Cupet Phase 0 Progress Report

Group Members (Group 18):

Andrew Qiu
Daniel Baek
Fangyi Li
Harry Xu
Katherine Jelich
Kenneth Tran

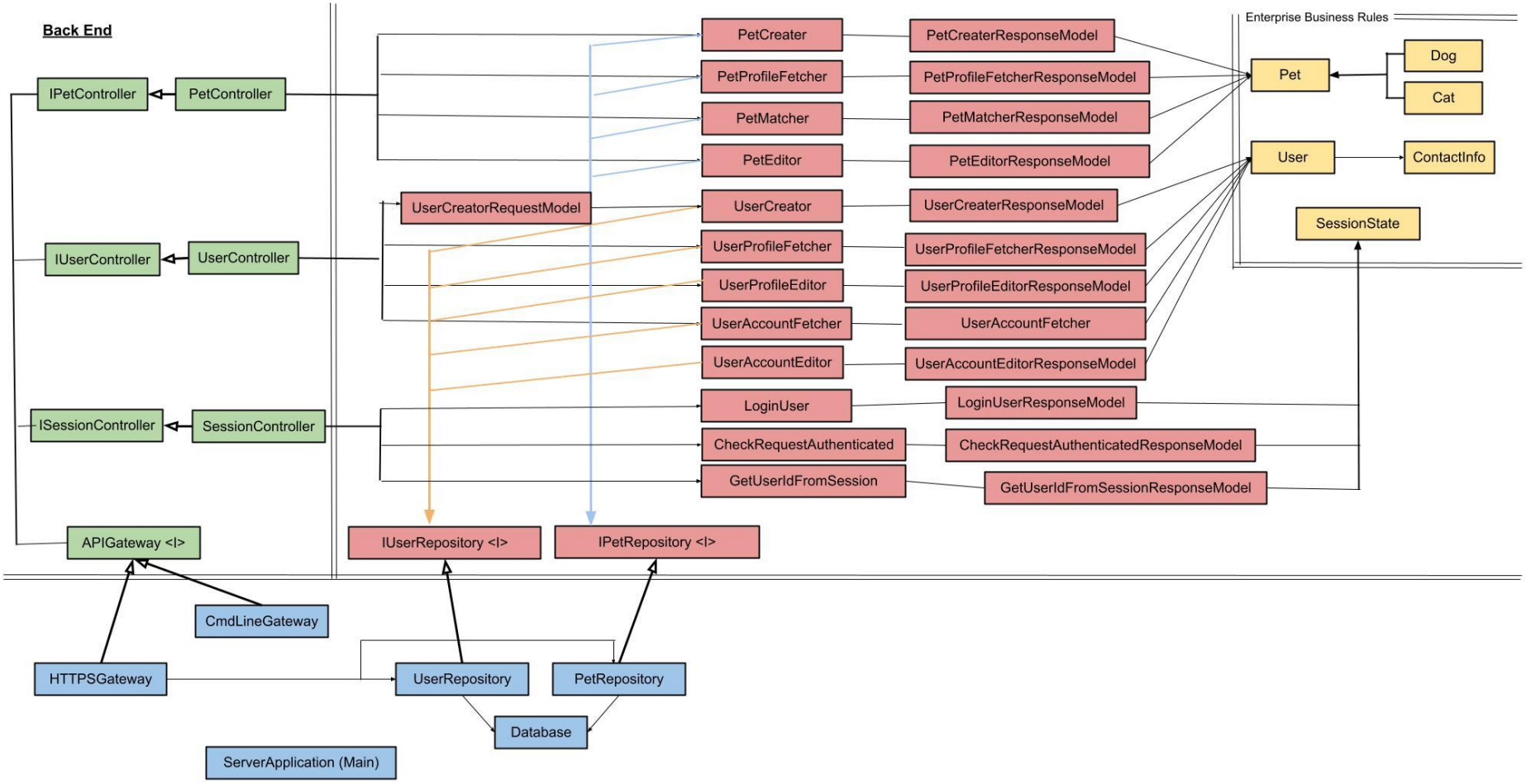
Summary of specification:

Cupet is an Android app with two parts: a front-end and a back-end. The front-end is where a user interacts with the app. The back-end is responsible for storing, processing, and relaying data from and to the front-end. Users of the app can register and log in to the app using their email and password. To register, a user needs to provide details, including their full name, email address, and home address. Each user has their own user profile.

Each user can have multiple pets, which each have their own pet profile. For each of their pets, the app displays to the user a list of other pets that potential matches for that pet. The potential matches are displayed based on location, as well as the preferences that the user has selected (ex., types of animals they want their pet to be matched with). Users are able to select which pets they are interested in matching with from this list.

If two users have selected each other's pet, they have matched with each other, and their pets are added to each other's match list. The two users are then able to view each other's contact information on each other's profiles.

Summary of CRC model:



Important CRC cards:

- APIGateway<I>: Defines all the methods that the endpoints should implement
- HTTPSGateway: Implements APIGateway. Connects endpoints to HTTP requests
- CmdLineGateway: Implements APIGateway. Connects endpoints to command line input
- IUserRepository<I>: Defines all the methods that the UserRepository driver class should implement
- IUserController<I>: Defines all the methods that call the uses cases that manipulate user data

Summary of scenario-walkthrough:

Scenario: Create a new User (Signup)

1. User launches front end application
2. User performs signup action
3. Input data is sent as an HTTP request to the backend API endpoint (HTTPSGateway)
4. In HTTPSGateway, a RestController which implements the endpoints defined by the interface APIGateway, the HTTP request is processed and sent to the UserController
5. UserController, which is responsible for managing all the use cases, calls the relevant use case
6. The use case, which has an implementation of IUserRepository injected in its constructor, executes the action and pushes to the repository, then returns a UserCreaterResponseModel object back to UserController
7. UserController takes the UserCreatorResponseModel, formats it into a JSON String and returns it back to HTTPSGateway
8. HTTPSGateway returns this JSON string as a response to the initial HTTP request
9. Front end application receives this JSON string response and performs any necessary actions (i.e. update UI)

Summary of skeleton program:

The skeleton program consists of the backend application. It runs on Spring Boot, using Spring JPA to connect to a remote MySql database. It establishes endpoints for HTTP requests with which users can interact with the server (e.g. fetching a user, creating a new user), as well as

terminal commands that allow you to perform the same actions, but directly from the command line.

Open questions:

- How to implement the front end
    - How will we design UI
- How are we going to implement longitude and latitude to calculate the distance between users/pets
- Can we utilize two repositories (one for frontend and one for backend)

What has gone well

- Clean implementation of clean architecture
    - We spent a lot of time ensuring that our design conformed to the clean architecture principles, and this design has simplified the process of expanding upon the program. Clean architecture has worked very well for the purpose of building a larger program with several contributors.
- CRC model diagram
    - The CRC diagram as well as the CRC cards helped us to really solidify and understand our design and communicate that to each of our group members.
- Looking at the code, we are able to understand how everything is structured
    - Easier to find certain methods, classes and layers of clean architecture
    - In our design, we very much had a focus on adhering to the principles of clean architecture that we have learned so far. Now at the stage where we have started implementing the code, by following our design we have found the program structure to be very understandable. It is very clear how the different parts interact with each other, and this is very helpful for us as we continue to expand the program.

Summary of group member work distribution:

Kenneth
Katherine
Fangyi
Harry
Daniel
Andrew

1. Write entities
    - User
    - Pet
    - ContactInfo
2. Write interfaces in use cases layer
    - Input port for UserCreator (UserCreatorRequestModel)
    - Output port for UserCreator (UserCreatorResponseModel)
    - IUserRepository
3. Write interfaces in controller layer
    - IUserController
    - APIGateway

- Write implementations in Use Cases layer (in any order after 1, 2, 3 are done)
    - UserCreator
- Write implementations in Back end layer (in any order after 1, 2, 3 are done)
    - UserController
- Write implementations in Details layer (in any order after 1, 2, 3 are done)
    - CmdLineGateway
    - UserRepository
    - CmdRunner

Next Steps

- Start implementing the front end (Android App, UI)
- Determine and start learning about which frameworks we might need
- Continue implementing backend features:
    - Use cases (e.g. MatchPets, CreatePetProfile)
    - Controllers (e.g. PetController, MatchController)
    - Database repositories (e.g. PetRepository)
- Refactoring old code

The current plans for how the work will be distributed is as follows: Andrew will work on implementing and integrating the backend features. Kenneth plans to continue to work on building the Database repositories. Fangyi plans to continue to work on implementing the backend features such as the use cases. Daniel will work on Backend features including the controller classes. Harry and Katherine will start working on implementing the front end, such as the Android App and the UI. All members are working on learning about the different frameworks that might be needed, and will collaborate on refactoring the code that has already been written. As the tasks become more clear during the implementation of the code, the group may redistribute based on what is appropriate.