

CS480 – Course project

Summer 2021

Database: **Expense and Saving Tracker**

Description:

Expense and Saving Tracker system helps users to keep track of their expenses and savings. The system consist of 4 entities (User, Expense, Saving, Category).

The system can keep track of multiple users, where each User entity has it's own unique user_id and name. User can add, delete, update the expenses, where Expense entity is related to a user using user_id and it has it's own unique expense_id, name, amount, date of creation and category. User can add, delete, update the Saving, where Saving entity is related to a user using user_id and it has it's own unique saving_id, name, amount and date of creation. To categorize the expenses, the system has Category entity which has it's own unique category_id and name.

User can add any number of Expenses/Savings and keep track of those. The system can help the user to see the daily, monthly and yearly statistics of Expenses/Savings.

Part 2 – CRUD (Create, read, update, and delete)

Deadline: July 17, 2021

List of strong entities:

1. User
2. Expense
3. Saving

List of weak entities:

4. Category

We will implement the following functionality using Java and SQL with necessary GUI interfaces.

1. Insert/delete/update/read a **User** (all attributes except the user_id). The user_id will be generated by the system automatically using MySQL auto-increment.
2. Insert/delete/update/read a **Expense** (all attributes except the expense_id). The expense_id will be generated by the system automatically using MySQL auto-increment.
3. Insert/delete/update/read a **Saving** (all attributes except the saving_id). The saving_id will be generated by the system automatically using MySQL auto-increment.
4. Insert/read a **Category** (all attributes except the category_id). The category_id will be generated by the system automatically using MySQL auto-increment.

Part 3 – Queries

Deadline: July 31, 2021

Based on the Demo, we will implement the following functionality using Java and SQL with necessary GUI interfaces.

Trivial Queries:

1. List all Users
2. List all Expenses
3. List all Savings
4. List all Categories

Non-trivial Queries:

1. List all the expenses of a particular user using user_id sorted by date.
2. List all the savings of a particular user using user_id.
3. Find the daily/weekly/monthly expenses of a user using user_id.
4. Find the daily/weekly/monthly savings of a user using user_id.
5. Find the most expensive month of a user using user_id.
6. Find the least saving month of a user using user_id.
7. Find the expense of a particular category (travel, food etc).
8. Find the total profit of a month for a user. Profit considered as difference between expenses and savings