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Software Design with Artificial Intelligence for Cloud Computing

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code files  
Project #2

Server-Side Web Development

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# Dog.java class

**public** **class** Dog {

**private** String age, name, breed, colour, activity, maintenance, owner\_email, owner\_name, owner\_password;

**private** **int** id;

**public** Dog(String name, String age, String breed, String colour, String activity, String maintenance, String owner\_name, String email, String password) {

**this**.id = 0;

**this**.name = name;

**this**.age = age;

**this**.breed = breed;

**this**.colour = colour;

**this**.activity = activity;

**this**.maintenance = maintenance;

**this**.owner\_name = owner\_name;

**this**.owner\_email = email;

**this**.owner\_password = password;

}

**public** Dog() {

}

**public** Dog(String age, String breed, String colour, String activity, String maintenance) {

**this**.age = age;

**this**.breed = breed;

**this**.colour = colour;

**this**.activity = activity;

**this**.maintenance = maintenance;

}

**public** String getName() {

**return** name;

}

**public** **void** setName(String name) {

**this**.name = name;

}

**public** String getBreed() {

**return** breed;

}

**public** **void** setBreed(String breed) {

**this**.breed = breed;

}

**public** String getColour() {

**return** colour;

}

**public** **void** setColour(String colour) {

**this**.colour = colour;

}

**public** String getMaintenance() {

**return** maintenance;

}

**public** **void** setMaintenance(String maintenance) {

**this**.maintenance = maintenance;

}

**public** String getAge() {

**return** age;

}

**public** **void** setAge(String age) {

**this**.age = age;

}

**public** String getActivity() {

**return** activity;

}

**public** **void** setActivity(String activity) {

**this**.activity = activity;

}

**public** **int** getID() {

**return** id;

}

**public** **void** setID(**int** id) {

**this**.id = id;

}

**public** String getOwner\_email() {

**return** owner\_email;

}

**public** **void** setOwner\_email(String owner\_email) {

**this**.owner\_email = owner\_email;

}

**public** String getOwner\_name() {

**return** owner\_name;

}

**public** **void** setOwner\_name(String owner\_name) {

**this**.owner\_name = owner\_name;

}

**public** String getOwner\_password() {

**return** owner\_password;

}

**public** **void** setOwner\_password(String owner\_password) {

**this**.owner\_password = owner\_password;

}

**public** String printDetails() {

**return**

"\nDOG DETAILS:\nID: " + **this**.getID() + "\nName: " + **this**.getName() + "\nAge: " + **this**.age + "\nBreed: " + **this**.getBreed()

+ "\nColor: " + **this**.getColour() + "\nActivity: " + **this**.getActivity()

+ "\nMaintenance: " + **this**.getMaintenance()+ "\nOwner Name: " + **this**.getOwner\_name()

+ "\nEmail: " + **this**.getOwner\_email() + "\nPassword: " + **this**.getOwner\_password() + "\n";

}

}

# DogDAO.java ENUM

**import** java.sql.\*;

**import** java.util.ArrayList;

**import** java.util.List;

**public** **enum** DogDAO {

    instance;

    List<Dog> dogsList = **new** ArrayList<Dog>();

**static** Connection getConnection() **throws** SQLException, ClassNotFoundException{

        String DRIVER\_URL = "jdbc:hsqldb:hsql://localhost/oneDB";

        String USERNAME = "SA";

        String PASSWORD = "";

**try** {

**Class**.forName("org.hsqldb.jdbc.JDBCDriver");

        } **catch** (ClassNotFoundException e) {

**throw** **new** ClassNotFoundException("HSQLDB JDBC driver not found.", e);

        }

        Connection connection = DriverManager.getConnection(DRIVER\_URL, USERNAME, PASSWORD);

**return** connection;

    }

**public** **static** **boolean** checkLogin(String email, String password) **throws** Exception {

        Connection connection = **null**;

        PreparedStatement preparedStatement = **null**;

        ResultSet resultSet = **null**;

**try** {

            connection = getConnection();

            String query = "SELECT \* FROM DOGS WHERE owner\_email = ? AND owner\_password = ?";

            preparedStatement = connection.prepareStatement(query);

            preparedStatement.setString(1, email);

            preparedStatement.setString(2, password);

            resultSet = preparedStatement.executeQuery();

**if** (resultSet.next() && resultSet.getInt(1) > 0) {

                System.out.println("checkLogin(): User " + email + " exists.**\n**");

**return** **true**;

            } **else** {

                System.out.println("checkLogin(): User " + email + " either doesn't exist or incorrect credentials were provided.");

**return** **false**;

            }

        } **catch** (SQLException e) {

**throw** **new** Exception("Database connection error: " + e.getMessage());

        } **finally** {

**if** (resultSet != **null**) {

                resultSet.close();

            }

**if** (preparedStatement != **null**) {

                preparedStatement.close();

            }

**if** (connection != **null**) {

                connection.close();

            }

        }

    }

***/\*\****

***\* CRUD for Dogs***

***\* @return***

***\* @return***

***\*/***

**public** **void** insertDog(Dog newDog) **throws** Exception {

*// Get connection*

     Connection connection = getConnection();

*// Create prepared statement with placeholders for the parameters*

        PreparedStatement query = connection.prepareStatement("INSERT INTO **\"**PUBLIC**\"**.**\"**DOGS**\"** (name, age, breed, colour, activity, maintenance, owner\_email, owner\_name, owner\_password) VALUES (?, ?, ?, ?, ?, ?, ?, ?, ?)");

*// Update placeholders with the attributes*

     query.setString(1, newDog.getName());

     query.setString(2, newDog.getAge());

     query.setString(3, newDog.getBreed());

     query.setString(4, newDog.getColour());

     query.setString(5, newDog.getActivity());

    query.setString(6, newDog.getMaintenance());

     query.setString(7, newDog.getOwner\_email());

     query.setString(8, newDog.getOwner\_name());

     query.setString(9, newDog.getOwner\_password());

*// Execute the statement*

    query.executeUpdate();

    System.out.println("insertDog(): Dog " + newDog.getName() + " was successfully created.");

 }

**public** **void** deleteDog(**int** dogID) **throws** Exception{

     Connection connection = getConnection();

     PreparedStatement query = connection.prepareStatement("DELETE FROM **\"**PUBLIC**\"**.**\"**DOGS**\"** WHERE id = ?");

     query.setInt(1, dogID);

     query.executeUpdate();

     System.out.println("deleteDog(): Dog " + dogID + " was successfully deleted.**\n**");

 }

**public** Dog getDogByName(String email, String dogName) **throws** Exception {

     Connection connection = getConnection();

     String selectQuery = "SELECT \* FROM DOGS WHERE owner\_email = ? AND name = ?";

     PreparedStatement statement = connection.prepareStatement(selectQuery);

    statement.setString(1, email);

     statement.setString(2, dogName);

     ResultSet resultSet = statement.executeQuery();

     Dog dog = **new** Dog();

**while** (resultSet.next()) {

**int** id = resultSet.getInt("id");

         String name = resultSet.getString("name");

        String age = resultSet.getString("age");

        String breed = resultSet.getString("breed");

        String colour = resultSet.getString("colour");

        String activity = resultSet.getString("activity");

         String maintenance = resultSet.getString("maintenance");

         String owner\_email = resultSet.getString("owner\_email");

         String owner\_name = resultSet.getString("owner\_name");

         String owner\_password = resultSet.getString("owner\_password");

         System.out.println("getDog(id):**\n**Id: " +id+"**\t**Name: " + name + "**\t**Age: "+age

                + "**\n**Breed: " + breed + "**\t**Color: " + colour

                + "**\n**Activity: " + activity + "**\t**Maintenance: " + maintenance

                + "**\n**Owner Details: **\n**Name: " + owner\_name + "**\t**Email: " + owner\_email

                 + "**\t**Password: " + owner\_password + "**\n**");

         dog.setID(id);

         dog.setName(name);

         dog.setAge(age);

         dog.setBreed(breed);

        dog.setColour(colour);

        dog.setActivity(activity);

        dog.setMaintenance(maintenance);

        dog.setOwner\_email(owner\_email);

        dog.setOwner\_name(owner\_name);

        dog.setOwner\_password(owner\_password);

        }

**return** dog;

}

**public** **void** updateDog(Dog dog) **throws** Exception {

     Connection connection = **null**;

**try** {

        connection = getConnection();

        String updateQuery = "UPDATE dogs SET age = ?, breed = ?, colour = ?, activity = ?, maintenance = ?, owner\_email = ?, owner\_name = ?, owner\_password = ? WHERE name = ?";

         PreparedStatement statement = connection.prepareStatement(updateQuery);

        statement.setString(1, dog.getAge());

        statement.setString(2, dog.getBreed());

        statement.setString(3, dog.getColour());

        statement.setString(4, dog.getActivity());

         statement.setString(5, dog.getMaintenance());

        statement.setString(6, dog.getOwner\_email());

         statement.setString(7, dog.getOwner\_name());

        statement.setString(8, dog.getOwner\_password());

        statement.setString(9, dog.getName());

**int** rowsAffected = statement.executeUpdate();

**if** (rowsAffected > 0) {

            System.out.println("updateDog(): Dog " + dog.getName() + " was successfully updated.**\n**");

        } **else** {

             System.out.println("updateDog(): Dog " + dog.getName() + " not found.**\n**");

        }

    } **catch** (Exception e) {

         System.out.println("updateDog(): Issue while updating dog.**\n**");

         }

  }

List<Dog> dogsList() **throws** ClassNotFoundException, SQLException {

     Connection connection = **null**;

     List<Dog> dogsList = **new** ArrayList<Dog>();

**try** {

        connection = getConnection();

        Statement statement = connection.createStatement();

         ResultSet resultSet = statement.executeQuery("SELECT \* from DOGS");

**while** (resultSet.next()) {

             Dog dog = **new** Dog();

             dog.setID((**int**) resultSet.getLong("id"));

            dog.setName(resultSet.getString("name"));

            dog.setAge(resultSet.getString("age"));

             dog.setBreed(resultSet.getString("breed"));

            dog.setColour(resultSet.getString("colour"));

            dog.setActivity(resultSet.getString("activity"));

            dog.setMaintenance(resultSet.getString("maintenance"));

            dog.setOwner\_email(resultSet.getString("owner\_email"));

            dog.setOwner\_name(resultSet.getString("owner\_name"));

            dog.setOwner\_password(resultSet.getString("owner\_password"));

**boolean** dogExists = **false**;

**for** (Dog existingDog : dogsList) {

**if**(checkDog(existingDog, dog)) {

                    dogExists = **true**;

**break**;

                }

             }

**if** (!dogExists) {

                dogsList.add(dog);

            }

        }

     } **finally** {

**if** (connection != **null**) {

            connection.close();

        }

    }

**return** dogsList;

  }

List<Dog> getDogByEmail(String email) **throws** SQLException, ClassNotFoundException {

     Connection connection = getConnection();

     List<Dog> dogsList = **new** ArrayList<Dog>();

    String selectQuery = "SELECT \* FROM dogs WHERE owner\_email = ?";

    PreparedStatement statement = connection.prepareStatement(selectQuery);

    statement.setString(1, email);

    ResultSet resultSet = statement.executeQuery();

**while** (resultSet.next()) {

        Dog dog = **new** Dog();

        dog.setID(resultSet.getInt("id"));

        dog.setName(resultSet.getString("name"));

        dog.setAge(resultSet.getString("age"));

        dog.setBreed(resultSet.getString("breed"));

        dog.setColour(resultSet.getString("colour"));

        dog.setActivity(resultSet.getString("activity"));

        dog.setMaintenance(resultSet.getString("maintenance"));

        dog.setOwner\_name(resultSet.getString("owner\_name"));

         dog.setOwner\_email(resultSet.getString("owner\_email"));

        dog.setOwner\_password(resultSet.getString("owner\_password"));

**boolean** dogExists = **false**;

**for** (Dog existingDog : dogsList) {

**if** (checkDog(existingDog, dog)) {

                 dogExists = **true**;

                 System.out.println("Dog already exists.");

**break**;

             }

        }

**if** (!dogExists) {

             dogsList.add(dog);

             System.out.println("getDogByEmail(): **\n**" + dog.printDetails());

         }

    }

**return** dogsList;

}

**private** **boolean** checkDog(Dog dog1, Dog dog2) {

**return** dog1.getName().equals(dog2.getName()) &&

            dog1.getID() == (dog2.getID());

}

**int** ownersCount() **throws** ClassNotFoundException, SQLException {

    Connection connection = **null**;

**int** count = 0;

**try** {

        connection = getConnection();

*// Get amount of owners*

        String selectQuery = "SELECT COUNT(DISTINCT owner\_name) AS owner\_count FROM DOGS";

        PreparedStatement statement = connection.prepareStatement(selectQuery);

         ResultSet resultSet = statement.executeQuery();

**if** (resultSet.next()) {

             count = resultSet.getInt("owner\_count");

        }

    } **finally** {

**if** (connection != **null**) {

            connection.close();

         }

    }

**return** count;

    }

**int** dogsCount() **throws** ClassNotFoundException, SQLException {

    Connection connection = **null**;

**int** count = 0;

**try** {

         connection = getConnection();

*// Get amount of owners*

         String selectQuery = "SELECT COUNT(DISTINCT name) AS dogs\_count FROM DOGS";

         PreparedStatement statement = connection.prepareStatement(selectQuery);

         ResultSet resultSet = statement.executeQuery();

**if** (resultSet.next()) {

            count = resultSet.getInt("dogs\_count");

         }

    } **finally** {

**if** (connection != **null**) {

            connection.close();

         }

     }

**return** count;

}

}

# LoginServlet.java (servlet)

**import** java.io.IOException;

**import** java.util.List;

**import** javax.servlet.ServletException;

**import** javax.servlet.annotation.WebServlet;

**import** javax.servlet.http.\*;

***/\*\****

***\* Servlet implementation class LoginServlet***

***\*/***

@WebServlet("/LoginServlet")

**public** **class** LoginServlet **extends** HttpServlet {

**private** **static** **final** **long** serialVersionUID = 1L;

***/\*\****

***\* @see HttpServlet#HttpServlet()***

***\*/***

**public** LoginServlet() {

**super**();

 }

***/\*\****

***\* @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)***

***\*/***

**protected** **void** doPost(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

*// Get parameters from the form*

     String owner\_email = request.getParameter("owner\_email");

     String owner\_password = request.getParameter("password");

**boolean** loginSuccessful = **false**;

**try** {

      loginSuccessful = DogDAO.checkLogin(owner\_email, owner\_password);

**if** (loginSuccessful) {

*// Invalidate existing session, if any exist*

            HttpSession existingSession = request.getSession(**false**);

**if** (existingSession != **null**) {

            System.out.println("LoginServlet: Existing session deleted. ID: " + existingSession.getId());

            existingSession.invalidate();

           }

           Cookie loginCookie = **new** Cookie("user", owner\_email);

*// Setting cookie to expiry after 3min*

           loginCookie.setMaxAge(3\*60);

           System.out.println("LoginServlet Cookie: " + loginCookie);

           HttpSession session = request.getSession();

           System.out.println("LoginServlet: New session " + session.getId());

           List<Dog> dogDetails = DogDAO.instance.getDogByEmail(owner\_email);

**if** (dogDetails != **null** && !dogDetails.isEmpty()) {

Dog userDog = dogDetails.get(0);

            String owner\_name = userDog.getOwner\_name();

            session.setAttribute("owner\_email", owner\_email);

            session.setAttribute("owner\_password", owner\_password);

            session.setAttribute("owner\_name", owner\_name);

            session.setAttribute("dogDetails", dogDetails);

              System.out.println("LoginServlet Session Details:/n" + owner\_email + " " + owner\_password + " " + owner\_name + " n" + dogDetails );

             }

             System.out.println("LoginServlet: Login successful.n");

             response.addCookie(loginCookie);

                response.sendRedirect("login2.jsp");

            } **else** {

             System.out.println("LoginServlet: Login unsuccessful.n");

                response.sendRedirect("login.jsp");

            }

        } **catch** (Exception e) {

            e.printStackTrace();

            System.out.println("LoginServlet: Exception during login for " + owner\_email);

        }

    }

}

# IndexServlet.java (servlet)

**import** java.io.IOException;

**import** javax.servlet.ServletException;

**import** javax.servlet.annotation.WebServlet;

**import** javax.servlet.http.HttpServlet;

**import** javax.servlet.http.HttpServletRequest;

**import** javax.servlet.http.HttpServletResponse;

**import** javax.servlet.http.HttpSession;

***/\*\****

***\* Servlet implementation class DogsController***

***\*/***

@WebServlet("/IndexServlet")

**public** **class** IndexServlet **extends** HttpServlet {

**private** **static** **final** **long** serialVersionUID = 1L;

**protected** **void** doGet(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

        request.getRequestDispatcher("index.jsp").forward(request, response);

    }

**protected** **void** doPost(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

*// Use existing session or return null if no session exists*

        HttpSession session = request.getSession(**false**);

        System.out.println("IndexServlet Session: " + session.getId() + "**\n**" + session.getAttributeNames());

        request.getRequestDispatcher("index.jsp").forward(request, response);

    }

}

# addServlet.java (servlet)

**import** java.io.IOException;

**import** java.util.List;

**import** javax.servlet.ServletException;

**import** javax.servlet.annotation.WebServlet;

**import** javax.servlet.http.HttpServlet;

**import** javax.servlet.http.HttpServletRequest;

**import** javax.servlet.http.HttpServletResponse;

**import** javax.servlet.http.HttpSession;

***/\*\****

***\* Servlet implementation class addServlet***

***\*/***

@WebServlet("/addServlet")

**public** **class** addServlet **extends** HttpServlet {

**private** **static** **final** **long** serialVersionUID = 1L;

***/\*\****

***\* @see HttpServlet#HttpServlet()***

***\*/***

**public** addServlet() {

**super**();

    }

***/\*\****

***\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse***

***\*      response)***

***\*/***

**protected** **void** doPost(HttpServletRequest request, HttpServletResponse response)

**throws** ServletException, **IOException** {

*// Retrieve dogs and session attributes as needed.*

        HttpSession session = request.getSession(**false**);

**if** (session != **null**) {

*// Get the user's details from the session*

**String** owner\_email = (**String**) session.getAttribute("owner\_email");

**String** owner\_name = (**String**) session.getAttribute("owner\_name");

**String** owner\_password = (**String**) session.getAttribute("owner\_password");

*// Get parameters from the form*

**String** name = request.getParameter("name");

**String** age = request.getParameter("age");

**String** breed = request.getParameter("breed");

**String** colour = request.getParameter("colour");

**String** activity = request.getParameter("activity");

**String** maintenance = request.getParameter("maintenance");

**if** (name.isEmpty() || age.isEmpty() || breed.isEmpty() || colour.isEmpty() || activity.isEmpty() || maintenance.isEmpty()) {

**System**.out.println("All fields must be filled in!");

                request.getRequestDispatcher("add.jsp").forward(request, response);

**return**;

            }

*// Add dog to the database*

            Dog dog = **new** Dog(name, age, breed, colour, activity, maintenance, owner\_name, owner\_email, owner\_password);

**try** {

                DogDAO.instance.insertDog(dog);

*// Update the dog details in the session*

**List**<Dog> updatedDogDetails = DogDAO.instance.getDogByEmail(owner\_email);

                session.setAttribute("dogDetails", updatedDogDetails);

                response.sendRedirect("IndexServlet");

**System**.out.println("addServlet: Dog " + name + " successfully added.**\n**");

            } **catch** (**Exception** e) {

**System**.out.println("Couldn't register new dog.**\n**");

                e.printStackTrace();

            }

        } **else** {

**System**.out.println("No session found. You have to log in.**\n**");

            request.getRequestDispatcher("login.jsp").forward(request, response);

        }

    }

}

# AllDogsServlet.java (servlet)

**import** java.io.IOException;

**import** java.util.List;

**import** javax.servlet.ServletException;

**import** javax.servlet.annotation.WebServlet;

**import** javax.servlet.http.HttpServlet;

**import** javax.servlet.http.HttpServletRequest;

**import** javax.servlet.http.HttpServletResponse;

**import** javax.servlet.http.HttpSession;

***/\*\****

***\* Servlet implementation class AllDogsServlet***

***\*/***

@WebServlet("/AllDogsServlet")

**public** **class** AllDogsServlet **extends** HttpServlet {

**private** **static** **final** **long** serialVersionUID = 1L;

***/\*\****

***\* @see HttpServlet#HttpServlet()***

***\*/***

**public** AllDogsServlet() {

**super**();

    }

***/\*\****

***\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)***

***\*/***

**protected** **void** doPost(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

        HttpSession session = request.getSession(**false**);

*// Retrieve all dogs*

        List<Dog> allDogs;

**try** {

            allDogs = DogDAO.instance.dogsList();

*// Check if allDogs already exists in the session*

**if** (session.getAttribute("allDogs") == **null**) {

                session.setAttribute("allDogs", allDogs);

            }

            request.getRequestDispatcher("indexAllDogs.jsp").forward(request, response);

        } **catch** (Exception e) {

            e.printStackTrace();

        }

    }

}

# UpdateServlet.java (servlet)

**import** java.io.IOException;

**import** java.util.List;

**import** javax.servlet.ServletException;

**import** javax.servlet.annotation.WebServlet;

**import** javax.servlet.http.\*;

***/\*\****

***\* Servlet implementation class updateServlet***

***\*/***

@WebServlet("/UpdateServlet")

**public** **class** UpdateServlet **extends** HttpServlet {

**private** **static** **final** **long** serialVersionUID = 1L;

***/\*\****

***\* @see HttpServlet#HttpServlet()***

***\*/***

**public** UpdateServlet() {

**super**();

    }

***/\*\****

***\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)***

***\*/***

**protected** **void** doPost(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

        HttpSession session = request.getSession(**false**);

*// Retrieve details from the session*

        Dog dogToUpdate = (Dog) session.getAttribute("selectedDog");

*// Get parameters from the form*

        String name = dogToUpdate.getName();

        String age = request.getParameter("age");

        String breed = request.getParameter("breed");

        String colour = request.getParameter("colour");

        String activity = request.getParameter("activity");

        String maintenance = request.getParameter("maintenance");

        String owner\_name = request.getParameter("owner\_name");

        String owner\_email = request.getParameter("owner\_email");

        String owner\_password = request.getParameter("owner\_password");

**try** {

String ownerEmail = (String) session.getAttribute("owner\_email");

            Dog updatedDog = **new** Dog(name, age, breed, colour, activity, maintenance, owner\_name, owner\_email, owner\_password);

            DogDAO.instance.updateDog(updatedDog);

            List<Dog> updatedDogList = DogDAO.instance.getDogByEmail(ownerEmail);

**if** (updatedDogList != **null**) {

                session.setAttribute("dogDetails", updatedDogList);

            }

            session.removeAttribute("selectedDog");

            response.sendRedirect("IndexServlet");

        } **catch** (Exception e) {

            System.out.println("UpdateServlet: something went wrong");

        }

    }

}

# SelectedDog.java (servlet)

**import** java.io.IOException;

**import** java.util.List;

**import** javax.servlet.ServletException;

**import** javax.servlet.annotation.WebServlet;

**import** javax.servlet.http.HttpServlet;

**import** javax.servlet.http.HttpServletRequest;

**import** javax.servlet.http.HttpServletResponse;

**import** javax.servlet.http.HttpSession;

***/\*\****

***\* Servlet implementation class SelectedDog***

***\*/***

@WebServlet("/SelectedDog")

**public** **class** SelectedDog **extends** HttpServlet {

**private** **static** **final** **long** serialVersionUID = 1L;

***/\*\****

***\* @see HttpServlet#HttpServlet()***

***\*/***

**public** SelectedDog() {

**super**();

}

***/\*\****

***\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)***

***\*/***

**protected** **void** doPost(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

HttpSession session = request.getSession(**false**);

    String buttonClicked=request.getParameter("userChoice");

*// Get details from the session*

    String owner\_email = (String) session.getAttribute("owner\_email");

    String selectedDogName = request.getParameter("name");

    session.setAttribute("selectedDogName", selectedDogName);

**try** {

        Dog selectedDog = DogDAO.instance.getDogByName(owner\_email, selectedDogName);

**if** (buttonClicked.equalsIgnoreCase("update")){

            session.setAttribute("selectedDog", selectedDog);

            System.out.println("SelectedDog Servlet: " + selectedDogName + "**\n**");

            request.getRequestDispatcher("update.jsp").forward(request, response);

        }

**else** **if** (buttonClicked.equalsIgnoreCase("delete")) {

            DogDAO.instance.deleteDog(selectedDog.getID());

            List<Dog> updatedDogsList = DogDAO.instance.getDogByEmail(owner\_email);

            session.setAttribute("dogDetails", updatedDogsList);

            response.sendRedirect("delete.jsp");

        }

    } **catch** (Exception e) {

        System.out.println("SelectedDog Servlet: error while fetching dog.**\n**");

    }

}

}

# RegisterUser.java (servlet)

**import** java.io.IOException;

**import** javax.servlet.ServletException;

**import** javax.servlet.annotation.WebServlet;

**import** javax.servlet.http.\*;

**import** javax.servlet.http.HttpSession;

***/\*\****

***\* Servlet implementation class RegisterUser***

***\*/***

@WebServlet("/RegisterUser")

**public** **class** RegisterUser **extends** HttpServlet {

**private** **static** **final** **long** serialVersionUID = 1L;

***/\*\****

***\* @see HttpServlet#HttpServlet()***

***\*/***

**public** RegisterUser() {

**super**();

  }

***/\*\****

***\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)***

***\*/***

**protected** **void** doPost(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

**try** {

**int** owners\_count = DogDAO.instance.ownersCount();

**int** dogs\_count = DogDAO.instance.dogsCount();

          HttpSession session = request.getSession();

*// Set counts as attributes in request*

          session.setAttribute("owners\_count", owners\_count);

          session.setAttribute("dogs\_count", dogs\_count);

          System.out.println("Owners count: " + owners\_count + "**\n**Dogs count: " + dogs\_count);

          request.getRequestDispatcher("register.jsp").forward(request, response);

      } **catch** (Exception e) {

          System.out.println("Couldn't fetch owners and dogs count.");

          e.printStackTrace();

      }

  }

}

# LogoutServlet.java (servlet)

**import** java.io.IOException;

**import** javax.servlet.ServletException;

**import** javax.servlet.annotation.WebServlet;

**import** javax.servlet.http.\*;

***/\*\****

***\* Servlet implementation class LogoutServlet***

***\*/***

@WebServlet("/LogoutServlet")

**public** **class** LogoutServlet **extends** HttpServlet {

**private** **static** **final** **long** serialVersionUID = 1L;

***/\*\****

***\* @see HttpServlet#HttpServlet()***

***\*/***

**public** LogoutServlet() {

**super**();

}

***/\*\****

***\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)***

***\*/***

**protected** **void** doPost(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

HttpSession session = request.getSession(**false**);

**if** (session != **null**) {

System.out.println("Before logout session ID: " + session.getId());

           session.removeAttribute("owner\_email");

           session.removeAttribute("owner\_name");

          session.removeAttribute("owner\_password");

           session.removeAttribute("dogDetails");

           session.removeAttribute("allDogs");

           session.invalidate();

**try** {

*// Get the session ID should throw an exception*

               System.out.println("After logout session ID: " + session.getId());

           } **catch** (IllegalStateException e) {

*// Should go here because session was deleted????*

               System.out.println("Session has been invalidated.");

           }

           System.out.println("LogoutServlet: Log out successful.");

      } **else** {

          System.out.println("No session to close.");

      }

      System.out.println();

      Cookie loginCookie = **null**;

      Cookie[] cookies =request.getCookies();

**if**(cookies != **null**) {

**for** (Cookie cookie : cookies) {

**if**(cookie.getName().equals("user")) {

                   loginCookie = cookie;

**break**;

               }

          }

      }

**if** (loginCookie != **null**) {

          loginCookie.setMaxAge(0);

          response.addCookie(loginCookie);

      }

      response.sendRedirect("logout.jsp");

      }

# RegisterServlet.java (servlet)

**import** java.io.IOException;

**import** javax.servlet.ServletException;

**import** javax.servlet.annotation.WebServlet;

**import** javax.servlet.http.\*;

***/\*\****

***\* Servlet implementation class RegisterServlet***

***\*/***

@WebServlet("/RegisterServlet")

**public** **class** RegisterServlet **extends** HttpServlet {

**private** **static** **final** **long** serialVersionUID = 1L;

***/\*\****

***\* @see HttpServlet#HttpServlet()***

***\*/***

**public** RegisterServlet() {

**super**();

  }

***/\*\****

***\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)***

***\*/***

**protected** **void** doPost(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

*// Get parameters from the form*

      String name = request.getParameter("name");

      String age = request.getParameter("age");

      String breed = request.getParameter("breed");

      String colour = request.getParameter("colour");

      String activity = request.getParameter("activity");

      String maintenance = request.getParameter("maintenance");

      String owner\_name = request.getParameter("owner\_name");

      String owner\_email = request.getParameter("owner\_email");

      String owner\_password = request.getParameter("owner\_password");

**if** (name.isEmpty() || age.isEmpty() || breed.isEmpty() || colour.isEmpty() || activity.isEmpty() || maintenance.isEmpty()) {

          System.out.println("**\n**All fields must be filled in!**\n**");

          request.getRequestDispatcher("register.jsp").forward(request, response);

      } **else** {

          Dog dog = **new** Dog(name, age, breed, colour, activity, maintenance, owner\_name, owner\_email, owner\_password);

**try** {

*// Add dog to the database*

              DogDAO.instance.insertDog(dog);

              System.out.println("Dog " + name + " successfully registered.**\n**");

              request.getRequestDispatcher("login.jsp").forward(request, response);

          } **catch** (Exception e1) {

              System.out.println("Couldn't register new dog.");

              e1.printStackTrace();

          }

      }

  }

}

# login.jsp

<%@ taglib uri=*"http://java.sun.com/jsp/jstl/core"* prefix=*"c"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<meta name=*"viewport"* content=*"width=device-width, initial-scale=1"*>

<link rel=*"stylesheet"* href=*"https://www.w3schools.com/w3css/4/w3.css"*>

<!-- Fonts -->

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css?family=Allerta+Stencil"*>

<!-- CSS -->

<link rel=*"stylesheet"* type=*"text/css"* href=*"style.css"*>

<title>Natalia Palej A00279259</title>

<style>

*.background*{

background-image: *url("login.jpg")*;

background-repeat: *no-repeat*;

background-attachment: *fixed*;

background-size: *cover*;

}

</style>

</head>

<body class=*"background"*>

<h1 class=*"w3-allerta"*>Dogs Application</h1>

<div class=*"w3-half w3-card w3-margin w3-padding"*>

<h3>Log In:</h3>

<form method = *"post"* action=*"LoginServlet"*>

<label class=*"label"*>Email: </label>

<input type=*"text"* name=*"owner\_email"* class=*"inputText"*/>

<br>

<label class=*"label"*>Password</label>

<input type=*"password"* name=*"password"* class=*"inputText"*/>

<input type=*"submit"* value=*"Login"* class=*"w3-right button"*/>

</form>

</div>

<div class=*"w3-half w3-card w3-margin w3-padding"*>

<h3>Not a Member Yet?</h3>

<form method = *"post"* action=*"RegisterUser"*>

<input type=*"submit"* value=*"Register"* class=*"w3-right button"*/>

</form>

</div>

<div class=*"w3-half w3-margin w3-padding"*><br><br><br></div>

<footer>

<p>Natalia Palej&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;Student No: A00279259<br>

Email: <a href=*"mailto:A00279259@student.tus.ie"*>A00279259@student.tus.ie</a></p>

</footer>

</body>

</html>

# login2.jsp

<%@ taglib uri=*"http://java.sun.com/jsp/jstl/core"* prefix=*"c"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<meta name=*"viewport"* content=*"width=device-width, initial-scale=1"*>

<link rel=*"stylesheet"* href=*"https://www.w3schools.com/w3css/4/w3.css"*>

<!-- Fonts -->

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css?family=Allerta+Stencil"*>

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css?family=Sofia"*>

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css2?family=Raleway:wght@200&display=swap"* >

<!-- CSS -->

<link rel=*"stylesheet"* type=*"text/css"* href=*"style.css"*>

<title>Natalia Palej A00279259</title>

<style>

*.background*{

background-image: *url("background3.jpg")*;

background-repeat: *no-repeat*;

background-attachment: *fixed*;

background-size: *cover*;

align-items: *center*;

height: *90vh*;

margin: *0*;

}

</style>

</head>

<body class=*"background"*>

<h1 class=*"w3-allerta"*>Login Successful</h1>

<h3>Welcome, <span class=*"raleway"*><c:out value=*"*${owner\_email}*"*/></span>!</h3>

<div class=*"w3-card w3-margin w3-padding w3-center"*>

<p class=*"w3-sofia"*>Congratulations!</p>

<p>You have successfully logged into the Dogs Application.

Here, you can manage and view information about your dogs.</p>

<form method = *"post"* action=*"IndexServlet"*>

<input type=*"submit"* value=*"GO"* class=*"w3-round-large button w3-margin"*/>

</form>

</div>

<footer>

<p>Natalia Palej&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;Student No: A00279259<br>

Email: <a href=*"mailto:A00279259@student.tus.ie"*>A00279259@student.tus.ie</a></p>

</footer>

</body>

</html>

# index.jsp

<%@ taglib uri=*"http://java.sun.com/jsp/jstl/core"* prefix=*"c"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<meta name=*"viewport"* content=*"width=device-width, initial-scale=1"*>

<link rel=*"stylesheet"* href=*"https://www.w3schools.com/w3css/4/w3.css"*>

<!-- Fonts -->

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css?family=Allerta+Stencil"*>

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css2?family=Raleway:wght@200&display=swap"* >

<!-- CSS -->

<link rel=*"stylesheet"* type=*"text/css"* href=*"style.css"*>

<title>Natalia Palej A00279259</title>

<style>

*.background* {

background-image: *url("index.jpg")*;

background-repeat: *no-repeat*;

background-attachment: *fixed*;

background-size: *cover*;

align-items: *center*;

height: *90vh*;

margin: *0*;

}

</style>

</head>

<body class=*"background"*>

<h1 class=*"w3-allerta"*>My Dog Details</h1>

<br>

<div class=*"w3-container"*>

<h3 class=*"w3-half"*>

Hello, <span class=*"raleway"*><c:out value=*"*${owner\_name}*"* /></span>!

</h3>

</div>

<!-- Dog Details -->

<div class=*"w3-margin w3-padding w3-center"* style="width: *50%*">

<table class=*"w3-table table w3-hoverable"*>

<thead>

<tr>

<th>Name</th>

<th>Age</th>

<th>Breed</th>

<th>Colour</th>

<th>Activity</th>

<th>Maintenance</th>

</tr>

</thead>

<c:forEach var=*"dog"* items=*"*${dogDetails}*"*>

<tr>

<td><c:out value=*"*${dog.name}*"* /></td>

<td><c:out value=*"*${dog.age}*"* /></td>

<td><c:out value=*"*${dog.breed}*"* /></td>

<td><c:out value=*"*${dog.colour}*"* /></td>

<td><c:out value=*"*${dog.activity}*"* /></td>

<td><c:out value=*"*${dog.maintenance}*"* /></td>

</tr>

</c:forEach>

</table>

<!-- UPDATE/DELETE dog -->

<div class=*"w3-margin"*>

<form method=*"post"* action=*"SelectedDog"*>

<label for=*"selectDog"*>Select dog to update/delete:</label>

<select name=*"name"* id=*"selectDog"* style="width: *200px*;" >

<option value=*""* disabled selected>Select Dog</option>

<c:forEach items=*"*${dogDetails}*"* var=*"dogObj"*>

<option value=*"*${dogObj.name}*"*>${dogObj.name}</option>

</c:forEach>

</select>

<div class=*"w3-panel"*>

<input type=*"submit"* name=*"userChoice"* value=*"Update"* class=*"menuType w3-margin"* style="width: *40%*"/>

<input type=*"submit"* name=*"userChoice"* value=*"Delete"* class=*"menuType w3-margin"* style="width: *40%*"/>

</div>

</form>

</div>

</div>

<div class=*"w3-container"*>

<h3 class=*"w3-half"*>MENU:</h3>

</div>

<div class=*"w3-bar-block"*>

<!-- INSERT dog -->

<div class=*"w3-bar-item"*>

<form method=*"post"* action=*"add.jsp"*>

<input type=*"submit"* value=*"Add New Dog"* class=*"menuType"* />

</form>

</div>

<!-- GET ALL DOGS -->

<div class=*"w3-bar-item"*>

<form method=*"post"* action=*"AllDogsServlet"*>

<input type=*"submit"* value=*"See Other Dogs"* class=*"menuType"* />

</form>

</div>

</div>

<!-- LOGOUT and CLOSE SESSION -->

<div class=*"w3-container"*>

<div class=*"w3-quarter"*>

<form method=*"post"* action=*"LogoutServlet"*>

<input type=*"submit"* value=*"LOGOUT"* class=*"menuType"* />

</form>

</div>

</div>

<br>

<br>

<br>

<br>

<br>

<br>

<footer>

<p>Natalia Palej&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;Student No: A00279259<br>

Email: <a href=*"mailto:A00279259@student.tus.ie"*>A00279259@student.tus.ie</a></p>

</footer>

</body>

</html>

# register.jsp

<%@ taglib uri=*"http://java.sun.com/jsp/jstl/core"* prefix=*"c"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<meta name=*"viewport"* content=*"width=device-width, initial-scale=1"*>

<link rel=*"stylesheet"* href=*"https://www.w3schools.com/w3css/4/w3.css"*>

<!-- Fonts -->

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css?family=Allerta+Stencil"*>

<!-- CSS -->

<link rel=*"stylesheet"* type=*"text/css"* href=*"style.css"*>

<title>Natalia Palej A00279259</title>

<style>

*.background*{

background-image: *url("background4.jpg")*;

background-repeat: *no-repeat*;

background-attachment: *fixed*;

background-size: *cover*;

}

</style>

<script>

**function** goBack() {

window.location.href = "login.jsp";

}

</script>

</head>

<body class=*"background"*>

<h1 class=*"w3-allerta"*>Register</h1>

<div class=*"w3-padding w3-left"*>

<h4>Dog Details:</h4>

<form method = *"post"* action=*"RegisterServlet"* class=*"w3-container w3-padding form-container"*>

<label class=*"label"*>Dog Name: </label>

<input type=*"text"* name=*"name"* class=*"inputText"*/>

<br>

<label class=*"label"*>Age:</label>

<input type=*"text"* name=*"age"* class=*"inputText"*/>

<br>

<label class=*"label"*>Breed:</label>

<input type=*"text"* name=*"breed"* class=*"inputText"*/>

<br>

<label class=*"label"*>Colour:</label>

<input type=*"text"* name=*"colour"* class=*"inputText"*/>

<br>

<label class=*"label"*>Activity Level:</label>

<input type=*"text"* name=*"activity"* class=*"inputText"*/>

<br>

<label class=*"label"*>Maintenance: </label>

<input type=*"text"* name=*"maintenance"* class=*"inputText"*/>

<br>

<label class=*"label"*>Owner Name: </label>

<input type=*"text"* name=*"owner\_name"* class=*"inputText"*/>

<br>

<label class=*"label"*>Owner Email: </label>

<input type=*"text"* name=*"owner\_email"* class=*"inputText"*/>

<br>

<label class=*"label"*>Owner Password: </label>

<input type=*"text"* name=*"owner\_password"* class=*"inputText"*/>

<br>

<button type=*"button"* onclick="goBack()" class=*"inputSubmit"*>Back</button>

<input type=*"submit"* value=*"Register"* class=*"w3-right inputSubmit"*/>

</form>

<br>

<br>

<br>

<br>

<br>

<br>

<br>

<br>

<br>

</div>

<div class=*"w3-half w3-margin w3-padding w3-center w3-card"*>

<h4>Active Members</h4>

<!-- Setting session attributes for members count -->

<c:set var=*"owners\_count"* value=*"*${owners\_count}*"* scope=*"session"* />

<c:set var=*"dogs\_count"* value=*"*${dogs\_count}*"* scope=*"session"* />

<div class=*"w3-left w3-container w3-cell"*>

<img src=*"iconPerson.png"* style="width: *60px*; margin-right: *10px*;"/>

</div>

<div class=*"w3-left w3-container w3-cell"*>

<p>Owners: <c:out value=*"*${owners\_count}*"*/></p>

</div>

<!-- Gap between owners and dogs -->

<div class=*"w3-left w3-container w3-cell"*>

</div>

<div class=*"w3-left w3-container w3-cell"*>

<img src=*"iconPet.png"* style="width: *60px*; margin-right: *30px*;"/>

</div>

<div class=*"w3-left w3-container w3-cell"*>

<p>Dogs: <c:out value=*"*${dogs\_count}*"*/></p>

</div>

</div>

<footer class=*"w3-bottom"*>

<p>Natalia Palej&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;Student No: A00279259<br>

Email: <a href=*"mailto:A00279259@student.tus.ie"*>A00279259@student.tus.ie</a></p>

</footer>

</body>

</html>

# add.jsp

<%@ taglib uri=*"http://java.sun.com/jsp/jstl/core"* prefix=*"c"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<meta name=*"viewport"* content=*"width=device-width, initial-scale=1"*>

<link rel=*"stylesheet"* href=*"https://www.w3schools.com/w3css/4/w3.css"*>

<!-- Fonts -->

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css?family=Allerta+Stencil"*>

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css2?family=Raleway:wght@200&display=swap"* >

<!-- CSS -->

<link rel=*"stylesheet"* type=*"text/css"* href=*"style.css"*>

<title>Natalia Palej A00279259</title>

<script>

**function** goBack() {

window.history.back();

}

</script>

<style>

*.body*{

background-image: *url("add.jpg")*;

background-repeat: *no-repeat*;

background-attachment: *fixed*;

background-size: *cover*;

align-items: *center*;

min-height: *400px*;

margin-bottom: *100px*;

clear: *both*;

}

</style>

</head>

<body class=*"body"*>

<h1 class=*"w3-allerta"*>Add New Dog</h1>

<h4 class=*"w3-margin"*><span class=*"raleway"*><c:out value=*"*${owner\_name}*"* /></span>, you can add new dog here.</h4>

<div class=*"w3-container w3-padding"*>

<form method = *"post"* action=*"addServlet"* class=*"w3-container w3-margin-top form"*>

<label class=*"label"*>Dog Name: </label>

<input type=*"text"* name=*"name"* class=*"inputText"*/>

<br>

<label class=*"label"*>Age:</label>

<input type=*"text"* name=*"age"* class=*"inputText"*/>

<br>

<label class=*"label"*>Breed:</label>

<input type=*"text"* name=*"breed"* class=*"inputText"*/>

<br>

<label class=*"label"*>Colour:</label>

<input type=*"text"* name=*"colour"* class=*"inputText"*/>

<br>

<label class=*"label"*>Activity Level:</label>

<input type=*"text"* name=*"activity"* class=*"inputText"*/>

<br>

<label class=*"label"*>Maintenance: </label>

<input type=*"text"* name=*"maintenance"* class=*"inputText"*/>

<br>

<input type=*"submit"* value=*"Add"* class=*"w3-right inputSubmit"*/>

<button type=*"button"* onclick="goBack()" class=*"inputSubmit"* id=*"backButton"*>Back</button>

</form>

</div>

<footer>

<p>Natalia Palej&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;Student No: A00279259<br>

Email: <a href=*"mailto:A00279259@student.tus.ie"*>A00279259@student.tus.ie</a></p>

</footer>

</body>

</html>

# delete.jsp

<%@ taglib uri=*"http://java.sun.com/jsp/jstl/core"* prefix=*"c"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<meta name=*"viewport"* content=*"width=device-width, initial-scale=1"*>

<link rel=*"stylesheet"* href=*"https://www.w3schools.com/w3css/4/w3.css"*>

<!-- Fonts -->

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css?family=Allerta+Stencil"*>

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css2?family=Raleway:wght@200&display=swap"* >

<!-- CSS -->

<link rel=*"stylesheet"* type=*"text/css"* href=*"style.css"*>

<title>Natalia Palej A00279259</title>

<style>

*.background*{

background-image: *url("delete.jpg")*;

background-repeat: *no-repeat*;

background-attachment: *fixed*;

background-size: *cover*;

align-items: *center*;

height: *90vh*;

margin: *0*;

}

</style>

</head>

<body class=*"background"*>

<h1 class=*"w3-allerta"*>Deleted Dog</h1>

<h4 class=*"w3-margin"*>

<span class=*"raleway"*><c:out value=*"*${owner\_name}*"* /></span>,

it's sad to see your dog

<span class=*"raleway"*><c:out value=*"*${sessionScope.selectedDogName}*"* /></span> gone...</h4>

<form method = *"post"* action=*"IndexServlet"*>

<input type=*"submit"* value=*"BACK"* class=*"w3-left inputSubmit"*/>

</form>

<footer>

<p>Natalia Palej&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;Student No: A00279259<br>

Email: <a href=*"mailto:A00279259@student.tus.ie"*>A00279259@student.tus.ie</a></p>

</footer>

</body>

</html>

# indexAllDogs.jsp

<%@ taglib uri=*"http://java.sun.com/jsp/jstl/core"* prefix=*"c"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<meta name=*"viewport"* content=*"width=device-width, initial-scale=1"*>

<link rel=*"stylesheet"* href=*"https://www.w3schools.com/w3css/4/w3.css"*>

<!-- Fonts -->

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css?family=Allerta+Stencil"*>

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css2?family=Raleway:wght@200&display=swap"* >

<!-- CSS -->

<link rel=*"stylesheet"* type=*"text/css"* href=*"style.css"*>

<title>Natalia Palej A00279259</title>

<script>

**function** goBack() {

window.location.href = "IndexServlet";

}

</script>

<style>

*.background*{

background-image: *url("indexAllDogs.jpg")*;

background-repeat: *no-repeat*;

background-attachment: *fixed*;

background-size: *cover*;

align-items: *center*;

height: *15vh*;

margin: *0*;

}

</style>

</head>

<body class=*"background"*>

<h1 class=*"w3-allerta"*>All Dogs</h1>

<br>

<h4><span class=*"raleway"*><c:out value=*"*${owner\_name}*"* /></span>, here's list of all dogs registered in the app:</h4>

<br>

<!-- Dogs Details represented in table -->

<div class=*"w3-container w3-center"*>

<table class=*"w3-table table w3-hoverable"*>

<thead>

<tr>

<th>Name</th>

<th>Age</th>

<th>Breed</th>

<th>Colour</th>

<th>Activity</th>

<th>Maintenance</th>

<th>Owner</th>

</tr>

</thead>

<c:forEach items=*"*${allDogs}*"* var=*"dogObj"*>

<tr class=*""*>

<td><c:out value=*"*${dogObj.name}*"* /></td>

<td><c:out value=*"*${dogObj.age}*"* /></td>

<td><c:out value=*"*${dogObj.breed}*"* /></td>

<td><c:out value=*"*${dogObj.colour}*"* /></td>

<td><c:out value=*"*${dogObj.activity}*"* /></td>

<td><c:out value=*"*${dogObj.maintenance}*"* /></td>

<td><c:out value=*"*${dogObj.owner\_name}*"* /></td>

</tr>

</c:forEach>

</table>

<button onclick="goBack()" class=*"button w3-margin w3-left"*>BACK</button>

</div>

<br>

<br>

<br>

<br>

<br>

<br>

<footer>

<p>Natalia Palej&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;Student No: A00279259<br>

Email: <a href=*"mailto:A00279259@student.tus.ie"*>A00279259@student.tus.ie</a></p>

</footer>

</body>

</html>

# update.jsp

<%@ taglib uri=*"http://java.sun.com/jsp/jstl/core"* prefix=*"c"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<meta name=*"viewport"* content=*"width=device-width, initial-scale=1"*>

<link rel=*"stylesheet"* href=*"https://www.w3schools.com/w3css/4/w3.css"*>

<!-- Fonts -->

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css?family=Allerta+Stencil"*>

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css2?family=Raleway:wght@200&display=swap"* >

<!-- CSS -->

<link rel=*"stylesheet"* type=*"text/css"* href=*"style.css"*>

<title>Natalia Palej A00279259</title>

<style>

*.background*{

background-image: *url("update.jpg")*;

background-repeat: *no-repeat*;

background-attachment: *fixed*;

background-size: *cover*;

align-items: *center*;

height: *90vh*;

margin: *0*;

}

</style>

</head>

<body class=*"background"*>

<h1 class=*"w3-allerta"*>Update Your Doggie</h1>

<h4 class=*"w3-margin"*><span class=*"raleway"*><c:out value=*"*${owner\_name}*"* /></span>,

you can update your dog, <span class=*"raleway"*><c:out value=*"*${selectedDog.name}*"*/></span>, here.</h4>

<div class=*"w3-margin"*>

<label class=*"label-white"*>Dog Name: <c:out value=*'*${selectedDog.name}*'*/></label>

<form method = *"post"* action=*"UpdateServlet"* class=*"w3-margin"*>

<label class=*"label-white"*>Age:</label>

<input class=*"w3-input w3-animate-input input"* type=*"text"* name=*"age"*

value=*"*<c:out value='${selectedDog.age}'/>*"* />

<br>

<label class=*"label-white"*>Breed:</label>

<input class=*"w3-input w3-animate-input input"* type=*"text"* name=*"breed"*

value=*"*<c:out value='${selectedDog.breed}'/>*"* />

<br>

<label class=*"label-white"*>Colour:</label>

<input class=*"w3-input w3-animate-input input"* type=*"text"* name=*"colour"*

value=*"*<c:out value='${selectedDog.colour}'/>*"* />

<br>

<label class=*"label-white"*>Activity Level:</label>

<input class=*"w3-input w3-animate-input input"* type=*"text"* name=*"activity"*

value=*"*<c:out value='${selectedDog.activity}'/>*"* />

<br>

<label class=*"label-white"*>Maintenance: </label>

<input class=*"w3-input w3-animate-input input"* type=*"text"* name=*"maintenance"*

value=*"*<c:out value='${selectedDog.maintenance}'/>*"* />

<br>

<input type=*"hidden"* name=*"owner\_name"* value=*"*<c:out value='${owner\_name}'/>*"* />

<input type=*"hidden"* name=*"owner\_email"* value=*"*<c:out value='${owner\_email}'/>*"* />

<input type=*"hidden"* name=*"owner\_password"* value=*"*<c:out value='${owner\_password}'/>*"* />

<input type=*"submit"* value=*"Update"* class=*"button w3-left"*/>

</form>

</div>

<br>

<br>

<br>

<br>

<br>

<br>

<br>

<br>

<br>

<footer>

<p>Natalia Palej&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;Student No: A00279259<br>

Email: <a href=*"mailto:A00279259@student.tus.ie"*>A00279259@student.tus.ie</a></p>

</footer>

</body>

</html>

# logout.jsp

<%@ taglib uri=*"http://java.sun.com/jsp/jstl/core"* prefix=*"c"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<meta name=*"viewport"* content=*"width=device-width, initial-scale=1"*>

<link rel=*"stylesheet"* href=*"https://www.w3schools.com/w3css/4/w3.css"*>

<!-- Fonts -->

<link rel=*"stylesheet"* href=*"https://fonts.googleapis.com/css?family=Allerta+Stencil"*>

<!-- CSS -->

<link rel=*"stylesheet"* type=*"text/css"* href=*"style.css"*>

<title>Natalia Palej A00279259</title>

<style>

*.background*{

background-image: *url("logout.jpg")*;

background-repeat: *no-repeat*;

background-attachment: *fixed*;

background-size: *cover*;

align-items: *center*;

height: *auto*;

margin: *0*;

}

</style>

</head>

<body class=*"background"*>

<h1 class=*"w3-allerta"*>G O O D B Y E</h1>

<div class=*"body w3-center"*>

<h2>Hope to see you again...</h2>

</div>

<div class=*"w3-padding w3-container w3-center "*>

<form method = *"post"* action=*"login.jsp"*>

<input type=*"submit"* value=*"Login Page"* class=*"button"*/>

</form>

</div>

<footer>

<p>Natalia Palej&nbsp;&nbsp;&nbsp;&nbsp;&nbsp;Student No: A00279259<br>

Email: <a href=*"mailto:A00279259@student.tus.ie"*>A00279259@student.tus.ie</a></p>

</footer>

</body>

</html>

# style.css

@charset *"ISO-8859-1"*;

*.w3-allerta* {

font-family: *"Allerta Stencil",* *Sans-serif*;

}

*.w3-sofia* {

font-family: *"Sofia",* *sans-serif*;

font-size: *30px*;

}

*.raleway* {

font-family: *'Raleway',* *sans-serif*;

}

**h1** {

background-color: *#4e0a54*;

color: *white*;

margin: *0px*;

padding: *16px*;

text-align: *center*;

}

**h3** {

background-color: *#4e0a54*;

color: *white*;

margin: *16px*;

padding: *16px*;

text-align: *center*;

}

**h4** {

background-color: *#4e0a54*;

color: *white*;

margin: *8px*;

padding: *8px*;

text-align: *center*;

}

*.table* {

border-width: *0.5px*;

border-style: *solid*;

border-color: *#C8C2CB*;

background-color: *white*;

opacity: *85%*;

}

*.w3-hoverable* **tbody** **tr***:hover* {

background-color: *#4A235A*;

color: *white*;

}

*.form* {

background-color: *white*;

opacity: *80%*;

margin-bottom: *100px*;

padding: *16px*;

position: *relative*;

}

*.form-container* {

background-color: *white*;

opacity: *80%*;

margin-bottom: *100px*;

padding: *16px*;

position: *relative*;

margin: *auto*;

max-width: *600px*;

}

*.label*{

color: *#4e0a54*;

font-weight: *bold*;

text-align: *left*;

}

*.label-white*{

color: *white*;

font-weight: *bold*;

text-align: *left*;

}

**footer** {

position: *fixed*;

bottom: *0*;

width: *100%*;

padding: *8px*;

text-align: *center*;

background-color: *#4e0a54*;

color: *white*;

}

@media (max-width: 1000px) {

**footer** {

display: *none*;

}

}

**body** {

padding-bottom: *100px*;

position: *relative*;

min-height: *100vh*;

}

*.button* {

padding: *20px* *40px*;

border: *none*;

border-radius: *8px*;

margin-right: *16px*;

cursor: *pointer*;

}

**button***:hover*{

color: *white*;

background-color: *#4A235A*;

}

*.inputSubmit* {

padding: *20px* *40px*;

border: *none*;

border-radius: *8px*;

margin-right: *16px*;

cursor: *pointer*;

margin: *32px*;

background-color: *#a663c2*;

}

*.menuType* {

border: *none*;

border-radius: *8px*;

background-color: *#a663c2*;

cursor: *pointer*;

margin-left: *16px*;

padding: *20px*;

width: *50%*;

}

**input**[type="submit"]*:hover* {

color: *white*;

background-color: *#4A235A*;

}

*.inputText* {

border: *1px* *solid*;

padding: *8px*;

margin: *8px* *0*;

width: *100%*;

box-sizing: *border-box*;

}

*.input*{

width: *30%*;

background-color: *transparent*;

}

# References

1. Used w3schools for:
   1. W3 CSS <https://www.w3schools.com/w3css/default.asp>
   2. CSS <https://www.w3schools.com/css/default.asp>
   3. Back Button Method
      1. <https://www.w3schools.com/jsref/obj_location.asp>
      2. <https://www.w3schools.com/jsref/met_his_back.asp>
2. Fonts Taken From: <https://fonts.google.com/specimen/Edu+TAS+Beginner>
3. Referred to GeeksForGeeks for Closing Session: <https://www.geeksforgeeks.org/servlet-httpsession-login-and-logout-example/>
4. Referred to CodeRanch to distinguish between different buttons in Servlets: <https://coderanch.com/t/533956/languages/distinguish-button-clicks-servlet>
5. Referred to JavaPoint: HttpSession interface <https://www.javatpoint.com/http-session-in-session-tracking>
6. Referred to Digitalocean: Session Management in Java – HttpServlet, Cokies, URL Rewriting: <https://www.digitalocean.com/community/tutorials/java-session-management-servlet-httpsession-url-rewriting>