

(Notes: Laptops and books are allowed)

The Youth Gym-Yoga-Fitness center wants to manage customer information and services. The system includes the following functions:

1. Manage Practical Subjects and Services:
 - The Center provides for customers with:
 - o many Practical Subjects (Gym, Yoga, Fitness, Dance, Weight Loss...). Each practical subject has information as: Practice Subject ID, Practice Subject Name, Room, Timetable, and belongs to a service.
 - o many Services (1 month, 3 months, 6 months, 12 months, Personal Training...) with different total training hours and costs. The system stores information of each service as: Service ID, Service Name, #Month, Personal Training, Training Hour, and Cost.
 - The General Manager (GM) are allowed to insert, delete, and update information about Practice Subjects and Services. Before performing the updating operation or deleting operation, the General Manager uses the search function in order to select suitable information.
2. Manage customer information:
 - Once a learner wants to be a member of the center: First, he/she has to give information to employee as: Name, Gender, Date of Birth, Phone, Email, and Address. Then, an employee insert the new member information. Employees are also allowed to insert, update or delete membership information. When updating / deleting membership information, employees use the search function in order to select suitable information.
3. Register for a class:
 - In order to register for a class with Practical Subject and Service (for example: the class: Yoga with Personal Training in 1 month), the member needs to give information to employee as: CustomerID, Customer Name, Practical Subject, Service, Start date. Based on given information, the system displays cost of registration. After paying, the system stores information of class registration. During registration, employee can use search function in order to get suitable information.
 - General Manager are also allowed to insert, delete, and update information about employees and trainers.

Note: Employees and General Manager have to login the system before performing offered functions.

Question 1 (3.0 scores) Create use case model of the system.

Question 2 (2.0 scores) Create activity diagram of the "Register for a class" use case.

Question 3 (2.5 scores) Create class diagram of the "Register for a class" use case.

Question 4 (2.5 scores) Create sequence diagram (including: Actor, User Interface object, Controller object, and Entity object) of the "Register for a class" use case.