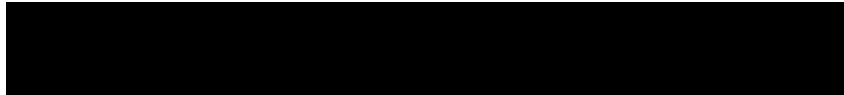# Kotelawala Defence University

Faculty of Computing
Department of Information Technology
Bachelor of Science in Information Technology and Bachelor of Science
in Information System

object -oriented Design

The task description is as follows. Design and develop the following diagram for the requirement.

1. Use-case Diagram
2. Class Diagram including boundary classes and the control classes
3. Sequential Diagram
4. State Chart Diagram

Discuss the assumptions you made for the solutions.

Description:

Dynamic Fitness Center (DFC), the gymnasm which is located at Rajagiriya. Dynamic Fitness Center has fully-equipped tools are available to maintain the fitnesses.

The owner of the DFC, Mr. Harsha, wants to develop a software solution for the DFC to manage his members of the Gymnasm. Members are three membership packages.

● Annual Membership
● Monthly Membership
● Daily Memberships.

DFC has two members. They are individual and corporate. Corporate members have annual package membership. A company or an organization should provide a minimum of 5 employees to get the corporate membership.

If Individual Members maintain the annual membership 3 years consecutively, they become regular members of the gym. Regular members could make the annual payment by two installments. Other annual members can get monthly and daily memberships and they should have made by one installment and the membership payment two weeks on or before the membership period. Monthly members should update their membership two days in advanced. However, all members should made Rs. 500/- for the membership registration.

All the members can have free online account from the Web system. The member should sign in the system and the administrator or the owner should accept the membership account. Once it is confirmed, the members can sign in the system and update their personal information such as first-name, phone number, address, email, employee name and office address. However, they cannot change the NIC number, date of birth and last name. The date of birth and the last name can only be changed by the administrator or the owner.

The members can create their own workout plan by themselves. The gymnasm installed a fingerprint scanner at the front door to come inside the gym and the system monitored your daily attendance by the finger print machine. The records are pushed to the online system immediately. The member can view the following reports.
- daily, monthly and yearly attendance report
- Workout plan report
- Membership payments and the invoices

The corporate manager can view the corporate members attendance. And the membership payment and the invoice.

Corporate members each member fee: Rs. 17,500/-
Individual member
       Annual Membership: Rs. 20,000/-
       Annual Membership (regular) Rs. 18,000/-
       Monthly Membership: Rs. 2000/-
       Daily Membership: Rs. 200/-

The system is maintained by the system administrator. The owner and the administrators have the similar management privileges. However administrator has privileges to get the system backup, restoring and to create another administrator account. The owner can create a cashier account to maintain the membership payments.

Annual members and monthly members can made a request to create a supplementary membership account for the family members. Supplementary accounts can be created for the parents, spouse and siblings. They can have a 20% discount for each member.

Membership renewal information is automatically email by the system. The mail receives the confirmation button, which member can make the confirmation that they received the remind. Sajith or Ramesh, instructors of the gym are monitor daily the membership update reminders daily. If the email confirmation is not received to the system, Sajith, confirm it by over the phone.
The system can maintain the all the employees and it's account by the cashier. Owner can view, update the monthly salary. Instructors and the cashier can made a monthly salary advanced.

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