Personal Budget tracker

ENSE 375 Project

Use case Testing

To validate our budget tracker using use case testing we'll need to identify the following:

1. Identify the use cases
2. Design the test suites
3. Identify the steps the user needs to undertake to achieve desired outcome

**Use Cases:**
The primary use cases for the budget tracker are:
1. UC1: Add financial entry
2. UC2: View all entries
3. UC3: Delete entry
4. UC4: View balance
5. UC5: View entries by category'

**Use case 1 (UC1):**
**Preconditions:**
1. Application is running
2. The user selects "addEntry" option
3. Database connection established

**Postconditions:**

1. Valid income/expense is added to the database
2. System confirms success (adds entry) or error (entry not added)

**Actors:** System (S) and user (U)

| Steps | Description |
|---|---|
| Main success scenario | |
| 1 | **U:** selects addEntry |
| 2 | **S:** prompts user for type |
| 3 | **U:** enters type |
| 4 | **S:** validates type |
| 5 | **U:** enters category, source & amount |
| 6 | **S:** validates inputs & adds entry to DB |
| Extensions | |
| 3a. | **U:** enters the wrong type |
| | **S:** displays error and prevents entry |
| 5a. | **U:** enters wrong category, source, amount |
| | **S:** displays error and prevents entry |

**Use case 2 (UC2):**
**Preconditions:**
1. Application is running
2. The user selects "view all entries" option
3. Database connection established
4. Database has at least one entry present

**Postconditions:**

5. System shows all entries (success)
6. If no entries system displays error (no entries found)

**Actors:** System (S) and user (U)

| Steps | Description |
|---|---|
| Main success scenario | |
| 1 | **U:** selects view all entries |
| 2 | **S:** displays all entries in DB |
| Extensions | |
| 1a. | **U:** selects view entries |
| | **S:** displays error if no entries present |

**Use case 3 (UC3):**
**Preconditions:**
1. Application is running
2. The user selects "deleteEntry" option
3. Database connection established
4. Entry with id exists

**Postconditions:**

5. System removes entry from database
6. System displays error (no entries found) or success (entry deleted)

**Actors:** System (S) and user (U)

| Steps | Description |
|---|---|
| Main success scenario | |
| 1 | **U:** selects deleteEntry |
| 2 | **S:** prompts user for type and ID |
| 3 | **U:** enters type and ID |
| 4 | **S:** deletes entry and confirms |
| Extensions | |
| 3a. | **U:** enters invalid type or ID |
| | **S:** displays error for invalid ID or type |

**Use case 4 (UC4):**

**Preconditions:**

1.  Application is running
2.  The user selects "view balance" option
3.  Database connection established

**Postconditions:**

4.  System displays total income, expenses and balance

**Actors:** System (S) and user (U)

| Steps | Description |
| --- | --- |
| Main success scenario | |
| 1 | **U:** selects view balance |
| 2 | **S:** obtains total income and expenses |
| 3 | **S:** calculates and displays net balance |


**Use case 5 (UC5):**

**Preconditions:**

1.  Application is running
2.  The user selects "view entries by category" option
3.  Database connection established
4.  Entry exists for category/ source

**Postconditions:**

5.  System displays filtered entries
6.  No entries exist system displays appropriate message

**Actors:** System (S) and user (U)

| Steps | Description |
| --- | --- |
| Main success scenario | |
| 1 | **U:** selects view entry by category |
| 2 | **S:** prompts user for type and category |
| 3 | **U:** enters type and category |
| 4 | **S:** validates and searches for entry |
| 5 | **S:** displays entry |
| Extensions | |
| 3a. | **U:** enters invalid type or category |
| | **S:** displays error message |
| 5a | **S:** no entries found |
| | **S:** displays "no entries found" |


For detailed implementation of these test's visit BudgetModelUseCaseTest.java.