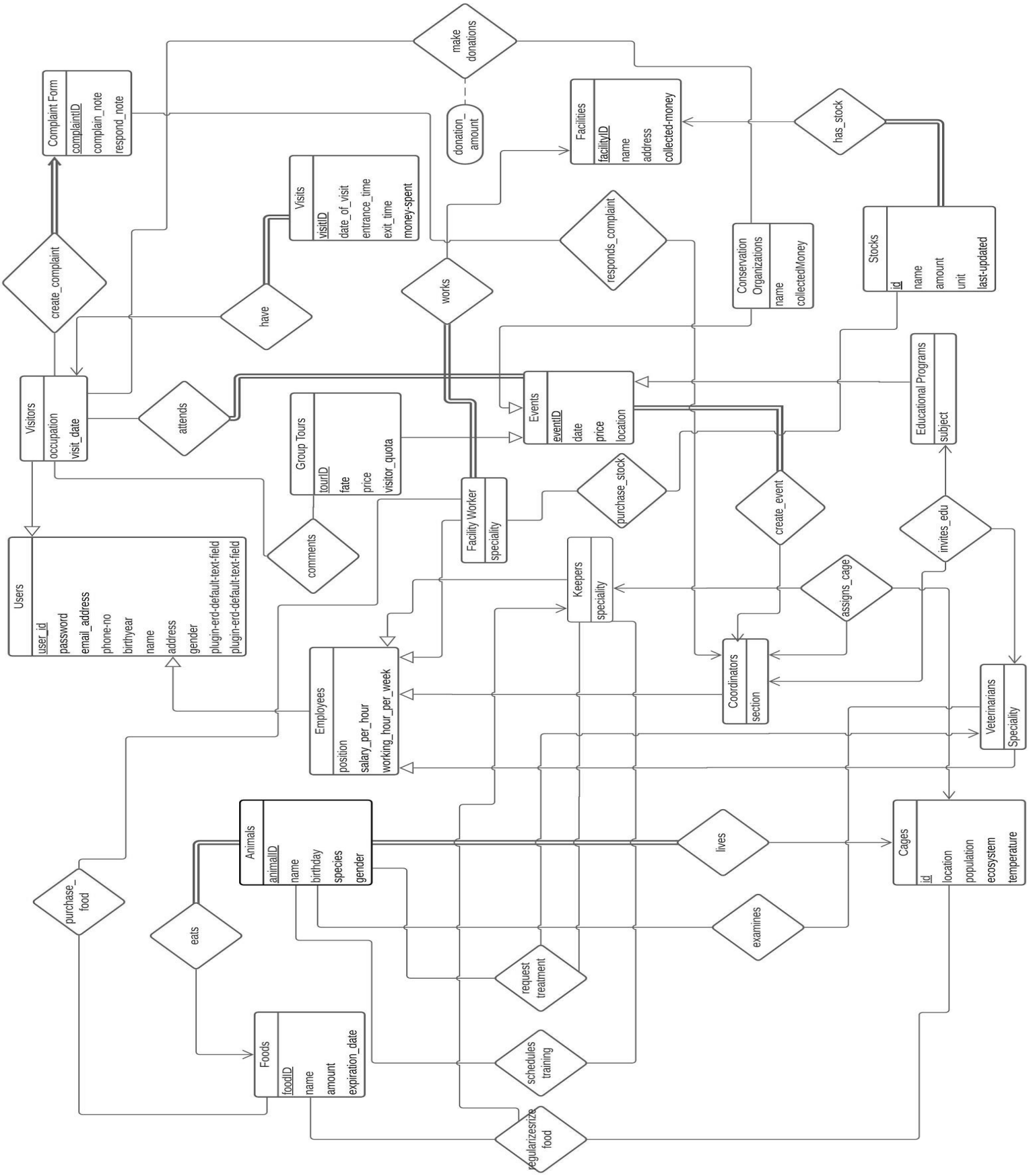
- MySQL will be used for programming the database
- For programming the website CSS, HTML and Javascript will be used.
- This is our website URL: https://datanimal-bilkent.github.io/

6. Limitation

- Visitors cannot participate in any event without paying its price.

- Visitors cannot request a complaint form and leave it blank; they have to fill it or delete it.
- Email addresses should be unique. in other words, with one email address visitors can create only one account.

7. ER Diagram


make donations
donation_ amount
Complaint Form
complaintID
complain_note
respond_note
Facilities
facilityID
name
address
collected-money
has_stock
Visits
visitID
date_of_visit
entrance_time
exit_time
money-spent
responds_complaint
Conservation Organizations
name
collectedMoney
Stocks
id
name
amount
unit
last-updated
create_complaint
have
works
Visitors
occupation
visit_date
attends
Events
eventID
date
price
location
Educational Programs
Subject
Group Tours
tourID
fate
price
visitor_quota
Facility Worker
speciality
purchase_stock
create_event
invites_edu
comments
Users
user_id
password
email_address
phone-no
birthyear
name
address
gender
plugin-erd-default-text-field
plugin-erd-default-text-field
Keepers
speciality
assigns_cage
Employees
position
salary_per_hour
working_hour_per_week
Coordinators
section
Veterinarians
Speciality
Animals
animalID
name
birthday
species
gender
lives
Cages
id
location
population
ecosystem
temperature
purchase_ food
eats
examines
request treatment
Foods
foodID
name
amount
expiration_date
schedules training
regularizesrize food

8. Conclusion

DatAnimal is a web-based Zoo Management System that allows its users to access various information about the Zoo based on their account type (visitors can access the info about group tours and keepers can access info about the cages). It also allows its users to make certain actions such as donating to a conservation organization as a visitor. To enable all this functionality DatAnimal will have a database system that runs in the background and an internet site to interact with the system.