README

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Overview:

- WePC Veterinary Management System is a comprehensive Java-based application designed to manage various aspects of a veterinary clinic. This system includes separate interfaces for pet owners, veterinarians, and administrative employees, each with tailored functionalities. GUI and Command-Line Interface applications are available and which offer the same functionalities.

GUI components

- WePCGUI: The main entry point of the application, handling user sign-in and sign-up.
- PetOwnerGUI: Interface for pet owners to view pet information, appointments, and view and pay invoices.
- VetGUI: Interface for veterinarians to view appointments, manage it with adding, deleting treatments, and medications.
- EmpGUI: Interface for administrative employees to manage appointments and access detailed appointment information.

Prerequisites

- Java Runtime Environment, MySQL database server and with the we_pc dump file imported. JDBC driver for MySQL, you can find the jar file in the lib folder.

STEP 0: Preparation

- Create the MySQL Database for this project on your computer if you don't have it yet.
- Open the Dump file and run the code for create tables, insert data and create procedures and functions.
- Open the Java project and connect your IDE with the 'mysql-connector-j-8.2.0.jar' as dependency.
- How to connect your IntelliJ IDE with the sql java connector:
    a. Open IntelliJ IDEA and load your project.
    b. Go to the "File" menu and select "Project Structure."
    c. In the "Project Structure" dialog, select "Libraries" under the "Project Settings" section.
    d. Click the "+" button to add a new library.
    e. Select "Java" from the dropdown menu.
    f. Navigate to the location where you downloaded the JDBC driver and select the JDBC driver JAR file.
    g. Click "OK" to add the JAR file to your project.

STEP 1: Connect to your MySQL Database and start the application
- Open the java program and Run the Main.java
- If CLI is preferred, you may also run we_pc.java to start the CLI application. CLI runs we_pc.java
- The Java GUI will show up, type in your database username and password to connect with your DB, if wrong, the project will automatically stop.

STEP 2: Signup as a Pet Owner User
- Although there is already some pet owner data inside the DB, you can sign up for a new pet owner user. You can sign up a new user by clicking the Sign up button, at this point, you can only sign up as a pet owner user.
- If your sign up information is not correct, the error will show up, you need to re-sign up.
- When you sign up successfully by clicking the sign up button, the username for a pet owner will automatically add 'CUS' , so when a pet owner login, he needs to add 'CUS' in front of his username. For example, he signs up 'user1' as his username, when logging in, he should type 'CUSuser1' as his log in username.

STEP 3: Log in
- If the username starts with 'CUS', it means the user is a pet owner. The it will turn to the pet owner user page.
- If the username starts with a number, then the user is an employee, the start number following with 'emp' represents the clinic that the employee belongs to. For example, when the username of an employee is '01emp00008', then this employee belongs to the clinic with id 1.
- If the username is an employee username, then it will check whether it is a normal employee or a vet. When it checks that the user is a vet, then it will turn to the vet page, if the employee is not a vet, then it will turn to the employ page.

Pet Owner Page:
- **Sample owner credential to login:**
  Username: CUSuser1
  Password: password123

  Username: CUSuser3
  Password: securepass1
- **Pet owner will have 4 choices:**
1. **View Pet Information Button (display_pet_info procedure):** will show all the pets you have and their information, which includes pet id, name, breed, height, weight and status.

2. **View Appointment Information Button (display_appointments_for_owner):** it will display all the appointment you have, normal employee of the clinic can make new appointment for the pet owner, and for each appointment, you have 3 choices:
   a. **View invoice (display_invoices_for_appointment procedure):** you can view the invoice information, which includes appointment ID, time, Description, patient ID, pet name, clinic id, show up status, vet id, vet name and room id. You can see the name of the treatment/ medication, the description, price for it.
   b. **View the treatments (display_treatments_and_medications_for_appointment procedure):** treatments and medications will display in this section.
   c. **Pay for the invoice (update_payment_received):** you can type in the amount you will pay for the invoice, then the invoice's received amount and date will change. If the pay amount is bigger than the total you need to pay, then the received amount will equal the total amount.
3. **Reset your password Button (update_owner_password procedure):** the user can reset his password.
4. **Sign out Button:** the program will end.

Admin Employee Page
- **Log In:**
  Given the employee table, there are two employee types (emp_type field), the administrative employee is authorized to specific procedures. Here two examples of employee id and password are provided for log-in.

  Username: 05emp00014
  Password: coolpet

  Username: 01emp00011
  Password: jaych08
  The Employee class contains several methods that can be used by only an administrative staff in terms of making a new appointment, deleting an appointment, displaying all the appointments in the clinic and displaying the detailed information. On SQL level, the procedures and functions created for administrative staff have staff username (unique) as the input parameter so that all the reads and modifications are based on data of the clinic where the staff works.

1. **Make an appointment:** the staff should first ensure the schedule is not full for the datetime provided by the pet owner. A function (is_book_full) is created to check if the number of vets that work in the clinic are not all booked on the specific time, which indicates the appointment is available. Another function (veterinarian_match) returns one

of the available vets to the appointment. It is worth noticing that after a tuple is inserted into the appointment table, the show-up field value is 0 and the room field value is null. The state of both fields will only change when the pet shows up as scheduled. The procedure (make_appointment) signals error when making duplicate appointments or the pet id is invalid.

2. **Cancel an appointment:** the procedure (cancel_appointment) finds the appointment by the given time and pet id. Given the appointment time, clinic id and pet id form the alternative key in the appointment table, the target appointment will be found if it already exists. Also, the application is designed in a way that all appointments associated with expenditure should never be deleted through this procedure. Thus, the procedure signals error when an appointment is not found or when an appointment is associated with treatment expenditure.

3. **Display all the appointments:** the procedure (display_appointment_for_employee) displays all the basic information for the staff by joining tables on references. It may signal error when the staff can't be traced to the clinic id, which is possible in real life when an employee loses authorization to the database in the clinic.

4. **Display appointment for details:** the procedure (display_appointment_detail) provides all information about one appointment for the employee. Given some appointments are not associated with invoices since the pet didn't show up, a left outer join with the invoice table is required to implement the procedure. The procedure signals error when the employee is trying to read an appointment that doesn't belong to the clinic or when employee id is invalid.

5. **Show-up Button:** when a new appointment is created, the show_up field is valued at 0 for the appointment as well as the roomID. This is the initial state of a new appointment. If the pet shows up as scheduled, the admin staff needs to click the show-up button so that an invoice is created for the pet, a room is assigned to the pet with a room id and the show_up value gets updated into 1.

On Java level, the application handles errors with wrong inputs during interaction with the user by the try-catch technique overall.

Vet Page:
- **Sample vet credential to login:**
  Username: 05emp00010
  Password: dogdd34

Username: 02emp00003
Password: newmoon95

Vets are authorized to read and write treatments and medications on their appointments and release rooms when they complete their appointment.

1. **Appointment Management:** View and select veterinary appointments.
   Vets will need to first select an appointment to proceed to the following options as the vet manages the treatments and medications record for the appointments. Click on Select appointment and all appointments that are assigned to the vet with the credential will be displayed, click on one, that appointment will be selected. The header of the window will show the selected appointment id.
2. **Treatment Handling:** Add, view, and delete treatments for selected appointments.
   Vet have the options to view available treatment services that have not been added yet for the appointment/add treatment with an actual charge to the selected appointment. Click on add a treatment, application will ask for valid treatment service id and actual charge for the treatment. If the inputs are valid, the treatment id, the charge will also be added to the total amount on the appointment invoice on invoice table.
   Vet also views added treatments of the selected appointment/delete treatments added if the pet owner refused, the charge on the treatment will be deducted on the total amount on the appointment invoice.
3. **Medication Management:** Add medications and view available medications for pets.
   Vet have options to view available medications that have not been prescribed for this appointment/prescribe a medication with a quantity and a time interval in days. The total charge of the medication will be added on the invoice.
4. **Complete an appointment:** When the pet shows up, an available room will be assigned to the appointment and when the vet completes the appointment, the room will be released and the state of use would be available. If the room has already been released, the application will show the appointment has been completed or it's a no show appointment.