SECJ2154 - OOP Project - GROUP 06

GYM MANAGEMENT SYSTEM

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Roles & Responsibility

Tay Wei Jian - Team Lead

- Design and complete program source code for classes assigned (class People and its descendants), GUI, interactions and functions for the menus assigned (menus related to staff and customer)

Tee Jun Hong - Team Member

- Design and complete program source code for class assigned (class Equipment), GUI, interactions and functions for the menus assigned (main menu, login menu and menus related to customer)

Teoh Yee Xian - Team Member

- Design and complete program source code for class assigned (class Subscription), GUI, interactions and functions for the menus assigned (menus related to staff and admin)

Tham Chuan Yew - Team Member

- Design and complete program source code for class assigned (class ExercisePlan), GUI, interactions and functions for the menus assigned (menus related to trainer)

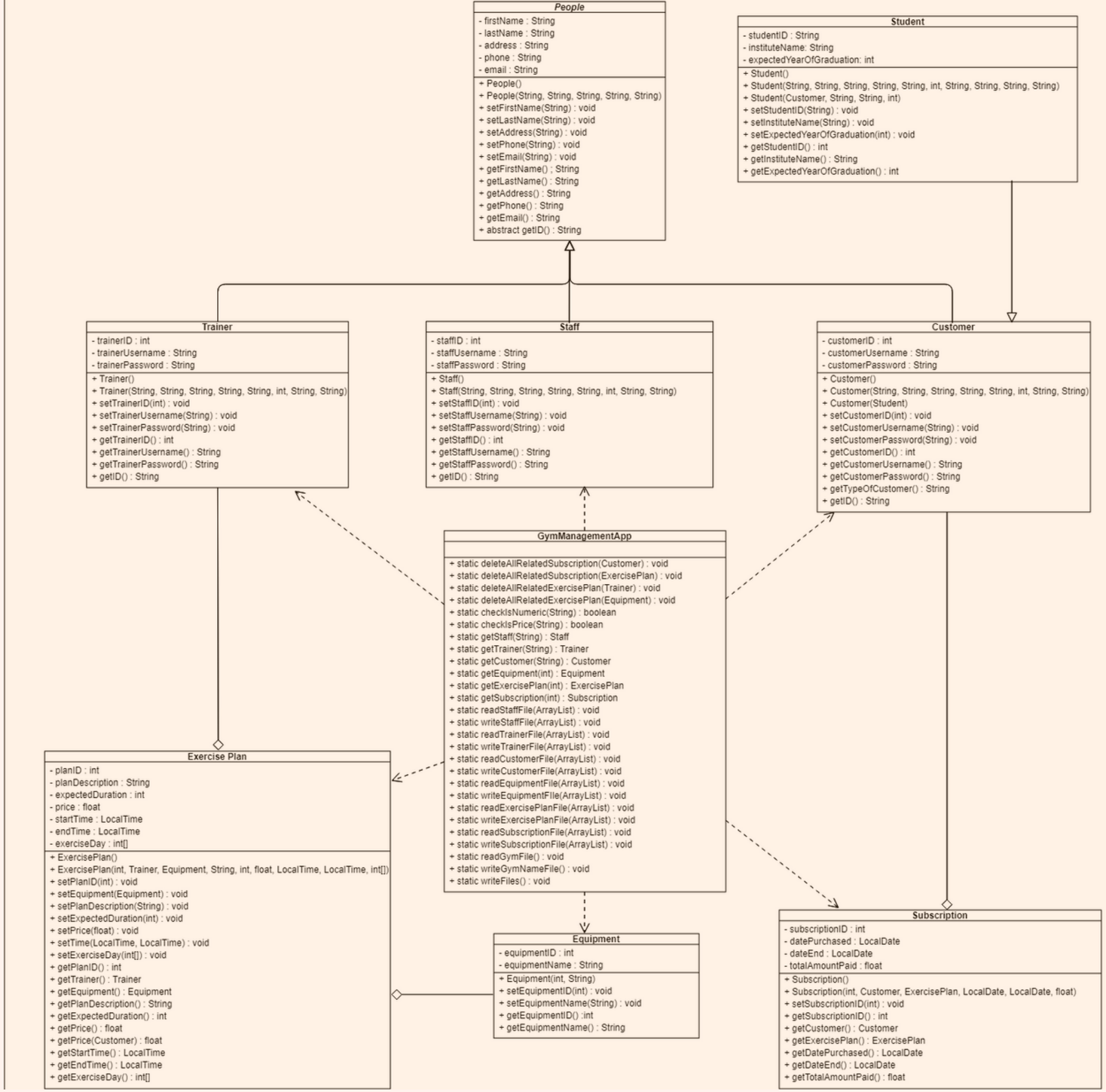
Description of the Project

In the Object-oriented Programming course, students are tasked with completing a project. For this project, our group has decided to work on a gym management system. This system is used to complete the daily operations can be seen in a gym. For example, registering new customer to the system, trainer add and manage exercise plans taught by them, admin and staff to manage the existing data for people such as staff, trainer and customer. This system combines all of these functions into a single application and allows users to login into the system based on their roles to access to the features that are only available to them.

Project Objectives

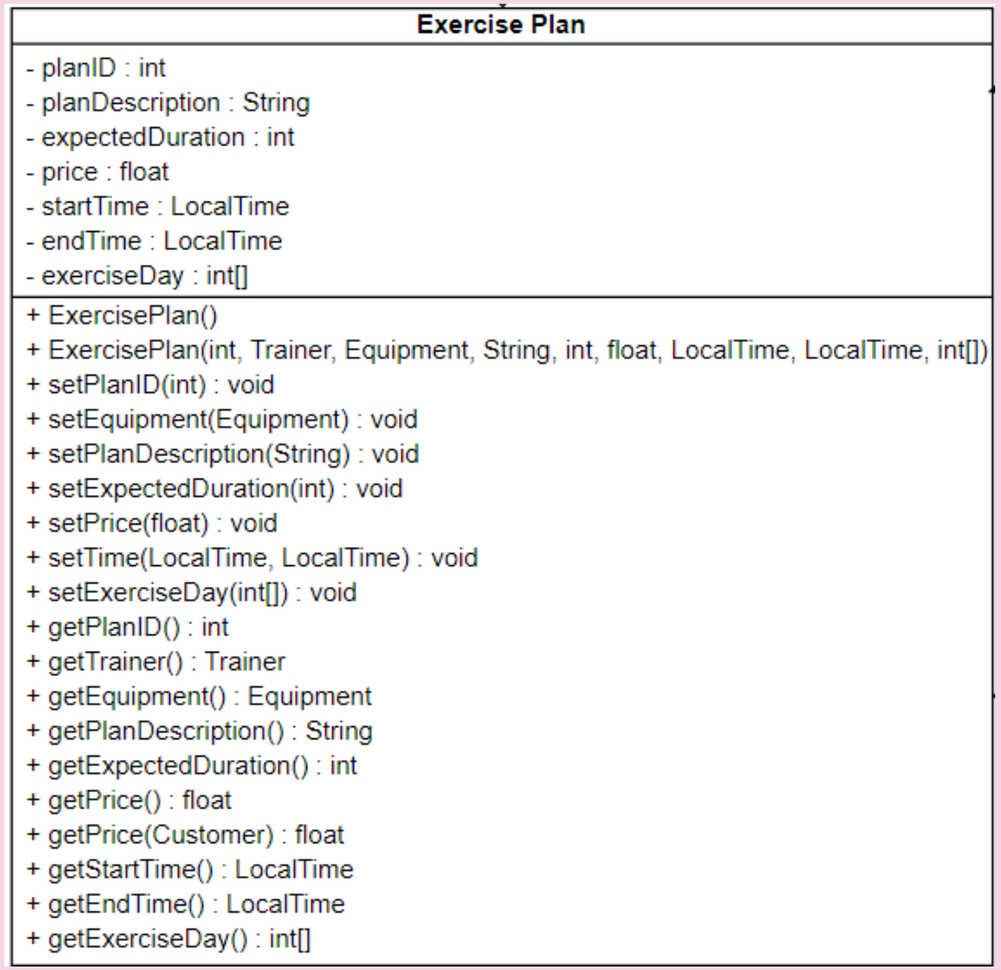
1. To combine all daily operations in a gym into a single application
2. To allow the admin (owner) of the gym to manage all data related to the gym such as managing staff, trainer, customer, equipment, exercise plan, subscription, gym's name and admin password
3. To allow the staff of the gym to manage data such as trainer, customer, equipment, exercise plan and subscription
4. To allow the trainers of the gym to manage exercise plans that is taught by them
5. To allow the customers of the gym to subscribe new exercise plan and view owned subscription

UML Class Diagram

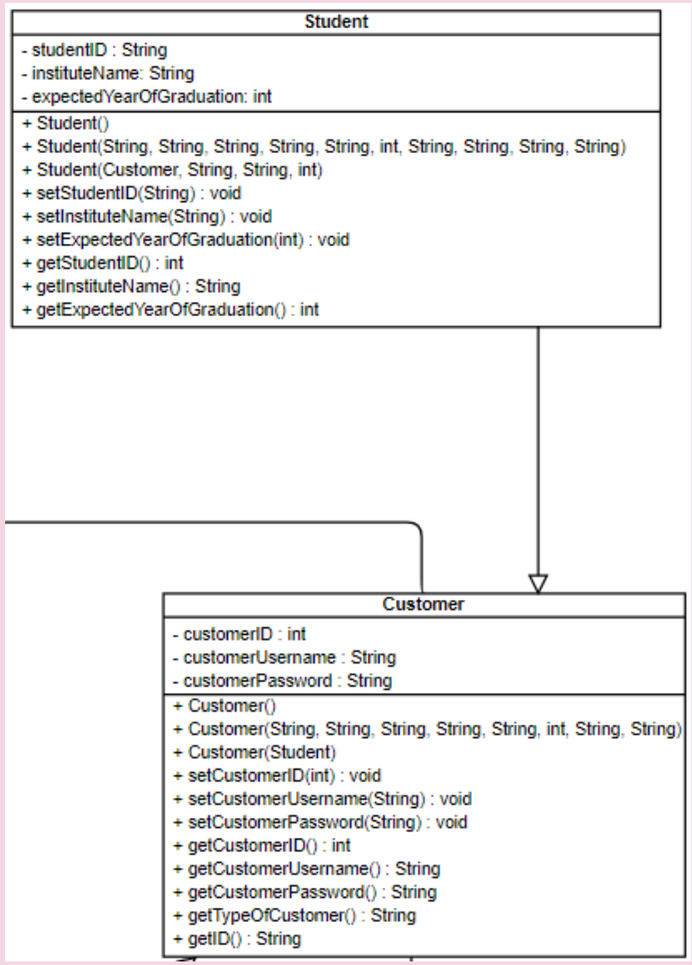


OOP Concepts Used

1 Encapsulation & Abstraction

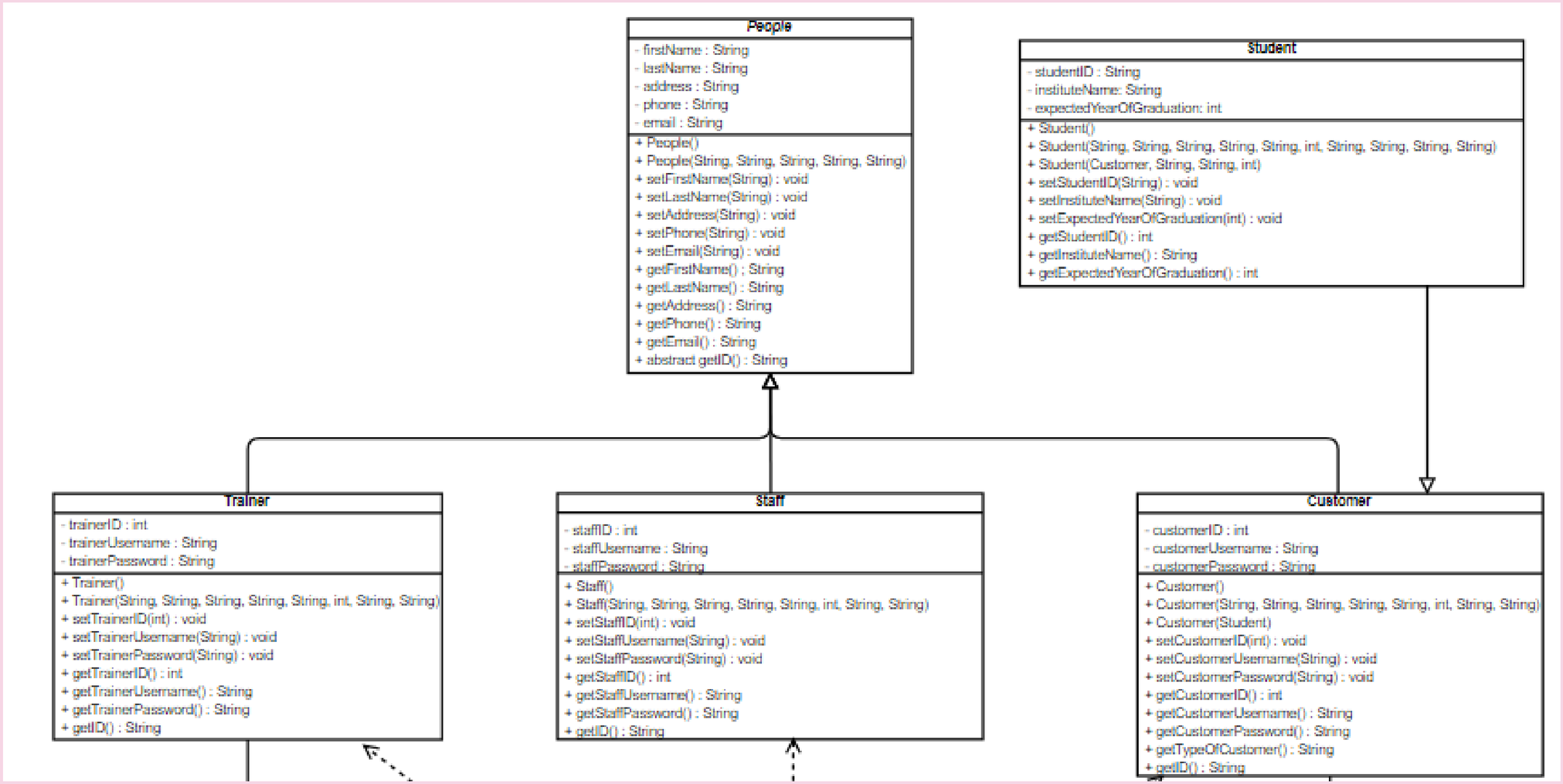


2 Inheritance



OOP Concepts Used

3 Polymorphism



Method Used

No.	Method	Class Located	Description
1	Mutator	All except main class	To modify the value of instance variable of specific object of class
2	Accessor	All except main class	To get the value of instance variable of specific object of class
3	getID()	People, Trainer, Staff, Customer	This method act as an abstract in People class, and is override in class Trainer, Staff and Customer, where it return a special code ID. (e.g. TRXX, STXX, CTXX)
4	getPrice (Customer)	ExercisePlan	Check whether it is student or normal customer and if its student, give discount up to 15%.

Method Used

Main Method

No	Method	Description
1	deleteAllRelatedSubscription(Customer) deleteAllRelatedSubscription(ExercisePlan)	Overloaded methods, call to delete all related subscription of Customer/ ExercisePlan class.
2	deleteAllRelatedExercisePlan(Trainer) deleteAllRelatedExercisePlan(Equipment)	Overloaded methods, call to delete all related exercise plan in Trainer/ Equipment class.
3	checkIsNum(String)	Check if the character input are number only
4	checkIsPrice(String)	Check if the String is in price form
5	getStaff(String)	Get the specific object of Staff
6	getTrainer(String)	Get the specific object of Trainer
7	getCustomer(String)	Get the specific object of Customer
8	getEquipment(String)	Get the specific object of Equipment
9	getExercisePlan(String)	Get the specific object of ExercisePlan
10	getSubscription(String)	Get the specific object of Subscription
11	readStaffFile(ArrayList)	Read the staff file and store in arraylist
12	writeStaffFile(ArrayList)	Write the data of staff into the staff file
13	readTrainerFile(ArrayList)	Read the trainer file and store in arraylist
14	writeTrainerFile(ArrayList)	Write the data of trainer into the trainer file
15	readCustomerFile(ArrayList)	Read the customer file and store in arraylist
16	writeCustomerFile(ArrayList)	Write the data of customer into the customer file
17	readEquipmentFile(ArrayList)	Read the equipment file and store in arraylist
18	writeEquipmentFile(ArrayList)	Write the data of equipment into the equipment file
19	readExercisePlanFile(ArrayList)	Read the exercisePlan file and store in arraylist
20	writeExercisePlanFile(ArrayList)	Write the data of exercisePlan into the exercisePlan file
21	readSubscriptionFile(ArrayList)	Read the subscription file and store in arraylist
22	writeSubscriptionFile(ArrayList)	Write the data of subscription into the subscription file
23	readGymFile()	Read the gym file and store in the variable in main class
24	writeGymNameFile()	Write the data of gym into the gym file
25	writeFiles()	Write all the file by calling each of the write method