

Term	Winter 2022
Professor	Cindy Laurin
Course Code	SYD466
Course Section letter	A and B
Date of test	April 11 - 15
Time allowed to complete	5 days
Weight of test	40%
Total marks for the test	60
Exam Peer Reviewer Name & Comments	Marc Gurwitz, Tevin Apenteng

Instructions

Please read the case study and answer the questions below. This document, in it's .docx format and the accompanying .vpp file, must be submitted to Blackboard before the due date. Please note that submitted work, in any other format will not be graded.

You are welcome to use additional tools (example Visual Paradigm) as long as you copy pictures of your work into this document. The pictures must be legible. Your professor will not grade any work that isn't easy to read.

You are welcome to use outside sources in formulating your answers. Be sure to reference your work using APA format. **Work not properly referenced will be passed to the Academic Integrity Committee for review.**

Please utilize the case study to answer the first 6 questions of the test.

I will be available during our scheduled class times and have posted bookable meeting times. If you find need to meet outside of these meetings, please contact me via email and we will set something up.

If you are a student with an accommodation and I have received a current accommodation letter from Counselling and Accessibility Service then I will follow the accommodations listed where able. If you have any questions or concern please reach out to me.

Complex Use Case Specification Test

Please find the case study attached to this test and complete the following tasks using that case study. You must copy your visual paradigm diagrams as .jpg to this document. Screen shots will not be accepted. Include this document and your .vpp as part of your submission.

You are expected to research your case study by reviewing promotional material posted on the web by similar companies. Use this research to help you build a robust design.

For the first part of this test each group member must list their chosen Use Case in the Use Case Table posted in your group's MTeams. The Use Case Table is posted in the ComplexUseCaseTest folder.

Each group member must select a different use case for the test. **Failure to do so will result in a grade of zero for the test.** Your chosen Use Case must be considered 'complex' and must demonstrate your knowledge of composition. Your Use Case must add data. Failure to utilize composition techniques will result in a grade of zero for questions 6 and 7.

1. What problem is this case study facing? (worth 1 mark)
2. User Story (worth 2 marks)

Write a user story for your Use Case.

3. Activity Diagram (worth 10 marks)

Using Visual Paradigm, create an activity diagram from your Use Case.

4. Use Case Description (worth 20 marks)

Using this table, create a Use Case Description for your use case.

Use Case Name	Add Event
Triggering Event	A client would like to book an event.
Brief Description	Allows the client to book an event
Actors	Client
Related Use Cases	

Preconditions	The client has logged into the system and opens the main menu		
Post Conditions	Events are now booked.		
Flow of activities	Actor		System
	1.	Signs into the system	Retrieves client
	2.	Requests to book an event	Generates a unique booking ID. Retrieves and displays a list of members that will be attending the event under this client. Prompts to choose members.
	Loop 1		
	3.	Select members.	Retrieves and displays list of available events, days of week, location, start times, end times. Prompts to select.
	Loop 2		
	4.	Select event, day of week, location, start time, and end time	Create a booking line. Update the total tax and total cost. Display the booking line information, display list of booking line the client has booked. Prompts to book another event.
	End loop 2		Prompts to add more members.
	End loop 1		Display list of members, list of events booked, total tax, total cost. Prompts to save
	5.	Choose to save	Saves the booked event to the system. Returns to the main menu
Exception Conditions	Client chooses to cancel booking an event.		

5. UI Design (worth 3 marks)

Using the wireframe tool of your choice (even powerpoint works), provide pictures of your UI design.

6. Class Diagram (worth 10 marks)

Using Visual Paradigm, create a class diagram for your use case. Ensure

correct use of encapsulation.

7. Object Level Sequence Diagram (worth 20 marks)

Using Visual Paradigm, create an object level sequence diagram for your use case.

Ensure that Composition is managed correctly.

8. Generalization Question (worth 2 marks)

Blake's Service Centre (BSC) services and repairs automotive vehicles.

A customer invoice for BSC has a customer number, name, address and phone number. A customer can have more than one invoice. Each invoice has a date, a unique identifier, an invoice total and HST amount. A customer notes is included on the invoice listing future repair recommendations.

Invoice details are list as follows:

- A flat rate service such as an oil change has a price
- An hourly service has a number of hours and an hourly rate
- Parts charge includes the part number, part name, description, quantity and price
 - o The same part number can be used in multiple invoice details
- An invoice must have at least one invoice detail.

Create a class diagram for BSC's AddInvoice use case. Your solution must demonstrate your understanding of Generalization. **Solutions without Generalization will receive a grade of zero.**

Please refer to your textbook to answer the following questions

9. What is the purpose of using composition in a domain class diagram? How will composition affect programming? (worth 1 mark)
10. What is Agile Development? (worth 1 mark)