Sprint 2

(Team Name)

Virtual Pet Care App

Software Engineering Project

Name (s):

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Semester: Fall 2024

Group Number: 3

Name of the Guide: Dr. Tushara Sadasivuni

Date: (10/06/2024)

Section 1:

Planning and Scheduling table

You will make a table like the one you have created for the previous sprints. The table should focus on the current assignment ONLY!!

The Group Coordinator must be changed for every sprint.

Assignee Name	Email address	Task	Duration (hours)	Dependency	Due Date	Evaluation
Stephen Lu	slu19@student.gsu.edu	Use case and requirement, diagram	6	None	10/06	(Stephen Completed 100% of their work and contributed)
Nuha Muhammad	nmuhammad31@student.gsu.edu	Use case and requirement, diagram	6	None	10/06	(Nuha Completed 100% of their work and contributed)
Brenton Gibson	bgibson19@student.gsu.edu	Use case and requirement, diagram	6	None	10/06	(Brenton Completed 100% of their work and contributed)

Kang Yang	kyang30@student.gsu.edu	Use case and requirement, database, GitHub	8	None	10/06	(Kang Completed 100% of their work and contributed)

Section 2:

Revise and Refine your System (Improved Problem Statement)

Based on the feedback provided and additional topics covered in class, you must revise, refine, complete, and include your problem statement and user requirements with sprint 2. Therefore, you will write an improved version of the Problem Statement you provided in Sprint 1. (Highlight the changed or improved system)

1. What is your product, on a high level?

   Our product is an educational virtual pet game that combines interactive learning with entertainment. Users care for a virtual pet, exploring important life skills such as responsibility and empathy while enjoying a fun and engaging environment. The game offers various choices and activities that not only foster knowledge about pet care but also provide a relaxing escape, making it an enjoyable experience for users of all ages.

2. Who is it for?

   Our product is designed for individuals planning to adopt a pet who want to learn how to care for animals effectively. It also appeals to pet enthusiasts who may lack the time, energy, or resources for a real pet, as well as anyone seeking a relaxing way to unwind through virtual pet care.

3. What problem does it solve?

   Our app addresses the challenge of pet care education for those who are unsure how to look after a pet. It provides users with essential information on pet care responsibilities and important considerations, fostering a sense of responsibility and empathy. Additionally, the app serves as a relaxing and enjoyable experience, allowing users to take a break while learning about virtual pet care.

4. What alternatives are available?

Alternatives include pet-related videos, TikTok clips, photos, and articles that offer information on pet care. While these resources can provide valuable insights, they often lack the interactive and engaging experience that our educational virtual pet game offers.

5. Why is this project compelling and worth developing?

   It offers a fun and interactive way for people to learn how to care for pets. Users can experience the entire cycle of pet care, from adoption to nurturing, in a safe and engaging environment. This not only enhances their understanding and skills but also fosters a deeper emotional connection to the responsibilities of pet ownership.

6. Describe the top-level objectives, differentiators, target customers, and scope of your product.

   Top-Level Objectives:

   We aim to prioritize education in pet care while ensuring a user-friendly experience.

   Differentiators:

   Our product offers an interactive virtual pet experience that allows users to learn through engagement, making pet care fun and immersive.

   Target Customers:

   Our primary audience includes individuals planning to adopt a pet, pet enthusiasts without the resources for a real pet, and anyone seeking a relaxing educational experience.

   Scope:

   The app will feature three virtual pets: a dog, a hamster/rabbit, and a snake, each with unique care requirements to provide a diverse learning experience.

7. What are the competitors and what is novel in your approach?

   Our competitors include other mobile applications that focus on virtual pets. What sets our app apart is its exclusive focus on education. Unlike other virtual pet games that prioritize entertainment, our app is specifically designed to teach users about responsible pet care, providing a unique and enriching learning experience.

8. Make it clear that the system can be built, making good use of the available resources and technology.

   We will build the system using the Flutter framework, allowing for cross-platform development that enables users to play on their mobile devices.

9. What is interesting about this project from a technical point of view?

From a technical perspective, this project is interesting because it allows users to interact directly with their virtual pets through engaging animations. This interactivity enhances the user experience, making pet care feel more lifelike and immersive.

10. Do you have a client login and an admin login?

    Yes, a user log in

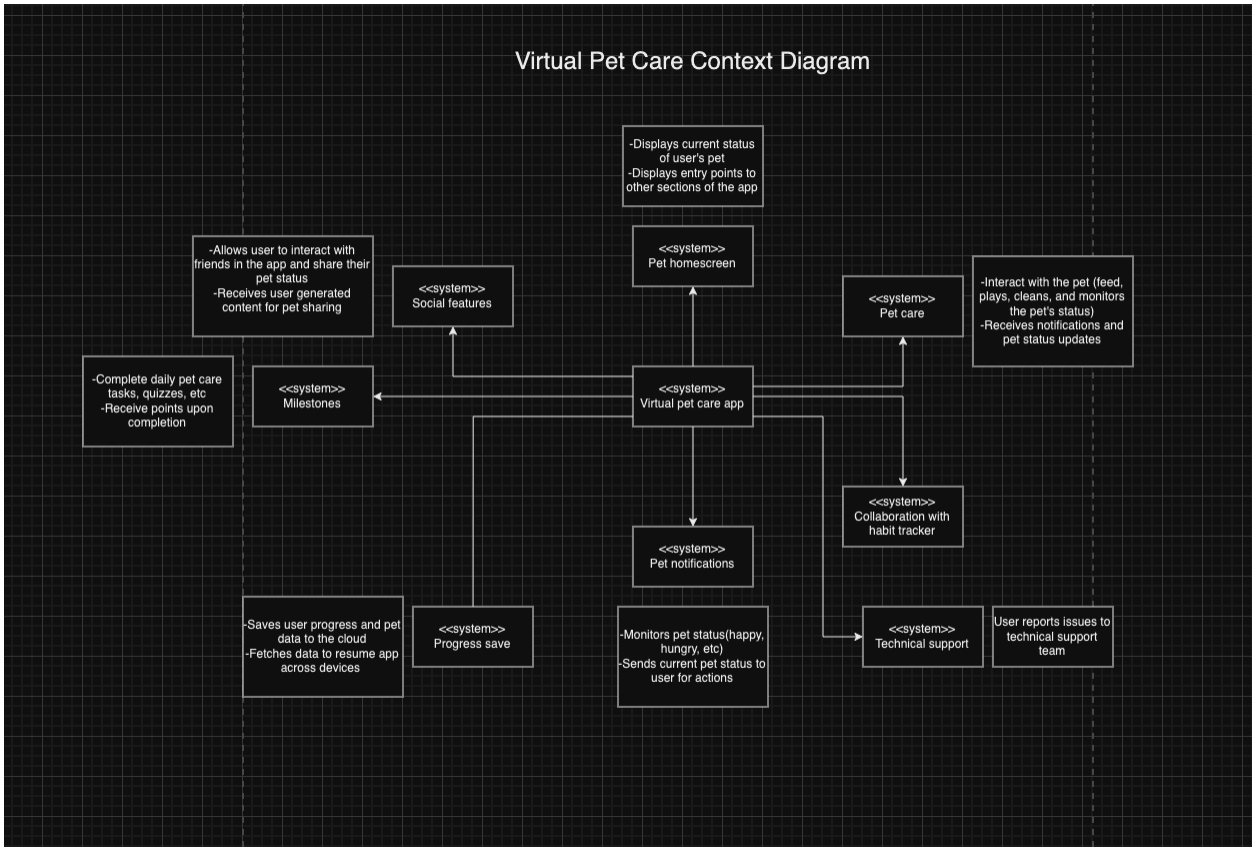
11. List any documents, if any, which were used as sources of information for the plan.

    N/A

Section 3:

Context Diagram

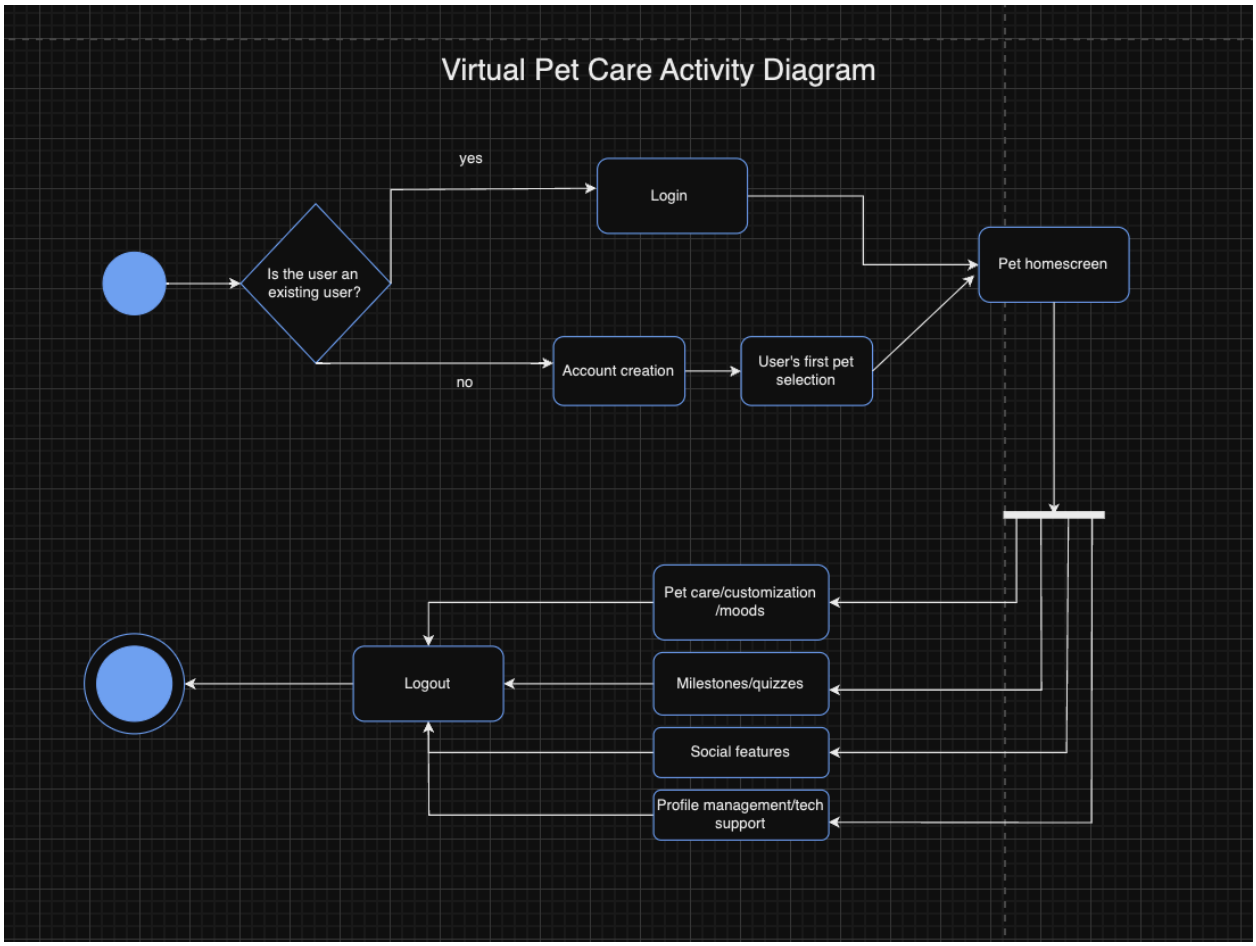
Based on the feedback provided and additional topics covered in class, you must revise, refine, complete, and include your context diagram with sprint 2. Therefore, you will have an improved version of the context diagram you provided in Sprint 1.



Section 4:

Activity Diagram

Based on the feedback provided and additional topics covered in class, you must revise, refine, complete, and include your activity diagram with sprint 2. Therefore, you will have an improved version of the activity diagram you provided in Sprint 1.



Section 5:

1. Login/Logout
2. User Registration/Account Creation
3. Profile Management
4. Technical Support

5. Social Features
6. Pet Dashboard/Home Screen
7. Pet Selection
8. Pet Care/Daily Pet Care Checklist
9. Milestones/Pet Life Cycle
10. Learning Quizzes
11. Achievements/Awarded Ribbons for Quiz Completion, Maintaining Pet Health, etc.
12. Push Notifications/Reminders
13. Pet Customization
14. Pet Mood and Behavior System
15. Interactive Pet Mini-Games

System Requirements (Use cases, Requirements, and use case diagrams)

Section 5.1 Use cases

List all the use cases you have for the project. For the class project, we will need at least 15 use cases to make one project. Make sure you follow the format.

Use Case 1: Login/Logout

Use Case no.: #1

Use Case name: Login

Actors: User and database

Description:

1. When the user is logging in, they will enter their username and password.
2. The database then checks to ensure that they entered the correct username and password.
3. If correct, the user will then be directed to their home page.
4. When the user is logging out, they simply click the “log out” button which will give them a confirmation that they successfully logged out.
5. The database will ensure that the user’s account in logged out as of that moment. The user will then be automatically directed to the login page.

Exception Path: If the user cannot log in, they may have entered an incorrect username and/or password. The user can reset their username and/or password when needed.

Alternate Path: if the users have entered the correct username and password and are still getting errors, they can contact the support team.

Pre-condition: User must have created an account and made a username and password

Post-condition: If the user logs in, the home screen will be displayed. When the user logs out, there will be a confirmation telling the user they successfully logged out, and then they will be directed to the login page.

Use Case 2: User Registration/Account Creation

Use Case no.: #2

Use Case name: User Registration/Account Creation

Actors: User and database

Description:

1. When the user is creating their account, they will enter their details such as their name, dob, phone number, or email address, and create a username and password.
2. The database will save the user's info.
3. Once the account is created, the user will log in and be directed to the home screen.

Exception Path: If the user cannot create an account, the username that they chosen may have already been taken by another user. The user must create a username that is unique.

Alternate Path: If there is still an error, the user may have entered the other details wrong, so the user must double-check everything to ensure it is correct.

Pre-condition: The user must have the app downloaded

Post-condition: Once the user makes an account, they will be prompted to the login page, which will then direct them to the homepage

Use Case 3: Profile Management

Use Case no.: #3

Use Case name: Profile Management

Actors: User and database

Description:

1. The user will click their profile icon
2. The user can change/update/add their information
3. All changes will be updated in the database

Exception Path: If the user wants to update their info and they are getting errors, the user needs to ensure their username is unique.

Alternate Path: If the user still cannot update their info, they can contact the support team.

Pre-condition: The user must have created an account and logged in.

Post-condition: If any changes to the user's details have been made, the changes will be displayed.

Use Case 4: Technical Support

Use Case no.: #4

Use Case name: Technical Support

Actors: User, support team, and database

Description:

1. When the user is submitting a help ticket, the user will enter the title and a short description of the issue.
2. The ticket will then be sent to the support team.
3. The user will get a confirmation email with a unique ticket number.
4. This number and the status of this ticket will be stored in the database.
5. The support team will get in contact with the user about the issue, and once it is resolved the user will get an email saying that the issue has been resolved.
6. The database will update the status of the ticket from unresolved to resolved.

Exception Path: If the user cannot submit a ticket through the app, the user can directly email the support team.

Alternate Path: If the user cannot get in touch with the support team, the user can contact other staff

Pre-condition: The user must have submitted a help ticket.

Post-condition: The user will get a confirmation email with a unique ticket number, the support team will get in contact with the user, and once the issue is resolved, the ticket's status will change to "resolved".

Use Case 5: Social Features

Use Case no: 5

Name of the Use Case: Social Features

Actors: User, System, Friends, Database

Description: Users can add friends who also use the app, visit each other's virtual pets, and interact socially by sharing pet stats, achievements, and completing challenges together. The app will display a leaderboard, where users can compete based on pet care and quiz performance. Users can send friend requests, accept or decline friend invitations, and remove friends from their friend list. Users can visit their friends' pet dashboards to see the progress and interact.

Steps:

1. The user navigates to the "Friends" section within the app.
2. The user sends a friend request to another user by searching for their username.
3. The system notifies the recipient of the friend request.
4. The recipient either accepts or declines the request.
5. If the request is accepted, the friend is added to the user's friend list.
6. The user can visit the friend's virtual pet dashboard and interact (e.g., give a virtual treat).
7. The system updates the leaderboard based on the user's and their friends' pet care and quiz performance.
8. The leaderboard displays rankings and pet stats in real-time.

Alternate Path: If the user has no friends, the system suggests friends based on mutual connections or similar in-game activity.

Exception Path: If the server is down, friend requests and leaderboard information will be unavailable temporarily.

Pre-condition: The user must have a valid account and be logged into the system.

Post-condition: The user can interact with other users' virtual pets, send and accept friend requests, and participate in the leaderboard.

Use Case 6: Pet Dashboard/Home Screen

Use Case no.: #6

Use Case Name: Pet Dashboard/Home Screen

Actors: User, Database

Description: The Pet Dashboard displays the current status of the user's virtual pet. If the user has no pets, the system automatically prompts them to the pet selection tab to adopt their first pet. The dashboard shows the pet's current status and provides entry points for other sections like pet care/milestones, etc.

1. Users log in or sign up if they have not created their account.
2. The system retrieves user-specific pet data from the database and displays the dashboard.

3. If users have a pet, then display its current status (health, mood, needs, etc.). If users have no pet yet, the system will prompt users to go to the pet selection page to have their first pet.
4. Users can execute actions (feed, clean, interact, etc.) through entry points on the dashboard.
5. The system updates the pet's status based on user actions and stores it in the database.
6. The system sends notifications if the pet requires attention (e.g., hungry, ill).
7. Users may respond to notifications and take action.

Alternate Path: Users can switch between multiple pets, and the dashboard will update in real time to reflect the selected pet's status.

Exception Path: If a user attempts to perform an action on their pet while the pet's status does not support it, the system will display a message indicating that the action cannot be performed. For example, interactive games cannot be performed if the pet is in an "ill" status.

Pre-condition: The user must have an existing account and be logged into the app. The database must be operational with valid pet data available for the user.

Post-condition: The user's pet status is updated in the database, and the dashboard reflects the latest status of the pet (health, happiness, needs, etc.).

Use Case 7: Pet Selection

Use Case no.: # 7

Use Case Name: Pet Selection

Actors: User, Database

Description: The Pet Selection use case allows users to browse available virtual pets and adopt their first pet or select an additional pet if they already have one (restriction: no more than 3). The system displays various pets, including their attributes such as type, breed, age, and health status. Users can choose a pet by confirming their selection. Once adopted, the pet will be linked to the user's account, and the user will receive a confirmation of the successful adoption. Then the user will be guided to the pet dashboard.

1. Users log in or sign up if they have not created their account.
2. After logging in, the user navigates to the Pet Selection tab.
3. The system can search for available pets and display a list of their attributes
4. The user reviews the list and selects a pet for adoption.
5. The system displays detailed information about the selected pet from the database.
6. The user confirms their selection to adopt the pet.
7. The system updates the database to link the selected pet to the user's account.
8. The system sends a confirmation message to the user, indicating the successful adoption of the pet, and guides the user to the pet dashboard.

Alternate Path: If a user already has a pet, they can browse available pets for additional adoption (a user can at most adopt 3 pets). Users can cancel the adoption process at any time, returning to the previous screen.

Exception Path: If the user is not logged in, they are redirected to the login page or prompted to sign up.

Pre-condition: The user must have an existing account and be logged into the app.

The database must be operational with a list of available pets.

Post-condition: The user successfully adopts a pet, linking it to their account in the database.

Use Case 8: Pet Care/Daily Pet Care Checklist

Use Case no.: #8

Use Case Name: Pet Care/Daily Pet Care Checklist

Actors: User, Database

Description: The Pet Care use case allows users to manage daily care activities for their virtual pet, including feeding, cleaning up waste, playing interactive games, and monitoring the pet's mental and physical states. Users can access Pet Care through the dashboard or by clicking on notifications related to the pet's status. Upon completing the checklist, the system rewards the user with a visual confirmation and updates the pet's attributes in the database based on the actions taken.

1. The user logs in and navigates to the Pet Care section via the dashboard or through a notification about the pet's status.
2. The system retrieves the daily care checklist from the database and displays it to the user, including tasks such as feeding, cleaning, playing, and monitoring health.
3. The user selects tasks from the checklist to complete them.
4. For each task (e.g., feeding, cleaning), the user interacts with the system, which may involve selecting options or confirming actions.
5. If the pet's status indicates urgent care is needed, the checklist may provide additional instructions for handling these situations.
6. Upon completing the checklist, the system displays a reward screen that recognizes the user's efforts.
7. The system updates the pet's attributes in the database based on the completed tasks.

Alternate Path:

The user may choose to skip one or more optional tasks on the checklist. The system will prompt the user to confirm their decision and may provide reminders at the next time.

Exception Path:

If the pet's status changes (e.g., becomes ill) rapidly, the system may send additional notifications prompting the user to take urgent actions.

Pre-condition:

The user must be logged into the app and have adopted a pet. The database must be operational and contain valid pet data, including the pet's current attributes and care requirements.

Post-condition:

The user successfully completes the daily care checklist. The pet's attributes in the database are updated according to the actions taken by the user.

Use Case 9: Milestones/Pet Life Cycle

Use Case no.: #9

Use Case Name: Milestones/Pet Life Cycle

Actors: User and Database

Description:

The Milestones section enables users to track and record significant events in their pet's life, such as adoption dates and birthdays, as well as user-triggered milestones (e.g., achieving 100 interactions, and logging in for 100 consecutive days). Each time the user logs in, the system prompts them to view any new milestones.

1. The user logs in and enters the pet dashboard.
2. The system prompts the user to view any new milestones that have been recorded since their last visit.
3. If the user chooses to view milestones, they navigate to the Milestones section from the Pet Dashboard.
4. The system retrieves milestone data from the database and displays significant events related to the pet's life in chronological order.
5. The system automatically records new milestones when they occur and updates relevant records in the database.

Alternate Path: Users may create custom milestones that hold personal significance, which the system will record. If the user has adopted multiple pets, they can switch between different milestones.

Exception Path: If a milestone should trigger but does not due to a system error, the user is notified of the failure and prompted to check their interactions.

Pre-condition: The user must be logged into the app and have adopted at least one pet.

Post-condition: The user successfully views the milestones associated with their pet. New milestones are recorded in the databaachievementse as they occur.

Use Case 10: Learning Quizzes

Use Case no: 10

Name of the Use Case: Learning Quizzes

Actors: User, System, Database

Description: The app offers quizzes on pet care, which users can complete to earn points or badges. Quizzes are presented in multiple-choice format with immediate feedback after submission. After completing a quiz, the user is shown the correct answers and explanations to reinforce learning. The quizzes will cover topics like feeding, grooming, and general pet health. Users can retake quizzes, but their best score will be stored for leaderboard purposes.

Steps:

1. The user navigates to the "Quizzes" section in the app.
2. The system presents a list of available quizzes based on topics related to pet care.
3. The user selects a quiz to start.
4. The system loads the quiz questions, which are multiple-choice.
5. The user answers the questions and submits the quiz.
6. The system provides immediate feedback on correct and incorrect answers.
7. The user is shown the correct answers with explanations to reinforce learning.
8. The system awards points or badges based on the user's performance.
9. The user's score is stored, and if it's their best score, it is added to the leaderboard.

Alternate Path: If the user fails a quiz, they can immediately retake it or review the material before trying again.

Exception Path:If the quiz data fails to load due to a server issue, an error message will be displayed, and the user will be unable to access quizzes until the connection is restored.

Pre-condition: The user must be logged in and have an active pet profile.

Post-condition: The user completes the quiz, receives immediate feedback, and earns points or badges for their achievement.

Use Case 11: Achievements and Awards

Use Case no: 11

Name of the Use Case: Achievements and Awards

Actors: User, System

Description: Users earn achievements and awards for completing specific milestones (daily pet care tasks, quizzes, long-term pet health maintenance). Each achievement is represented by badges or ribbons that are displayed on the user's profile and the leaderboard. Users can unlock special awards for continuous streaks or reaching specific milestones, such as one week of perfect pet care. Achievements contribute to the user's ranking on the leaderboard, increasing their competitive standing.

Steps:

1. The system tracks the user's completion of daily pet care tasks (feeding, grooming, etc.) and quiz performance.
2. The system assigns points or badges based on the user's performance and milestones reached.
3. When the user completes a milestone or streak (seven consecutive days of perfect pet care), the system awards an achievement badge or ribbon.
4. The system updates the user's profile to display their new achievement.
5. The user's progress is also reflected on the leaderboard, increasing their competitive ranking.
6. The user can view their achievements in the "Profile" section and share them with friends.
7. The system continually tracks new milestones for future awards.

Alternate Path: Users who do not reach milestones will not receive the corresponding achievement, but they can attempt the tasks again.

Exception Path: If the system fails to update the user's achievements due to a technical error, a fallback default state will be stored until the issue is resolved.

Pre-condition: The user must be actively engaging in pet care tasks or quizzes to unlock achievements.

Post-condition: Achievements and awards are unlocked at pet level 3 and displayed on the user's profile, contributing to their leaderboard score.

Use Case 12: Push Notifications and Reminders

Use Case no: 12

Name of the Use Case: Push Notifications and Reminders

Actors: User, System

Description: The app sends push notifications to remind users of tasks such as feeding, grooming, or playing with their pet. Notifications will also remind users about upcoming quizzes or expiring tasks. Users can customize their notification preferences (e.g., how often reminders are sent, which types of notifications they want to receive). The app will notify users of important events like pet milestones or low pet health status.

Steps:

1. The user navigates to the "Settings" section to configure notifications.
2. The system presents options for notifications, including task reminders, quiz alerts, and pet health updates.
3. The user selects their preferences for how often and which types of notifications they want to receive.
4. The system schedules notifications based on user preferences and upcoming events (feeding times, quiz deadlines).
5. The system sends push notifications to the user's device at the scheduled times.
6. When the user receives a notification, they can tap it to be directed to the corresponding task in the app.
7. The system tracks the user's interaction with the notification (completing the task or dismissing the notification).
8. The app continues to send reminders until the task is completed or the notification is dismissed.

Alternate Path: If a user disables notifications, the app will not send reminders unless re-enabled through settings.

Exception Path: If the notification service is unavailable, users will not receive reminders, and the system will log an error.

Pre-condition: The user must have notifications enabled in their app settings.

Post-condition: Users receive notifications about pet care tasks, quizzes, and other important events.

Use Case 13: Pet Customization

Use Case no.: #13

Use Case Name: Pet Customization

Actors: User, Database

Description:

1. User select the pet they want to customize
2. A tab will pop up showing all the different ways it can be customized
3. The user will select one choice they want the pet to be customized from clothing, traits, environment and etc.
4. Once pet is customized to the users liking the app will reward the user varying on the customization (boost in pet mood, pet points, experience)

Alternate Path: Users can switch between multiple pets, change the customizations of each one and change back if the user dislikes the current customization

Exception Path: If the user tries to perform a customization on a pet that cannot be done on that pet the app will prompt the user that it cannot perform that action. (user tries to put dog clothing on bird)

Pre-condition: The user must have a pet and have customizations available

Post-condition: The user's pet status will be updated once customizations are complete.

Use Case 14: Pet Mood and Behavior System

Use Case no.: #14

Use Case Name: Pet Mood and Behavior System

Actors: User, Database

Description:

1. Pet will have certain moods across a spectrum, can be react to different times and settings and is in real time
2. User can attempt to change pet mood to a more desirable one through mini games, customizations.
3. Pet will react to these changes and will change moods respectively

Alternate Path: Users can choose to ignore mood and the system will remind the user that the pet is still in a certain mood through notifications

Exception Path: User can attempt to change a pets mood but is unsuccessful, system will prompt the user to check this.

Pre-condition: The user must have a pet and have notifications

Post-condition: The user can successfully boost pet mood or fail, the user will be prompted accordingly and can receive points.

Use Case 13: Pet Mini Game

Use Case no.: #13

Use Case Name: Pet Mini Game

Actors: User, Database, Games

Description:

1. User can choose to play a game with the pet
2. Once selected the User will be in game and will play out the game
3. Depending on how successful the user is, they will be rewarded and pet mood can be boosted

Alternate Path: User can do poorly on the mini game and will not earn any rewards due to poor performance

Exception Path: User does not have an account to play mini game or the user does not have a pet

Pre-condition: User must have an account and have a pet to play minigame

Post-condition: User will earn reward and pet mood points

Section 5.2 Requirements

Requirement name: Login/Logout

Requirement number: #1

Use Case number: Use Case #1

Introduction: This allows the user to log in and log out of the app.

Inputs: Username and password.

Requirements Description: In order for the user to be able to log in and log out, the user must have created an account and made a username and password.

Outputs: If the user logs in, the home screen will be displayed. When the user logs out, there will be a confirmation telling the user they successfully logged out, and then they will be directed to the login page.

Requirement name: Account Creation

Requirement number: #2

Use Case number: Use Case #2

Introduction: This is where the user creates their account by making their own username and password.

Inputs: Name, date of birth, phone number or email address, username, and password.

Requirements Description: The user must have the app downloaded in order to create an account.

Outputs: Once the user makes an account, they will be prompted to the login page, which will then direct them to the homepage.

Requirement name: Profile Management

Requirement number: #3

Use Case number: Use Case #3

Introduction: This allows the user to manage their profile. The user can do many things such as setting a profile picture, linking social media accounts, and changing the user details like their name, dob, contact information, username, and password.

Inputs: The user can upload a profile picture and change their details.

Requirements Description: The user must have created an account and logged in.

Outputs: If any changes to the user's details have been made, the changes will be displayed.

Requirement name: Technical Support

Requirement number: #4

Use Case number: Use Case #4

Introduction: This allows the user to seek help from the support team if the user faces any issues.

Inputs: The user will submit a ticket declaring the issue and a short description of the issue.

Requirements Description: The user must have an account and logged in.

Outputs: Once the ticket is submitted, the user will receive a confirmation email that the ticket will be sent to the support team with a unique ticket number. The support team will then be in contact with the user to fix the issue.

Requirement Name: Social Features

Requirement #: 5

Use Case #: 5

Introduction: A system that enables users to interact with each other's virtual pets and track their achievements through a leaderboard.

Input: User's selection of social actions such as friend requests, leaderboard participation, and interaction with friends' pets.

Requirement Description:

- The system must allow users to send friend requests, accept or decline invitations, and remove friends.
- There should be a leaderboard that tracks points based on pet care and quiz performance.
- Users must be able to visit each other's virtual pets and interact socially through predefined actions (gifting, compliments, etc.)

Output: The user's social interactions, friend list, and leaderboard standings are updated in real-time

Requirement Name: Pet Dashboard

Requirement number: #6

Use Case number: #6

Introduction: The pet dashboard specifies how the system should display pet statuses, guide users in adopting pets, and manage user interactions with their virtual pets.

Inputs: User credentials (username and password) for login. User selection for pet actions (feed, clean, interact). Users can choose to switch between multiple pets. Notifications about pet status.

Requirements Description:

The system must allow users to log in or sign up if they do not have an account.

Upon successful login, the system retrieves user-specific pet data from the database.

The dashboard must display the current status of the user's pet (health, mood, needs).

If the user has no pets, the system must automatically prompt them to the pet selection tab to adopt their first pet.

The dashboard must provide clear entry points for users to perform actions (feed, clean, interact).

The system must update the pet's

The system must notify users if their pet requires attention (e.g., hungry, ill).

Users must be able to respond to notifications and execute corresponding actions.

If users switch between multiple pets, the dashboard must update in real-time to reflect the selected pet's status.

If a user attempts to perform an action while the pet's status does not support it, the system must display an appropriate message indicating the action cannot be performed (e.g., interactive games cannot be performed if the pet is in an "ill" status).

Outputs:

The user successfully views their pet's current status on the dashboard.

Users are guided to the pet selection page if they do not have a pet.

User actions (feeding, cleaning, interacting) are successfully executed, and the pet's status is updated accordingly.

Notifications are correctly sent to users, and actions can be taken in response to those notifications.

The dashboard accurately reflects the status of the selected pet in real-time.

Requirement Name: Pet Selection

Requirement number: #7

Name: Pet Selection

Use Case number: #7

Introduction: The pet selection should enable users to browse available virtual pets for adoption. Users could make pet choices and adopt pets in pet selection.

Inputs:

Username and password for login.

User selection for adopting a pet from the available list.

Requirements Description:

Users must log in or sign up if they do not have an account.

The system must query the database for available pets and display a list that includes attributes such as type, breed, age, and health status.

Users must be able to review the list of available pets and select one for adoption.

Upon selection, the system should retrieve and display detailed information about the selected pet from the database.

The user must confirm their selection to adopt the pet.

Upon confirmation, the system must update the database to link the selected pet to the user's account.

Users must have the choice to cancel the adoption during the selection process, returning to the previous step.

After adoption, the user should be guided to the Pet Dashboard.

A user can adopt at most 3 pets.

Outputs:

Users can select a pet and view detailed information about it. The pet is successfully adopted, and the user's account is updated accordingly.

Requirement Name: Pet Care

Requirement number: #8

Use Case number: #8

Introduction: The pet care section enables users to manage daily care activities for their virtual pets.

Inputs:

Username and password for login.

User responses with the checklist tasks (feeding, cleaning, playing).

Notifications related to the pet's status that may prompt urgent care actions.

Requirements Description:

The system must ensure that users are logged into the app before accessing the Pet Care section.

Users must be able to navigate to the Pet Care section via the dashboard or by clicking on relevant notifications about the pet’s status.

The system must retrieve and display a daily care checklist from the database.

The user must be able to select and complete tasks from the checklist.

If the pet's status indicates a need for urgent care, the checklist should provide additional instructions for handling these situations.

The system must update the pet's attributes in the database based on the completed tasks (e.g., health, happiness, cleanliness).

Users should have the option to skip optional tasks. The system should prompt for confirmation and provide reminders for these tasks during the next session.

Outputs:

The user successfully views and interacts with the daily care checklist. The pet's attributes in the database are updated according to the actions taken by the user.

Requirement Name: Milestones

Requirement number: #9

Use Case number: #9

Introduction: The Milestones requirement outlines the functionalities that allow users to track and record significant events in their pet's life. This includes automatic tracking of critical dates, such as adoption days and birthdays, as well as user-triggered milestones based on interactions. The requirement ensures that users are engaged and reminded of important moments, enhancing their connection with their virtual pet.

Inputs:

User username and password for login.

User interactions with the system.

Data related to milestones.

Requirements Description:

Users must log in before accessing the Milestones section.

Upon logging in, the system must prompt the user to view any new milestones that have been recorded since their last visit.

Users must be able to navigate to the Milestones section from the Pet Dashboard if they choose to view milestones.

The system must retrieve milestone data from the database and display significant events in chronological order.

The system must record key milestones when they occur and update the relevant records in the database.

Users must have the option to create custom milestones that hold personal significance, which the system will record.

If the user has adopted multiple pets, the system must allow the user to switch between different milestones for each pet.

Outputs:

The user successfully views the milestones associated with their pet. New milestones are recorded in the database as they occur.

Requirement Name: Learning Quizzes

Requirement #: 10

Use Case #: 10

Name: Learning Quizzes

Introduction: The system provides educational quizzes related to pet care that users can complete to earn points and badges.

Input: User responses to quiz questions.

Requirement Description:

- The system must present quizzes covering various topics in pet care.
- Each quiz should provide immediate feedback on correct and incorrect answers, along with explanations.
- Users should earn points or badges based on their performance, which will contribute to the leaderboard.

Output: Quiz results are stored, points or badges are awarded, and the user is shown their performance.

Requirement Name: Achievements and Awards

Requirement #: 11

Use Case #: 11

Introduction: A system that tracks user progress and awards achievements for completing tasks and reaching milestones.

Input: User progress in tasks such as pet care, quiz completion, and milestone achievements.

Requirement Description:

- The system must track user progress and award badges or ribbons for specific achievements.
- Achievements must be displayed on the user's profile and leaderboard.
- Special awards should be granted for continuous streaks, long-term care, or completing a set of tasks.

Output: Achievements are awarded and displayed on the user's profile, contributing to their standing on the leaderboard.

Requirement Name: Push Notifications and Reminders

Requirement #: 12

Use Case #: 12

Introduction: A system that sends reminders to users to complete pet care tasks and quizzes or alerts them about pet-related events.

Input: System-generated reminders based on scheduled tasks and events.

Requirement Description:

- The system must send customizable push notifications to remind users of important tasks, quizzes, or milestones.
- Users should be able to configure notification settings to control the frequency and type of reminders they receive.
- Notifications must be sent in real time based on task deadlines or pet status.

Output: The user receives timely notifications, ensuring proper care and interaction with their pet.

Requirement Name: Pet Customization

Requirement #13:

Use Case #: 13

Introduction: Allowing Users to Customize their pet in various ways

Rationale: Different pet customizations give Users points and help Pet mood

Input: Users will choose what kind of customization for the pet; clothing, traits, setting.

Requirement Description: The User will have a pet they would want to customize and have a UI to change the pet traits, clothing, etc. This means the user MUST have a pet and if available clothing rewards.

Output: Once the pet is customized the user can be rewarded points and pet mood will vary.

Requirement Name: Pet mood and Behavior System

Requirement #14:

Use Case: #14

Introduction: A small popup showing the pet's moods at the time

Rationale: The user will be able to tell what the pet is feeling real time and make action according to it.

Input: Input can vary depending on the pet, not feeding it enough, customizations and mini games. Different types of moods

Requirement Description: requirements include having a pet and different moods traits its feeling. (mood bar)

Output: The pet will have a certain mood for a time unless changed by the user through feeding, games and customization.

Requirement Name: Pet Mini Game

Requirement #15:

Name: Pet Mini Game

Introduction: simple mini game to help interactivity

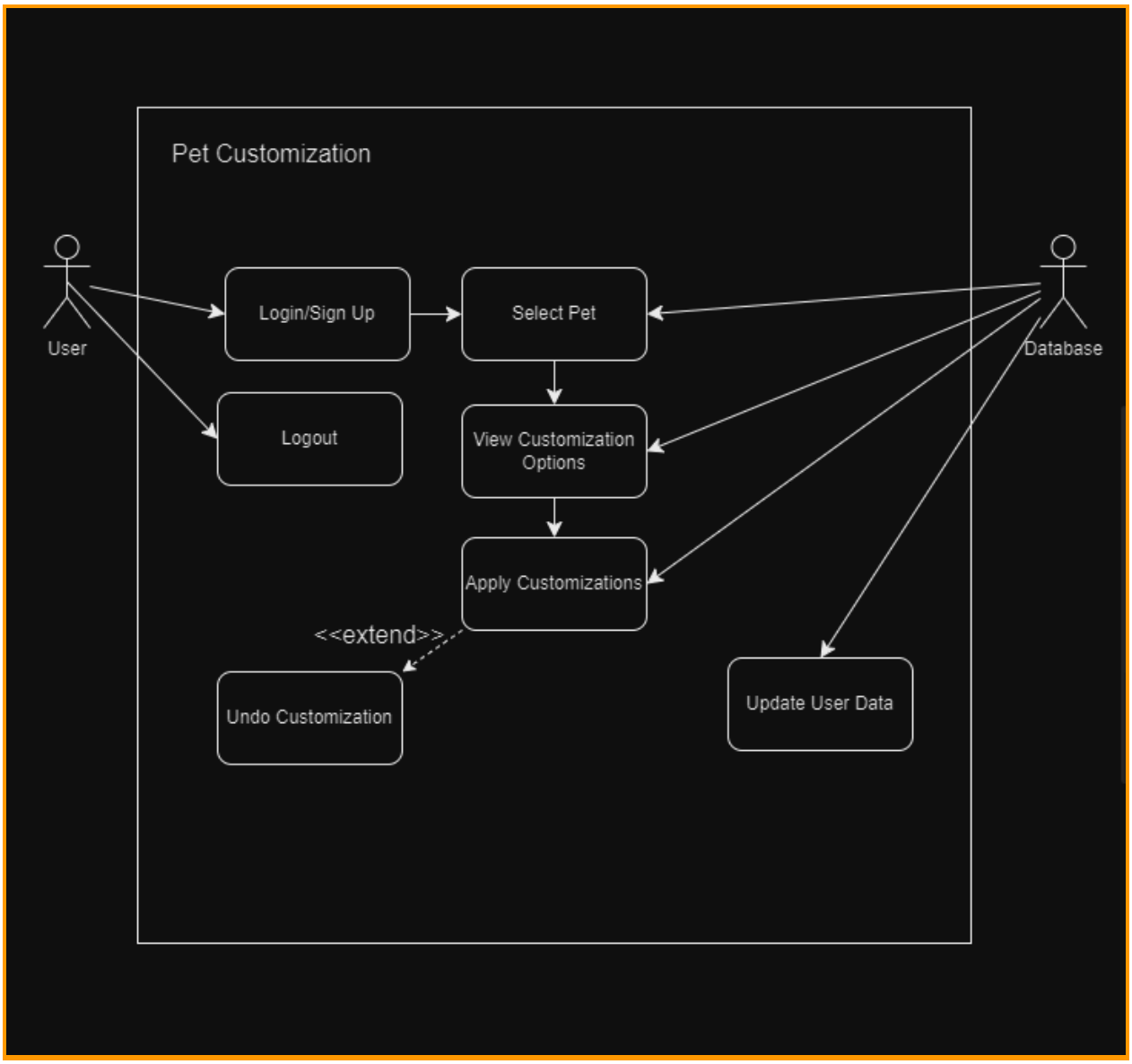
Rationale: The user will be able to play with the pet through game that can boost the pet's mood and earn rewards

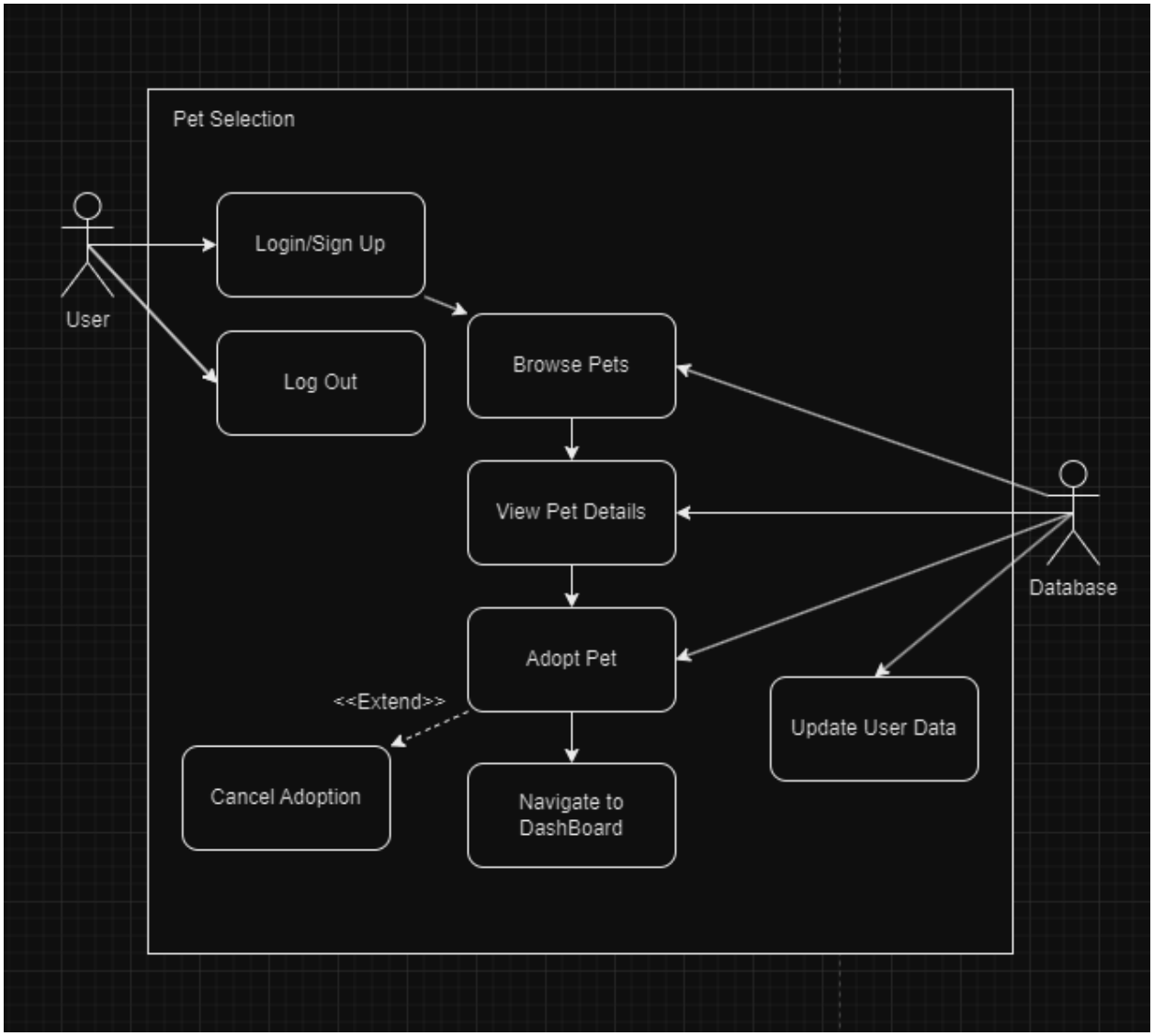
Input: Input from the user will be choice of game and game input

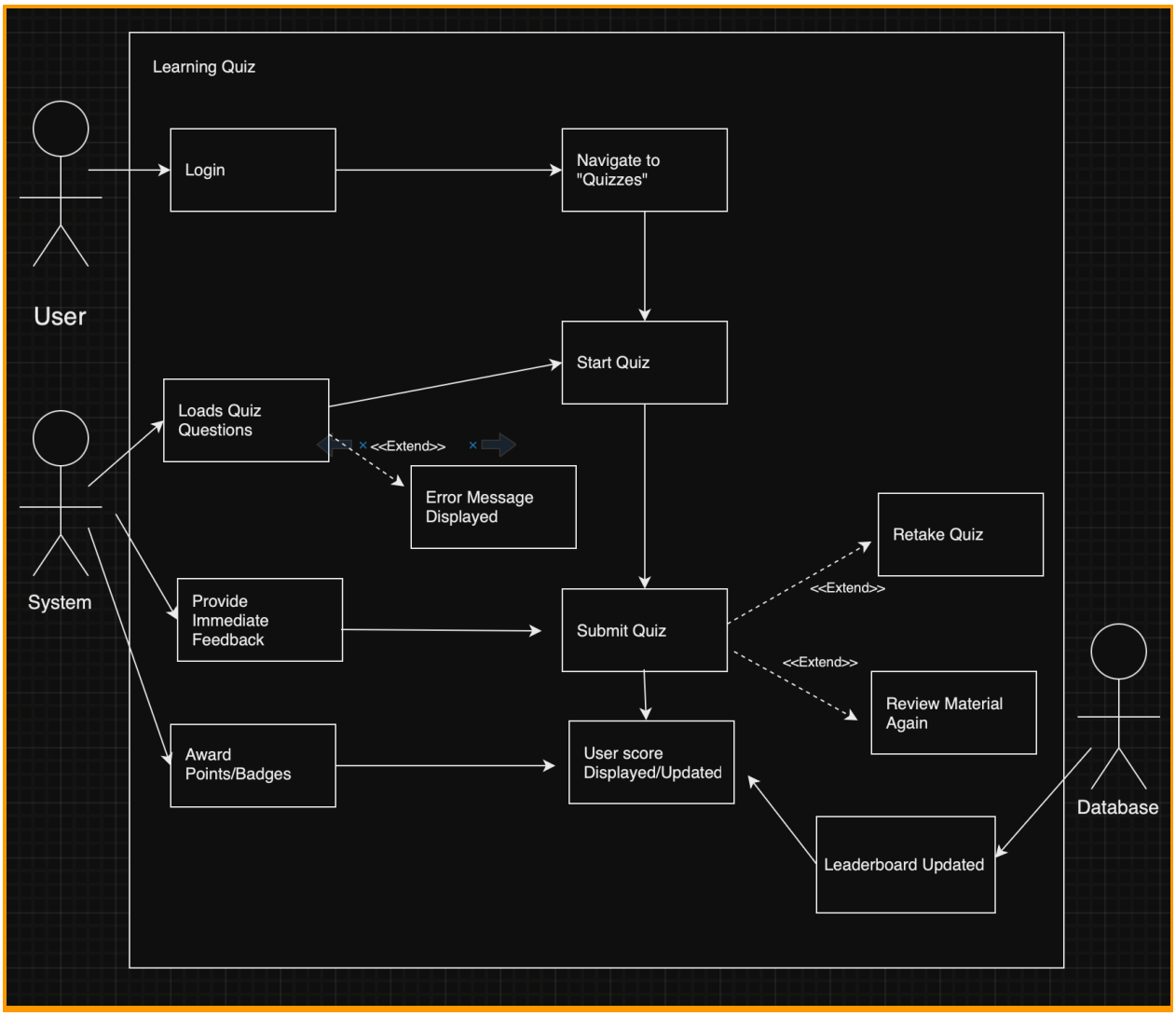
Requirement Description: User will need a pet and there must be games the choose

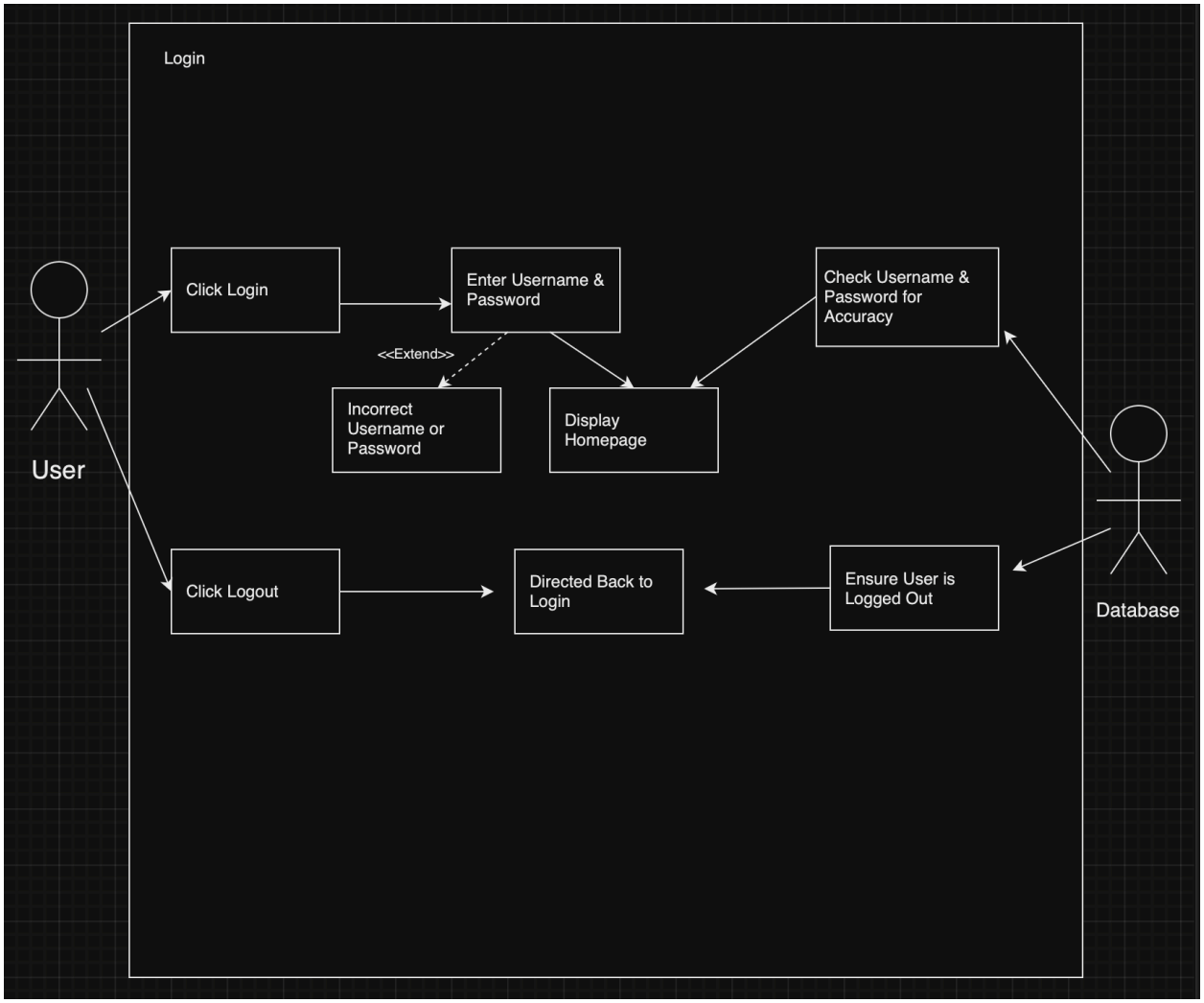
Output: Depending on how the game went the pet will have a change in mood and the user can earn points and rewards.

Section 5.3 Use case diagrams




Pet Selection
User
Login/Sign Up
Log Out
Browse Pets
View Pet Details
Adopt Pet
<<Extend>>
Cancel Adoption
Navigate to DashBoard
Update User Data
Database


Learning Quiz
Login
Navigate to "Quizzes"
User
Start Quiz
Loads Quiz Questions
<<Extend>>
Error Message Displayed
Retake Quiz
<<Extend>>
System
Provide Immediate Feedback
Submit Quiz
<<Extend>>
Review Material Again
Award Points/Badges
User score Displayed/Updated
Database
Leaderboard Updated

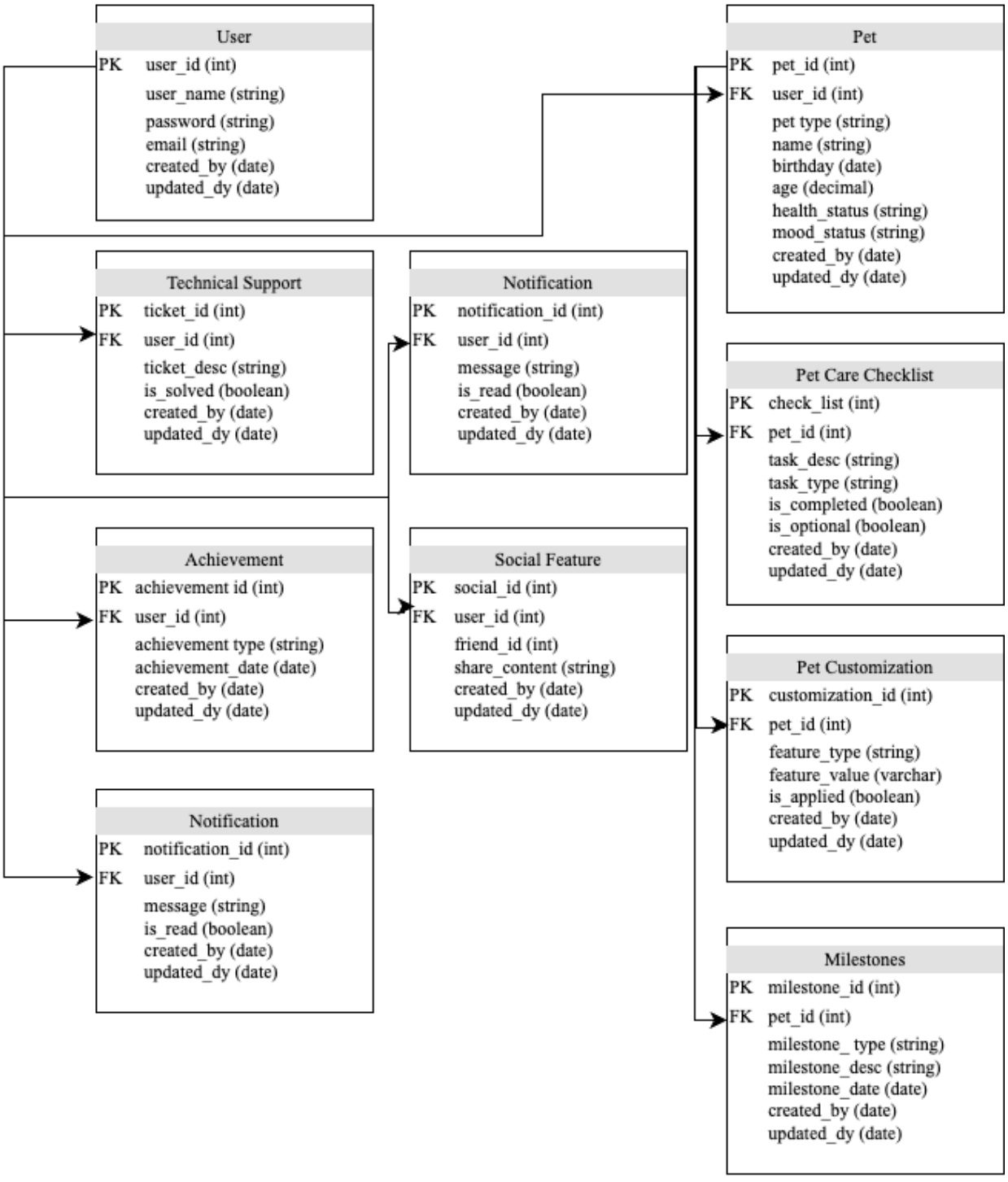


Section 6:

Database management

- Specify your system database tables (data attributes and their types) and the relationship between them (Primary Keys and Foreign Keys, etc...)

Virtual Pet Database Relational Model

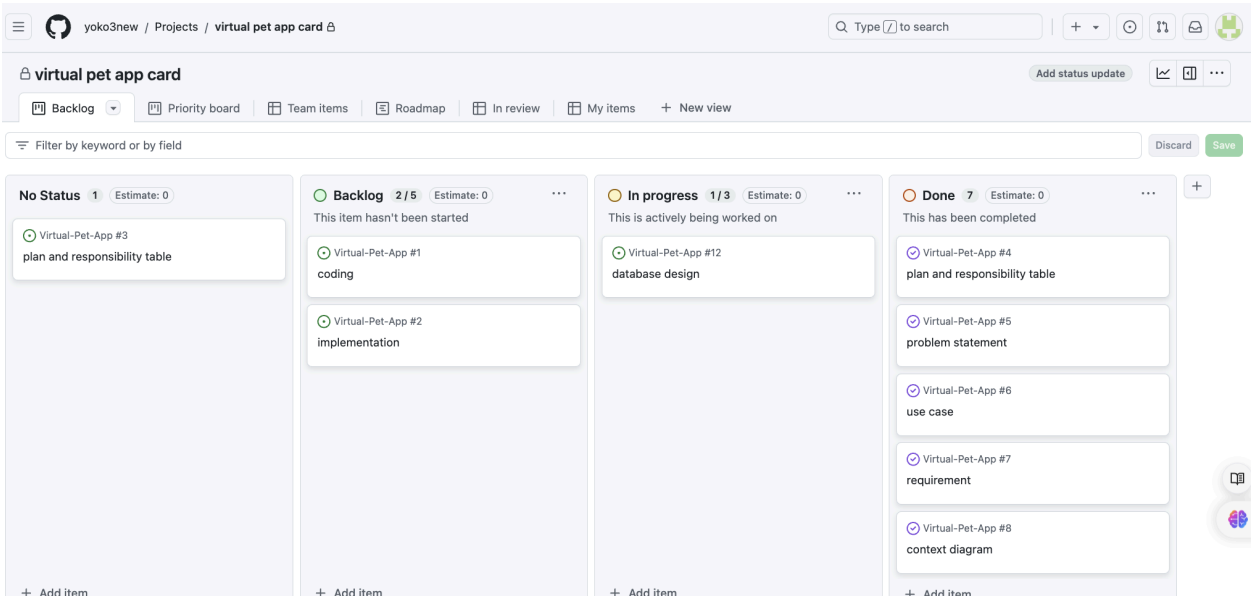


- Specify the type of database management system (MySQL, MS-SQL server, Oracle, etc.) you will use in your project

  MySQL

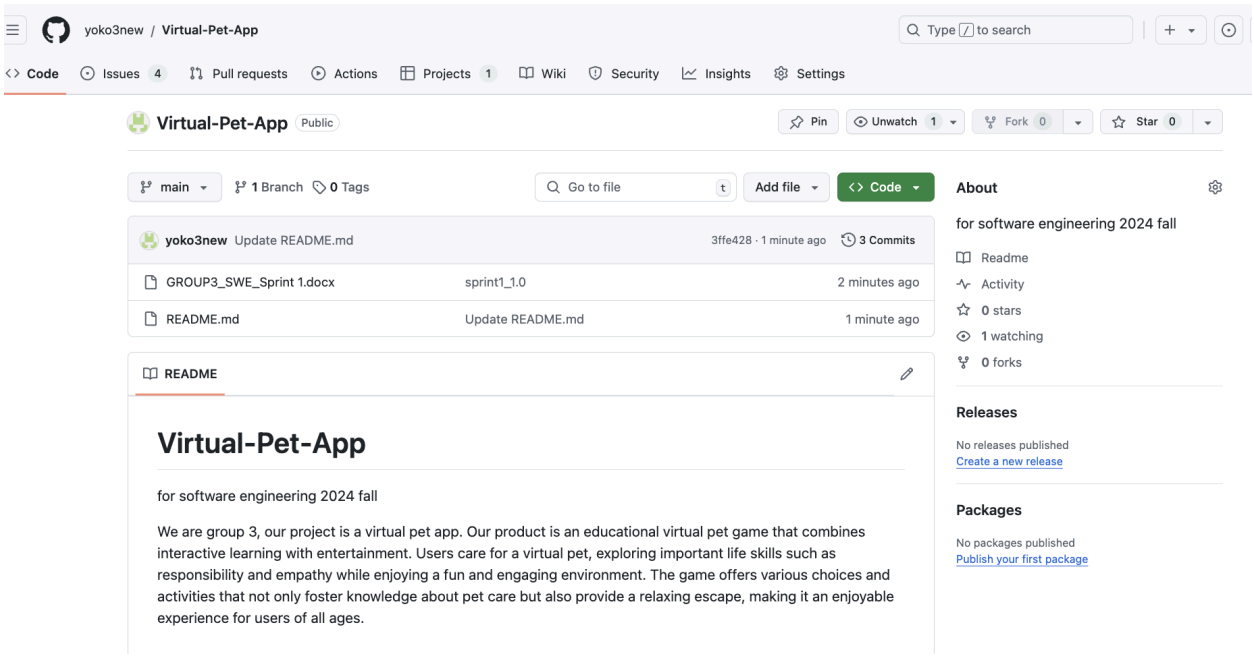
GitHub link and screenshots

- Using the project, you created for Sprint 1, identify new things to do; In Progress, and Done columns for Sprint 2 Under these columns, create your cards and have the assigned tasks and their status (in progress and done) written there as a list.



- Submit a screenshot of your project

  https://github.com/yoko3new/Virtual-Pet-App.git



REPORT

Report Sections:

1. Title page
2. Section 1: Planning and Scheduling Table
3. Section 2: Problem Statement
4. Section 3: Context Diagram
5. Section 4: Activity Diagram(s)
6. Section 5: Use Case, Requirement and Use Case Diagrams
    - Section 5.1: Use Cases
    - Section 5.2: Requirements
    - Section 5.3: Use case diagrams
7. Section 6: Database tables
8. GitHub link and screenshot

Report Format

- The first page will have the project Title, group number, members' names (underline the coordinator's name), semester, and year.
- Font size 12, Font type is Times New Roman, single space between lines.
- All paragraphs must be Text Justified.
- Pages must be numbered
- Diagrams and tables must be centered.

Report Submission

- The file should be named YourName_SprintNumber_GroupNumber.pdf
- All the team members must submit sprints in icollege.
- You (the team coordinator) will also print out a copy of the report and submit it before the class.