Please read the case study and answer the questions below.

This test is a take-home assessment, that must be completed individually.  
Test is due Friday October 16, 2020 at 12pm (noon).

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

**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.

**Case Study**

Jenny Tourneaux runs *Auto Supplies Ltd*, a small company that supplies aftermarket auto mobile parts to local garages.

Jenny employs a small team, including some office, sales, and warehouse staff. A few times a year, Jenny attends trade shows and visits manufacturers to learn about new products. Jenny uses an outside delivery service to deliver orders to her customers.

Your team has been hired to document Jenny’s requirements and recommend software for Jenny to purchase.

Your team has started looking at Jenny’s financial records and found that Jenny allows for different payment methods and would like to categorize her income and expense transactions accordingly.

Your team leader has written the following scenarios to capture Jenny’s requirements.

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case Name | Record Income Transaction | | |
| Triggering Event | Customer pays for work done | | |
| Brief Description | Allows the Owner to record an income transaction | | |
| Actors | Owner | | |
| Related Use Cases |  | | |
| Preconditions | Owner has opened the Main Menu. | | |
| Post Conditions | Income transaction is recorded | | |
| Flow of activities | Actor | | System |
|  | 1. | Requests to record an income transaction | Displays a list of payment methods and prompts for selection. Prompts for amount of transaction and transaction date (defaults to the system date) |
|  | 2. | Selects a payment method, enters date and amount | Displays the transaction and prompts for confirmation |
|  | 3 | Chooses to confirm | Saves the transaction. |
| Exception Conditions | * Owner chooses to cancel recording income transaction. | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case Name | Query Expense transactions | | |
| Triggering Event | Owner requires a list of expenses | | |
| Brief Description | Allows the Owner to review expense transactions | | |
| Actors | Owner | | |
| Related Use Cases |  | | |
| Preconditions | Owner has opened the Main Menu. | | |
| Post Conditions | Expense transactions retrieved | | |
| Flow of activities | Actor | | System |
|  | 1. | Requests to query expense transactions | Prompts for start and end date |
|  | 2. | Enters a start and end date | Retrieves expense transactions that meet the date requirements. Displays the list |
| Exception Conditions | * Owner chooses to cancel querying expense transactions. | | |

Question 1 (worth 10 marks)

Complete a class diagram to support what your team has learned so far about *Auto Supplies Ltd.*

Question 2 (worth 20 marks)

Complete sequence diagrams to support the above scenarios.

Question 3 (worth 5 marks)

Jenny is considering recording the customer related to each sale. How will this change your class diagram? How will this change the scenarios and sequence diagrams? Please describe in English.

Question 4 (worth 5 marks)

One of Jenny’s favourite suppliers offers points on purchases. Jenny like to include these points when summarizing her transactions. She would like to record when she uses points to buy products from these suppliers. From the government’s standpoint, these sales are HST exempt. How would you change the model that you created to support this change in requirements?

Question 5 (worth 5 marks)

Some goods and services are HST exempt? What are they? Would there be any benefits to Jenny’s auto supply business?

Question 6 (worth 5 marks)

Jenny is a small business owner. Some of her clients have asked if they pay cash, can they avoid paying tax? Is this a good idea for Jenny? What about her clients?

Question 7 (worth 5 marks)

*Auto Supplies Ltd’s* project is documenting the business’s requirements for a new system. We’ve looked at Agile and Waterfall (Predictive) Project Management methodologies. You are a team of 3 analysts and a Project Manager. If you were the Project Manager, what Project Management Methodology would you use for this project? And why?