

Common Requirements

1. Your project must implement all OOP concepts: Encapsulation, Abstraction, Inheritance and Polymorphism.
2. You will be mainly evaluated on how you used the OOP concept in your idea.
3. Keep your code clean, follow a specific convention, and choose meaningful identifiers (variables and methods names).
4. Note that: Bonus items will not be counted unless the original project is complete.

Deliverables for all projects

1. A System with GUI that fulfills all requirements (above mentioned common requirements + project specific requirements).
2. A Project documentation includes:
 - The project name.
 - The team members' info (ID, name, and section number).
 - A UML class diagram for the project.
 - A flowchart of your logic.

Teams

1. **4 – 5** members per team.
2. Team members **MUST** be in the same section.
3. Max. no. of teams/idea is **6**.

Teams Submission Forms links

➤ <https://forms.gle/AUtarA1XUbpatEUXA>

Project phases

Phase 1

[**1st** 50% project impl. + **1st** 50% documentation]

1. **Implementation:** all classes and their functionalities are finished and running to be tested without GUI.
2. **Documentation:** project and team members' info + complete UML diagram of the whole project.

Phase 2

[**2nd** 50% project impl. + **2nd** 50% documentation]

1. **Implementation:** GUI, exception handling, and files/database are added to the project.
2. **Documentation:** complete flowchart for the logic in each part of the project.

4 – Gym Management System

- It is an application with GUI for managing members' and trainers' data. Also, it enables them to manage activities and classes which are held in the gym.
- **Administrators** can do the following functionalities:
 - **Sign in and sign out** of the system (as admin).
 - **Add/ edit/ delete** any trainer. Each trainer has his personal info and classes that he holds. Also, he has many members that he trains.
 - **Assign** Trainer to classes based on his availability. For example, trainers cannot be assigned to 2 classes at the same time and day.
 - **Open/ edit/ delete** classes. Each class has one trainer and a limited number of members. Each class has a description. There are different types of classes.
 - **Assign** a trainer to the member to keep up with the member's progress.
 - **View** members in a specific class.
 - **View** members under a specific type of membership.
 - **View** all members info.
- **Employees** can do the following functionalities:
 - **Resister, sign in and sign out** of the system (as Employee).
 - **Add/ edit/ delete** members. Each member has a unique serial number and data (member's name, national ID, gender, mobile, membership type, classes attended).
 - **There are 3 types of memberships:**
 - Pay as you go (PAYG is more of a “user fee” than a membership. It enables consumers to walk into facility, pay a flat fee and participate in a class or session)
 - Open membership (month-by-month)
 - Term membership (a specific period, usually six months or a year)
 - **Add/ Remove** members in a class.
 - **View** members in a class – members of a specific type of membership – member info.

- In phase 1: all functionalities must be running though the command line.
 - In phase 2: all functionalities must be running though GUI + adding exception handling and storing all data in files or database.