

# **DEPI – JAVA Final Project**

## **Gym Management System**

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### **Main Scenario:**

Develop an application to help a gym manager manage a GYM hall, with various equipment, trainers/customers, equipment's, and exercise plan, and simple scheduling of the customers subscriptions. Consider the following information gathered during the analysis process.

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### **Project Analysis:**

- Basic Classes: Gym halls, equipment, trainers, exercise plans and customers.
  - The Gym-hall aggregates several equipment.
  - Each trainer works 8 hours a day in one hall.
  - A trainer submits a daily exercise plan with steps assigned to each equipment for a specified duration in minutes.
  - Each customer subscribes to a particular hall, at a particular time and date, with a particular trainer, with a specified exercise plan for one month.
  - System administrator can print reports, can save/load data on and from files.
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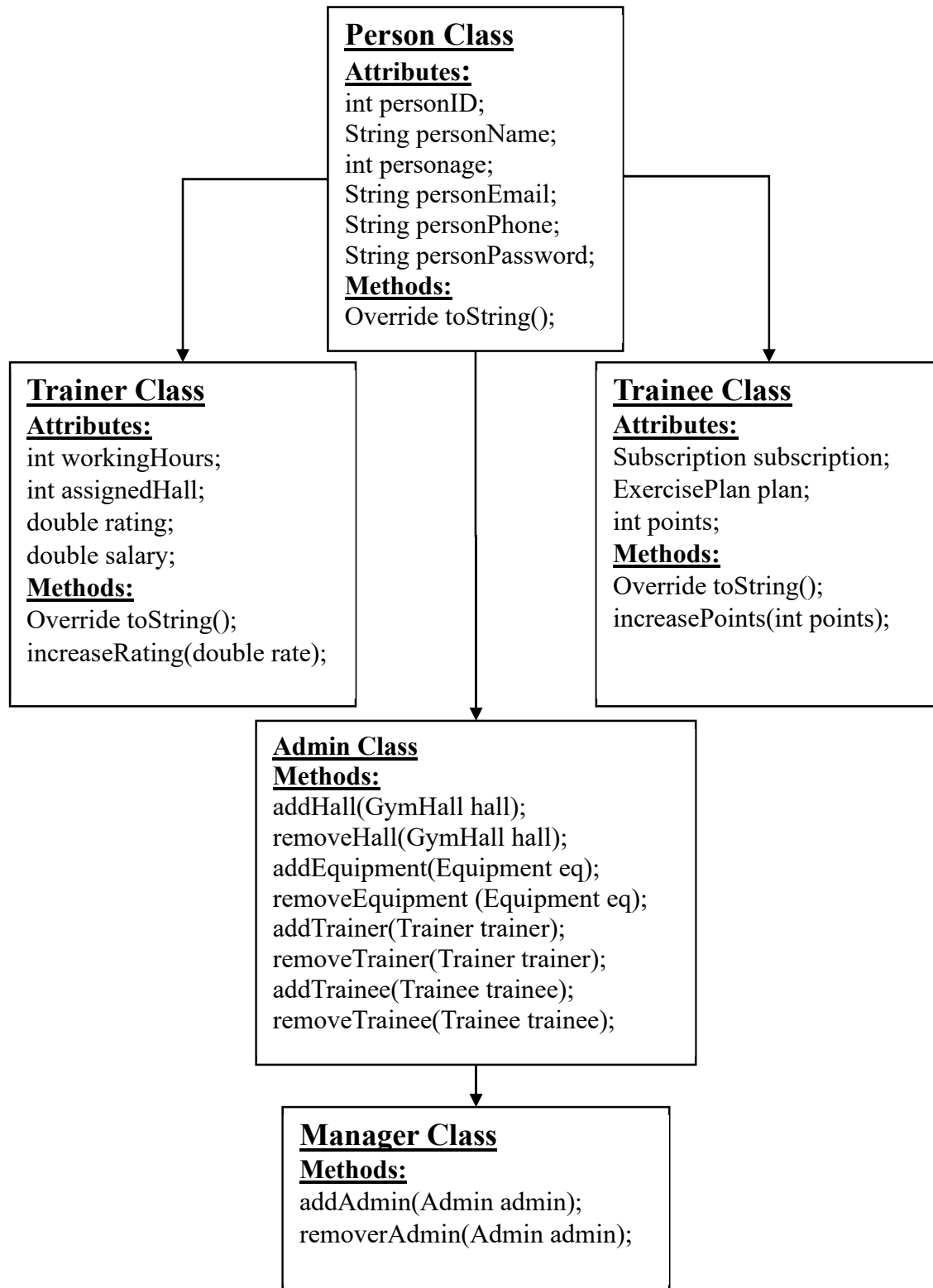
### **Extra Features:**

- Connection to SQL Database to save and load data to and from it.
- Connection with Excel file to check the attendance of Trainers and Trainees with the date and for daily attendance registration.
- Connection with Text file to save the System Logs [Add/ Delete/ Update data from Database] with the email of the admin in charge of that action.
- Designing the project as a Maven project to be run easily on any OS without downloading all the related libraries manually.
- Display a main menu to the system user to handle all the actions without dealing with SQL commands to the code.
- A reminder to the system user about the expiration of the trainee's subscription while registering his/ her attendance on the system.

## **Packages Distribution:**

- **people Package contains:**
  - **Person as Parent Class.**
  - **Trainer as Sub Class inherits from Person.**
  - **Trainee as Sub Class inherits from Person.**
  - **Admin as Sub Class inherits from Person.**
  - **Manager as Sub Class inherits from Admin.**
- **sqlConnection Package contains:**
  - **SQLConnection Class for Database connection, Table creation, Data insertion and Data deletion.**
  - **UpdateValues Class for updating Database inserted Data.**
  - **SearchData Class for searching for Data on the Database.**
- **papers Package contains:**
  - **Subscription Class to handle Trainees subscription type, Start Date, End Date and Renewal Date.**
  - **ExercisePlan Class to handle the duration of the plan and the steps included.**
  - **ExcelSheet Class to handle the connection with the Excel sheets for attendance for both Trainers and Trainees.**
- **facility Package contains:**
  - **GymHall Class to handle all the actions related to the gym halls like add a new gym hall, remove one from the system if this hall is under maintenance, add new equipment to a gym hall and assign a trainer for a gym hall.**
  - **Equipment Class to handle all the actions related to the equipment like adding a new one, removing or moving equipment to another gym hall.**
- **main Package contains:**
  - **Logs Class to handle the connection with a text file to record all the actions that are done to the system [Adding / Removing / Updating] Data.**
  - **MainRun Class to handle the simple command line user interface to help the final user [who may be can't code] to deal with the system without dealing with any SQL commands or any code.**

## Classes Attributes and Relations:



### **Subscription Class**

#### **Attributes:**

```
int subscriptionID;  
String subscriptionType;  
LocalDate startDate;  
LocalDate endDate;  
double price;  
double discount;
```

### **ExercisePlan Class**

#### **Attributes:**

```
int exercisePlanID;  
List<String> exerciseSteps;  
int exerciseDuration;
```

#### **Methods:**

```
addStep(String step);  
removeStep(String step);
```

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### **GymHall Class**

#### **Attributes:**

```
int gymHallID;  
String gymHallName;  
List<Equipment> equipment;
```

#### **Methods:**

```
Override toString();
```

### **GymHall Class**

#### **Attributes:**

```
int equipmentID;  
String equipmentName;  
String equipmentType;
```

#### **Methods:**

```
Override toString();
```

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### **ExcelSheets Class**

#### **Static Methods:**

```
createSheet();  
takeAttendance(Person person);  
createCard(Person person);
```

### **Logs Class**

#### **Static Methods:**

```
createLogsFile();  
addLogs(Admin admin, Object  
appended, String operation);
```

## **Conclusion:**

In conclusion, we aimed to make a simple Gym Management System to handle all the possible actions that could be in a gym and save the data on a Database management system (My SQL) for future Data Analysis to help the final user (Gym owner) develop his work easily.

## **Project link on GitHub:**

[https://github.com/Amr-Saber-Fathy/DEPI\\_Final\\_Project](https://github.com/Amr-Saber-Fathy/DEPI_Final_Project)