This test is an in-person test held during lab period.

**Test starts on Friday December 9, 2022.**

**Submission notes:**

* Submission will be via Blackboard
* Submit one Word document with UML diagrams included as screenshots in the document. The pictures must be legible. Your professor will not grade any work that is not easy to read.
* Submit one Visual Paradigm file (.vpp) with all your UML diagrams included as well.
* Please note that submitted work, in any other format will not be graded and will received a grade of zero (0).

**Marks will be deducted for any of the following:**

* Files cannot be opened.
* Models and formatting do not follow course conventions.
* Missing screenshots, source files, or other required elements.
* Spelling or grammar errors, or unclear text content.
* PDF, ZIP, RAR, and other file formats will not be opened and will receive a mark of 0.

**Work not properly referenced will be passed to the Academic Integrity Committee for review.**

**You will not share your answers with others, in person or through social/digital media. Any outside help or sharing of answers is considered cheating and a major violation of Seneca College’s Academic Honesty Policy. You agree not to replicate, copy, print or record any questions or answers on this test to share with others.**

|  |
| --- |
| SENECA’S ACADEMIC HONESTY POLICY |
| As a Seneca student, you must conduct yourself in an honest and trustworthy manner in all aspects of your academic career. A dishonest attempt to obtain an academic advantage is considered an offence and will not be tolerated by the College.  See Seneca Policies on Cheating and Plagiarism:  <https://www.senecacollege.ca/about/policies/academic-integrity-policy.html> |

Please find the case study assigned to you on your group platform on MS Teams under the file tab and look for “Test3-Complex Use Case Specification-UseCase -> Case\_Study\_-XXXX[CaseStudyName]” folder, which has **two documents, namely the case study and the use case selection**. Then complete the following tasks using that case study.

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 chooses a use case and record it in the use case selection document. Please record your choice. Each group member must select a different use case for the test and there must be no overlaps or other issues by confirming with your group members. 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 encapsulation. Your Use Case must add data.

1. User Story ( worth 2 marks)  
     
   Write a user story for your Use Case.

Sam North opened the store to supply 'cottagers' with the equipment necessities expected to keep up with their properties. Jeremy DeSilva monitors stock. Over past one week, the store is experiencing a lot of shortages in terms of items required for the cottagers or the hardware facilities. Jeremy orders items from providers and occasionally propose to Darlene and Daniel that specific items be 'placed at a bargain' when stock levels are excessively high. The sales for KNCS are kept recorded through the POS system and many items are ordered which is reflected in the sales report for Darlene and Daniel. Therefore, Jeremy creates product information in the POS system, for ordering different hardware stuff.

1. Activity Diagram (worth 5 marks)

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

Diagram

Description automatically generated

1. Use Case Description (worth 10 marks)

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

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case Name | Create Product Information. | | |
| Triggering Event | A new product required for the business. | | |
| Brief Description | Allows the owner to record a new product | | |
| Actors | Owner | | |
| Related Use Cases |  | | |
| Preconditions | Owner has opened the Main Menu. | | |
| Post Conditions | Product is saved in the database and now can be purchased or used in a service. | | |
| Flow of activities | Actor | | System |
|  |  | Requests to add a new product | Displays all the products or a list of products currently recorded in the system and prompts to add a new product. |
|  |  | Enters the product name, type, description, size, color and ingredients. Chooses to confirm | Verifies that the information is entered and accurate. Creates an Item ID. Shows a list of different sizes and colors and prompts for selection. |
|  |  | Selects the item and chooses to confirm. | Saves the product as well as the sizes and color choices. |
| Exception Conditions | Owner chooses to cancel adding the product. | | |

1. UI Design (worth 3 marks)  
     
   Using the wireframe tool of your choice (even powerpoint works), provide pictures of your UI design.
2. Class Diagram (worth 7 marks)  
     
   Using Visual Paradigm, create a class diagram for your use case. Ensure correct use of encapsulation.

Diagram

Description automatically generated

1. Object Level Sequence Diagram (worth 8 marks)  
     
   Using Visual Paradigm, create an object level sequence diagram for your use case.

Ensure that Encapsulation is managed correctly.

Chart

Description automatically generated

1. Generalization Question (worth 2 marks)  
     
   Design an inheritance/generalization that will allow Mississauga Ford Car Sales to list a vehicle as either a vehicle (new) or a used vehicle. Used vehicles could have a list of previous owners.

Rearrange the provided diagram and include associations, multiplicity, association names, and the missing inheritance/generalization.

Diagram

Description automatically generated with medium confidence

Please refer to your textbook to answer the following questions

1. What problem is this case study facing? (worth 1 marks)

The only problem the system is facing is the lack of staff or workers in order to meet the requirements for all the different departments in the scenario. Sam has concurred and Key North Cabin Supply is keen on building an electronic framework that will smooth out these components and permit them to maintain the business through one complete framework and are trusting that this framework will decrease a ton of the mistakes that they find with current strategies.

1. What is the purpose of a lifeline on a sequence diagram (worth 1 marks)

A lifeline addresses a single member in a sequence diagram. If it is named as “self” that demonstrates that the life saver addresses the classifier which possesses the sequence diagram.

1. Why has use-case-driven development become popular with iterative development? (worth 1 marks)

In a driven development, due to early feedback, early testing is provided, which helps in the better utilization of resources and deployment of the subsystem in the iteration. Another reason is that the driven development method helps in finding use cases with a higher risk factor and develops them in initial iterations.