Higher Diploma in Software Engineering (IT114105)
Coursework (Semester 5 - 2022/2023)
Enterprise Systems Development (ITP4511)

Students are required to upload software project implementation and the related documents to http://moodle.vtc.edu.hk on or before the submission date.

Date of Submission: On or before ***2025-Apr-21 Monday 04:30 p.m (TBC).***

Students are required to submit your work in Moodle platform and demonstrate your assignment during the lab session. Late assignment submission will **NOT** be allowed. The late assignment will score a **Zero** mark.

A. Scenario

Acer International Bakery (AIB) operates in the major cities of Japan, the USA, and Hong Kong. Its primary business is bakery, using international fruits as its main ingredients. To improve the efficiency of material delivery from source cities to bakery shops in other cities, AIB is searching for IT consultants to develop a web system to meet its needs.

The expected features enable all shops to check the current stock levels of various fruits available in their respective stores. All shops within the same city can borrow fruits from one another. Additionally, all shops can reserve fruits for the following 14 days. The system will compile all reservation records to determine the total requirements by country. Subsequently, the total requirements for the country will be sent to the fruit source warehouse. AIB will arrange for delivery from the source warehouse to the central warehouse of the target country. The central warehouse will then distribute the fruits to local bakery shops based on the reservation records.

The implementation of the new system is intended to provide stock checking for fruit in each shop, city, and central warehouse (including cities where fruits are sourced and bakery shops), as well as features for borrowing fruit (within the same cities), reserving fruit, monitoring, tracking, and reporting. This web-based system will include a user-friendly graphical user interface (GUI) and will be accessible to Senior Management, Warehouse Staff, and Bakery shop staff, each with their specific usage requirements detailed below:

Bakery shop staff
• Create an account • Reserve fruits from source city • Borrow fruits from other shops in the same cities • Check reserve records • Update fruits stock level in the shop

Warehouse Staff
• Create an account • Update the stock level (check-in) • Handle total needs by country (approval) • Arrange delivery to target country central warehouse (checkout) • Arrange delivery from central warehouse to local bakery shops for different cities (checkout)

Senior Management
• Check the analytic consumption report • User account management

- Update fruits types

This software project should be completed by 2 students with the following functional requirements.

B. Function Requirement

Fruits & Consumption Management (for shop staff and warehouse staff)

- CRUD for fruit types
- Show a list of all fruits and the source location
- Show the stock level for different locations (source country, shop, city, target country)
- Reserve fruits from source city
- Check reserve records
- Borrow fruits from other shops in the same cities
- Check the fruits on delivery (borrow/reserve)
- Update fruits stock level in the shop/warehouse
- Check-in, Check-out, Approve-Reserve, Approve-Borrow

Analytic / Report (for Senior management)

- Show a list of reserve needs of the selected shop/city/country (hints: aggregation of the reserve records)
- Show a list of consumption records of the selected shop/city/country under different seasons

Account Management (for all suitable users in different positions)

- Show a list of existing users
- Create and delete users (Shop, Warehouse, Senior management)
- Edit users with detail and roles
- Manage the user role

Extra Feature

You are encouraged to work on the extra features to score bonus mark, for example,

- Show report in graphical format
- Forecast report to achieve 1 SKU delivery
  (1 SKU mean 1 fruit delivered in 1 day to other countries by average time consumed)

C. Project Requirement

According to the scenario above, you are required to design and develop a web application with Java EE to solve the above background needs. You are required to form one project group with **2 members**. Each student will specify his/her part of the individual work.

Students should share the workload evenly. The group should list down work done by each student.

Work break down	Student 1	Student 2

	50%	50%

The project will be marked according to the following criteria.

Skills requirements

a) Use JSP/servlets to dynamically generate HTML pages
b) Use JSP/servlets to accept user inputs from browser
c) Use JSP Action
d) Use Custom Tag (Taglib).
e) Use JavaBean
f) Use JDBC for database connection
g) Use session checking
h) Use login control
i) Apply the MVC model
k) Other skills applied

Functionalities and Web design

a) Complete the user requirements
b) Consistent design and easy to use
c) Smooth navigation with the application
d) Tidy Page Layout with logical and related graphics
e) Error-free implementation
f) Creativity

Report and Presentation

Note: * Please note that you will be asked to recompile all your Java classes during the demonstration and to answer questions regarding your implementation.

Project base learning

You are encouraged to study the industry practices, such as AROME, Italian Tomato, etc.
You are also recommended to refer to the knowledge in the ITP4512 ES module for the business cycle issues or any other ERP system as a reference.

D. Guideline

Plagiarism

The submitted assignment must be the group's own work done and finished solely by the group members. Plagiarism will be treated seriously. Any assignments that are found involved wholly or partly in plagiarism (no matter the assignments are from the original authors or from the plagiarists) will score Zero mark.

AI Policy

You are required to read and follow the policy for the use of AI from the student handbook. Generally, it is considered plagiarism if you directly copy any content generated by AI.

Submission of Assignment Work

1. The front page of your submission should include the course title, module title, student identity
2. number, student name, and group number.

3. A written report should include the followings:
   a) Assumption and the user and system requirements
   b) Site map
   c) System structure on how MVC Model is applied
   d) Database structure
   e) Brief description (1 or 2 pages only) of the major characteristics and design of your application
   f) Project Schedule
   g) Conclusions
   h) A skill checklist that outlines your skills (or technologies) on a single page, emphasising the skills and technologies utilised in your project.
4. Upload all related documents and software project to moodle.vtc.edu.hk on or before the deadline.

5. You are required to demonstrate your assignment. You will fail this module if you do not demonstrate the assignment in the lab session as required.

- The End -