

**1.0 COURSEWORK TITLE**

APU Gym Centre Management System

**2.0 THE COURSEWORK OVERVIEW & DESCRIPTION**

The assignment is to design and implement an APU Gym Centre Management System (AGC). This expected system is for the centre managers to handle end user registration and help centre customers to register & book training sessions with specific trainers. Besides, the system is also for the centre trainers to check their individual training sessions and to collect payment & provide feedback at the end of each session. In addition, the system is necessarily to be designed and developed using object-oriented approach covering object orientation concepts and principles. Furthermore, a supporting document is required to reflect the design and the implementation details demonstrating the object-oriented programming concepts and their code samples.

**3.0 OBJECTIVE OF THIS COURSEWORK**

Develop the practical ability to describe, justify, and implement an Object-oriented system.

**4.0 LEARNING OUTCOME**

At the end of this coursework, you should be able to:

- Implement a software application that exploits the strength of object-oriented paradigm (C6, PL02)
- Demonstrate the use of object oriented concepts and their functionalities in the existing system (A3, PL05)

**5.0 TYPE**

Group Assignment (2 in a group); each member is expected to complete 50% functional requirements.

## 6.0 COURSEWORK DESCRIPTION

This coursework requires students to identify a business domain for a gym centre. Construct a software solution using object-oriented programming paradigm to support user registration, training session booking, payment collection, and feedback after training session. The target users of the system are centre managers and trainers. The developed system should achieve the following requirements but not limited to:

- System login records for authentication and authorisation process.
- Manage end-user information and their roles for access control.
- Manage customer registration and training session booking.
- Manage payment collection and feedback after each training session.
- Generate analysed reports for management members

With the aforementioned requirements, you are expected to analyse a business domain pertaining to a gym centre. All the information must be saved in text file. Apart from these, the general settings and data configuration as well as fundamental functions are included to facilitate the end users.

You are also required to identify the relationship among the entities and also develop the necessary methods needed to fulfil the requirements of the expected systems.

## 7.0 GENERAL REQUIREMENTS

- The program submitted should compile and be executed without errors.
- Validation for input should be done for each entry from the users to avoid logical errors.
- The implementation code **must highlight** the use of object-oriented programming concepts as required by the solution.
- Students should use **text files** for storing and retrieving data required for the system.
- **Not allowed** to use any database tools like access / oracle etc.

## 8.0 DELIVERABLES:

- The system with complete code to be submitted in the Moodle.
- Report document in softcopy form to be submitted in the Moodle.
- Submission deadline: 27<sup>th</sup> May 2022 before 11:59 pm

## 9.0 **DOCUMENTS: COURSEWORK REPORT**

- As part of the assessment, you must submit the project report in softcopy form, which should have the following format:

*A) Cover Page:*

All reports must be prepared with a *front cover*. A protective transparent plastic sheet can be placed in front of the report to protect the front cover. The front cover should be presented with the following details:

- ✍ Module
- ✍ Coursework Title
- ✍ Intake
- ✍ Group member (Student name and ID)
- ✍ Date Assigned (the date the report was handed out).
- ✍ Date Completed (the date the report is due to be handed in).

*B) Contents:*

- ✍ Description and justification of the design and the implementation code which illustrate the object oriented programming concepts incorporated into the solution
- ✍ A 2000-word report based on the object-oriented topic researched

*C) Conclusion*

*D) References*

- ✍ The font size used in the report must be 12pt and the font is Times New Roman. Full source code is not allowed to be included in the report. The report must be typed and clearly printed.
- ✍ You may source algorithms and information from the Internet or books. Proper referencing of the resources should be evident in the document.
- ✍ All references must be made using the APA referencing system.
- ✍ List of references at the end of your document or source code must be specified.

## 10.0 ASSIGNMENT ASSESSMENT CRITERIA

The assignment assessment consists of four components: Requirement Analysis (20%), Implementation (40%), Report (30%), and Presentation (10%). Details of the allocation for each component are as follows:

Criteria	Marks allocated
<u>Requirement Analysis:</u> [CLO2-PLO2] <ul style="list-style-type: none"> <li>• Use case diagram with description</li> <li>• Class diagram</li> </ul>	<b>20%</b> 10% 10%
<u>Implementation:</u> [CLO2-PLO2] Group Member A: <ol style="list-style-type: none"> <li>1) User-level access and logging activity</li> <li>2) Functional requirement/use cases for manager</li> </ol> Group Member B: <ol style="list-style-type: none"> <li>1) Functional requirement/use cases for trainer</li> <li>2) Report or file generation</li> </ol> <i>* the group has freedom to decide what should be allocated according to the amount of work assigned.</i>	<b>40%</b> 20% 20% 20% 20%
<u>Report:</u> [CLO3-PLO4] - Report Format and References - System Documentation	<b>30%</b> 10% 20%
<u>Individual Presentation:</u> [CLO3-PLO4] Ability to answer questions addressed by the lecturer pertaining to the work done and presented	<b>10%</b>

## 11.0 DEVELOPMENT TOOLS

The program must be written in Java language and you can use any Java development IDE as a tool but the back-end data store must be **.txt** files.

## 12.0 ACADEMIC INTEGRITY

- You are expected to maintain the utmost level of academic integrity during the duration of the course.
- Plagiarism is a serious offence and will be dealt with according to APU and Staffordshire University regulations on plagiarism.