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| **National University of Computer and Emerging Sciences** |
| Lab Manual  “Interaction Modeling” |
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| Object Oriented Analysis and Design |
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Department of Computer Science

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Consider a system of Sports Complex. The sports complex has two facilities for the members: Swimming pool & Gym. The sports complex offers two types of memberships: Regular & Premium. Premium members pay annually and have access to both facilities. Regular members pay monthly for each facility separately.

This system of sports complex is managed by an admin. He can:

1. **Add account**

Add new members to the sports complex

1. **Remove account**

Remove members from the sports complex

1. **View Details**

Admin can view all details about any member. This help him in the following two functionalities i.e. Manage memberships and Manage Transactions.

1. **Manage memberships**

Re-new memberships when they are expired. But before renewing, the admin confirms that the fees is paid. Admin can also upgrade or downgrade memberships upon requests from the members.

1. **Manage transactions**

All transactions are made via cash. Admin receives the cash and record the transaction in the system against the member.

Every member has to enter his security pin on a machine to enter the premises of the sports complex. Members can also change their security pins from the same machine.

**In lab:**

**Q:** Draw use case diagram for the above-mentioned scenario in StarUML.

**Q:** Draw sequence diagram for managing memberships.