**Money Module**

Sara and Ted’s bank account looks good but at a glance, they can’t easily see which transactions are related to their online business and which are from kiosk.

They find that at the end of the month manually. They are currently using excel to record details from their bank accounts and credit card to figure it out. Sara and Ted would like to record a description of the transaction indicating whether or not the transaction was income or expense and more details of what the transaction was for. They usually pay for supplies using their credit card. Their customers pay by cash, credit card or debit card. Online sales are paid by credit card.

Once Sarah and Ted’s business grows to $30,000 in sales, they will be required to collect and pay HST. For this reason, Sarah and Ted would like to know how much they are paid and collected in HST.

They would like a more robust system than Excel to manage these details.

Your task is to read the User Story below and create a class diagram and sequence diagrams to support the scenario.

Copy your diagrams to a word file. Analyze your model and outline what the .h files would look like if you generated code from your model. Include pseudo code to indicate what each method would do. Attach this word file and your visual paradigm file to your submission.

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**User Story**

As the owner of this business, I would like to record my financial transactions so that I can quickly see how much money I’ve made and what I owe the government in HST. For my purposes, my expenses subtracted from my income.

Acceptance Criteria:

1. Must be able to query transactions by date and provide a total profit and total HST.
2. Must be able to query transactions by date and by source of the income.
3. Differentiate between expenses and income – provide a running total of income – expenses.
4. Calculate the HST owed to the government by subtracting HST paid on expenses from HST collected on income.

**Use Case Descriptions**

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| --- | --- | --- | --- |
| **Use Case Name** | **Create an income transaction** | | |
| Triggering Event | Money coming into the business. | | |
| 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 transactions are saved and added to financial totals. | | |
| Flow of activities | Actor | | System |
|  |  | Requests to add a new income transaction | Displays a calendar.  Prompts for description, transaction amount and HST amount.  Displays a list of income sources and prompts for selection. |
|  |  | Select the transaction Date.  Selects the income source.  Enter the transaction description.  Enter the transaction amount. | Verifies that date is selected.  Verifies that description and amount have been entered.  Verifies that the income source was selected.  Calculates HST  Displays financial transaction.  Prompts to save |
|  |  | Request to save | Saves the transaction and returns to the main menu |
| Exception Conditions | * Owner chooses to cancel adding the transaction | | |

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| --- | --- | --- | --- |
| **Use Case Name** | **Create an expense transaction** | | |
| Triggering Event | Money leaving the business. | | |
| Brief Description | Allows the Owner to record an expense transaction. | | |
| Actors | Owner | | |
| Related Use Cases |  | | |
| Preconditions | Owner has opened the Main Menu. | | |
| Post Conditions | Expense transactions are saved and added to financial totals. | | |
| Flow of activities | Actor | | System |
|  |  | Requests to add a new expense transaction | Displays a calendar.  Prompts for description, transaction amount and HST amount |
|  |  | Select the transaction Date.  Enters the transaction description  Enters the transaction amount. | Verifies that date is selected.  Verifies that description and amount have been entered.  Calculates HST  Displays financial transaction.  Prompts to save |
|  |  | Request to save | Saves the transaction and returns to the main menu |
| Exception Conditions | * Owner chooses to cancel adding the transaction | | |

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| --- | --- | --- | --- |
| **Use Case Name** | **Query Financial Transaction** | | |
| Triggering Event | Owner requires a list of transactions for a date period including Total Income, Total Expenses, Total Profit, Total HST collected, Total HST Paid, HST Owed | | |
| Brief Description | Allows the Owner to retrieve financial totals for a specified date range | | |
| Actors | Owner | | |
| Related Use Cases |  | | |
| Preconditions | Owner has opened the Main Menu. | | |
| Post Conditions | Financial transactions are retrieved, totaled, and displayed | | |
| Flow of activities | Actor | | System |
|  | 1. | Requests to query financial transactions | Displays a calendar. |
|  | 2. | Selects date range. | Verifies that dates are selected.  Retrieves transactions in the specified date range.  Calculates and displays total income, total expenses, Profit, total HST Owed. Prompts to exit |
|  | 3. | Request to exit | returns to the main menu |
| Exception Conditions |  | | |
|  |  | | |

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Your tasks:

1. Create a class diagram to support the above case study and Systems Use Case Specifications
2. Create an object level sequence diagram, detailing the Create Income Transaction systems use case specification.
3. Create an object level sequence diagram, detailing the Create Expense Transaction systems use case specification.
4. Create an object level sequence diagram, detailing the Query Financial Transaction system use case specification.
5. Analyze your model and outline what the “.h” files would look like if you generated code from your model.