

CPT202 Software Engineering Group Project

Project Description

Introduction

Software Engineering Group Project is a project-based module without a final exam. You will work in a team of between seven and nine members to produce a moderately sized working software system. Your team will be given a vague specification and is expected to deliver a software, a presentation, and 3 reports as stated in the Assignment Papers, which meets the specifications before the due date. The size and type of the project is suitable for development in a modular format, and so teams are encouraged to devise program structures that allow various parts of the code to be developed independently by each team member. Being a team player means you are expected not only to apply the knowledge gained throughout the past semesters to specify, design, implement, test and document your own code, but also to cooperate with your teammates so that the whole project will be delivered on time with good quality.

Grouping

Each team must be consisting of seven to nine members. Teams will be formed in two stages: Firstly, you will be given the option to choose your own team members. Students failing to form a team will then be randomly assigned to a team. Each team will then be randomly assigned to one of the 3 projects presented below. Students wishing to form their own team should register the team members in Learning Mall.

General Guidelines

The project descriptions are deliberately given in the form of simple customer specifications, which (as in the real world) are incomplete and often ambiguous, rather than a set of exact functional specifications. The team members should work methodically together (as the developers in a real world software project would) to:

1. Analyse and formalise the customer specifications (at this stage, the various design choices and the software features can be subject to the team's creativity).
2. Design and decompose the functional and programmatic aspects of the problem and allocate constituent tasks to each team member. You are expected to use a top-down design which can then be modularised so that the tasks for each member can be clearly determined.
3. Implement the product with frequent meetings to report progress and decisions to each other and re-evaluate the agreed courses of action.
4. Implement test procedures, debug and correct the program. Each program module should be independently testable. Testing of each module and the program as a whole should be performed.
5. Finalise the deliverables.

The specifications are only basic, and most of the design choices should be made in your team meetings. The systems described within the different projects have a variety of different features, and the disambiguation of the customer specifications can be based on your logic and real-life experience.

If the team cannot implement all of the system features mentioned, it is better to have a few features fully working without run-time crashes than none of the required features working properly due to bugs or disrupting ripple effects between modules in the project. However, the corresponding marks deduction will be applied depending on the missing features.

If any team issues arise during the project, it is important to raise these with the module teaching staffs as soon as they do so that resolutions can be found quickly. It is important to work with your team and to share the work accordingly. All team members must be responsible to **carry out the full development cycle** (requirement study, UI, programming, database, testing as well as report writing.) of the assigned modules.

Deliverables

See Assignment Papers for details.

Project A: Food Ordering System

(Supervisor: Chengtao Ji (Chengtao.Ji@xjtlu.edu.cn);

TAs & Groups:

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Overall description:

Your team is employed by a new restaurant to develop a web-based food ordering system where customers can order their food for delivery.

Customer specifications:

The implemented ordering system should be able to provide facilities to:

- Allow the various types of food on the to be ordered where some food can be customized by different size (e.g. large, medium, and small) and condiment (e.g. pepper, sugar, etc.), etc.
- Determine the cost of all the ordered food based on the type, size, etc.
- New customer must register to the system as a system member.
- Manage the order delivery.
- Each order can be ranked from 1-star to 5-star according to his/her experience.
- The webapp must include appropriate agreements that provide sufficient legal protection to the fitness center.

System Users

The system should be able to provide the functionality for different users listed below:

1. Restaurant manager who will be able to:
 - Perform maintenance on the system master file.
 - Maintain food selling price.
 - View order.
 - Access to the statistical reports related to the business.
2. Customer will be able to:
 - Register as a new member.
 - Login to the account and place an order.
 - View order history.

- View status of current order.

Project B: Fitness Trainer Appointment System

(Supervisor: Soon Phei Tin (Soon.Tin@xjtlu.edu.cn);

TAs & Groups:

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Overall description:

Your team is employed by a fitness center to develop a web-based trainer appointment system where customers can make appointment with the trainer for the fitness session.

Customer specifications:

The implemented system should be able to provide facilities to:

- Let the members make appointment with a particular fitness trainer. Upon making appointment, the member must select the trainer, date, and time.
- New customer must register to the system as a system member.
- Member must purchase a fitness plan before making appointment.
- A plan is valid for a duration of either 6 or 12 months. Silver plan is assigned with 3-star trainer; Gold plan is assigned with 4-star trainer; Diamond plan is assigned with 5-star trainer.
- A trainer is ranked from 3-star to 5-star according to his/her experience.
- The webapp must include appropriate agreements that provide sufficient legal protection to the fitness center.

System Users

The system should be able to provide the functionality for different users listed below:

1. Shop manager who will be able to:

- Perform maintenance on the system master file.
- Send marketing notification to the expiring members.
- View appointment
- Access to the statistical reports related to the business.
- Promote/Demote trainer between rankings

2. Customer will be able to:

- Register as a new member.
- Login to the account and make appointment.
- View appointment history.
- View status of current appointment.

Project C: Online Booking Service for a Sport Centre

(Supervisor: Nanlin Jin (Nanlin.Jin@xjtlu.edu.cn);

TAs & Groups:

Hongyu Yang (Hongyu.Yang22@student.xjtlu.edu.cn): **Group(5, 6, 7, 8, 50)**

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Overall description:

A university requires a web-based booking system for staff and students to book the activities in its sport center.

Customer specifications:

The system to be implemented should be able to provide the basic operations of the sport booking service, including:

- User registration for staff and students who have a university ID card number.
- Catalogue the sport activities, including the name of the sport, ticket price, the name(s) of instructors, and the location/sport room.
- Maintain the updated information about booking to a sport activity should include time slots, dates, the number of tickets available.
- Booking functionality so that a registered user can book a sport activity.
- The webapp must include appropriate agreements that provide sufficient legal protection to the fitness center.

System Users

The system should be able to provide functionality for different end users listed below:

1. Sport centre administrator(s) who should be able to:
 - Add, amend and/or delete sport activities.
 - Perform maintenance on the system master file.
 - View bookings.
 - View the information to the registered staff and student users.
 - Access to the statistical reports related to sport bookings, such as number of tickets, and sale incomes of tickets.
2. Staff and student users who should be able to:

- Register as new user, including name, staff or student ID, phone number, etc.
- Login to the booking system.
- Update their own information.
- Book a sport activity. This process includes searching available activities, making booking(s), calculate the total cost, and make payment.
- Update their bookings. This process may include to amend or delete their existing booking(s).