System Model: Expense Tracker Software

Contents

[Document Information 1](#_Toc183942144)

[List of Authors 1](#_Toc183942145)

[Revision History 1](#_Toc183942146)

[Domain Model 1](#_Toc183942147)

[List of Responsibilities 1](#_Toc183942148)

[Traceability Matrix 2](#_Toc183942149)

[System-Level Sequence Diagram <Check System\_Sequence.drawio> 3](#_Toc183942150)

[Object-Level Sequence Diagram <Check Object\_Sequence.drawio> 3](#_Toc183942151)

[UML Diagram <Check UML.drawio> 3](#_Toc183942152)

# Document Information

## List of Authors

|  |
| --- |
| Names |
| Charles Eboson |

## Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Date | Author | Notes |
| 0.1 | 26.11.2024 | Charles Eboson | First draft. |
| 0.2 | 27.11.2024 | Charles Eboson | Removed the attributes section.  Updated the list of responsibilities. |
| 0.3 | 28.11.2024 | Charles Eboson | Updated the list of responsibilities to fully align with the use cases in the SRS file. (Please refer to the SRS file for use case descriptions). |
| 0.4 | 08.12.2024 | Charles Eboson | Added the Transaction concept that serves as an entity for transactions |
| 0.5 | 09.12.2024 | Charles Eboson | Added the UserAccount concept that serves as an entity for user accounts |

# Domain Model

## List of Responsibilities

K = Knowing

D = Doing

|  |  |  |
| --- | --- | --- |
| Responsibility Description | Type | Concept Name |
| Central point for controlling all authentication processes | K | AuthManager |
| Entity used to create a user account | K | UserAccount |
| Stores and retrieves all user information from the database | D | UserAccountManager |
| Secures connection to mySQL | K | Database |
| User can change settings (e.g currency) | K | Settings |
| Central point for saving and loading data files. This also supports automatic saving on exit and loading on entry | K | DataStorage |
| Entity used to create a transaction | K | Transaction |
| Handles all transaction operations including adding, modifying, viewing and deleting transactions.  Stores and retrieves all transactions from the database | D | TransactionManager |
| Displays a summarized view of all expenses in a categorized manner from the database | D | ExpenseSummary |
| Gets and displays all past transactions from the database | D | TransactionHistory |
| Generates a summary of expenses and income over a specified period from the database | D | ReportSummary |

## Traceability Matrix

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Use Case ID / Responsibility Description** | **UC1** | **UC2** | **UC3** | **UC4** | **UC5** | **UC6** | **UC7** | **UC8** |
| AuthManager |  |  |  |  |  |  |  | X |
| UserAccount |  |  |  |  |  |  |  | X |
| UserAccountManager |  |  |  |  |  |  |  | X |
| Database |  |  |  |  |  |  |  |  |
| Settings |  |  |  |  |  |  |  |  |
| DataStorage |  |  |  |  |  |  | X |  |
| Transaction | X |  |  |  |  |  |  |  |
| TransactionManager | X |  |  | X |  | X |  |  |
| ExpenseSummary |  |  | X |  |  |  |  |  |
| TransactionHistory |  | X |  |  |  |  |  |  |
| ReportSummary |  |  |  |  | X |  |  |  |



# System-Level Sequence Diagram <Check System\_Sequence.drawio>

# Object-Level Sequence Diagram <Check Object\_Sequence.drawio>

# UML Diagram <Check UML.drawio>