Swinburne University of Technology
School of Software and Electrical Engineering

SWE30003

Software Architectures and Design

Assignment 2 – Object Design

Semester 1, 2023
Worth 25 marks

Due:

Electronic submission (via Canvas): 11.59pm, Sunday May 7, 2023;

Expectation:

Given the case study (same as in Assignment 1), you are expected to come up with an (initial) object-oriented design for the *Online Healthy Foods Store* for the *All Your Healthy Foods* food retailer. More specifically, you are expected to provide the following information:

A list of classes that define your solution as well as graphical representation of their inter-relationships (e.g., a basic UML class diagram), following the *Responsibility Driven Design* approach. *Do not include* any method names and/or signatures or attributes/fields as it would most likely be too premature to come up with this information for this initial design stage. A brief justification of your choice(s) must be given.

Note: if your design contains any record or struct-like abstractions, they must be defined as *data-holder classes* and included in your class diagram (or similar). But, note that they are not regarded as "normal classes" as they are more like "data structure definitions".

For each of the identified classes, a CRC card that gives a brief description of this class, all its responsibilities, and for each responsibility, all required collaborators. Please make sure that you list collaborators *on a per-responsibility basis*!

An illustration of any *Design Patterns* or *Design Heuristics* used in your initial design, including a brief justification why they were used.

Note: As appropriate, you need to consider the use of any known Design Patterns and Design Heuristics, and such usage must be appropriately documented.

An illustration of the boot-strap (or initialisation) process of the *Online Healthy Foods Store*, i.e., which classes are responsible to create instances of what other class(es) and in which order.

An illustration of *four* typical, *non-trivial* interaction patterns/scenarios as verification of your design (e.g., how the system determines whether an input given

by one of the user is valid and if so how it is applied to the specific business activities/process).

Wrap all the above up in a suitable document structure that contains authorship, a document overview, any assumptions you made, as well as any used external references. ***Please attach your assignment 1 submission as an appendix.***

Please use the dedicated discussion forum on Canvas for any further clarifications for benefits to all, and ***no individual emails in this regard will be replied to***.

Note: The design you come up with for this assignment is to be used as the basis for a detailed design and implementation in Assignment 3. As such, it is important that *every member of your team fully understands the solution design* that you come up with in this assignment!

Submission details:

Each assignment group is to submit their proposal (design) in **electronic form** through Canvas, along with the appropriately signed and completed "**Assignment and Project Cover Sheet**" declaration form, *which must be signed by all group members*. The assignment must have the form attached as an appendix. Each group is further required to submit a **contribution document**, signed by *all* group members, which

1. lists the amount of time spent by each member on each significant part of the assignment,
2. describes briefly the contributions made by each group member, and
3. provides evidence showing that the assignment is done through *true* group collaboration, e.g., discussions and mutual reviews of all major parts of the assignment.

Note: For the assignments in this Unit of Study, students are to work in groups of three or four, i.e., the same groups as in Assignment 1. Permission by the Unit of Study convener is required to *change groups*, **well before** the submission deadline, with a "good" reason. Extensions to the submission deadline can only be granted for genuine reasons and the Unit of Study convener must be contacted *at least 48 hours* prior to the submission deadline.

The **electronic submission** is through Canvas by the deadline as published in the front of this assignment specification.

Unless the Unit of Study convener has approved an extension, any late submissions will be penalised by 10% of the assessment worth for each calendar day or part thereof the submission is late, up to a maximum of 5 days. After 5 days, a zero result will be recorded and *no* feedback may be given on the respective submission.

The Unit of Study convener reserves the right to call in any assignment teams to further explain their submission if there are doubts about the authorship of the presented solution.

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ASSIGNMENT AND PROJECT COVER SHEET

Subject Code: SWE30003 Unit Title: Software Architectures and Design

Assignment number and title: 2, Object Design Due date: 11:59pm, 7th May 2023

Tutorial Day and time: _____ Project Group: _____

Tutor: Mandeep Dhindsa

To be completed as this is a group assignment
We declare that this is a group assignment and that no part of this submission has been copied from any other student's work or from any other source except where due acknowledgment is made explicitly in the text, nor has any part been written for us by another person.

ID Number	Name	Signature
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Marker's comments:

Total Mark:_____

Extension certification:

This assignment has been given an extension and is now due on _____

Signature of Convener:_____