

Ministry of Higher Education and Scientific
Erbil Polytechnic University
Erbil Technical Engineering College
Information System Engineering Dep.



FairFund

Expense Sharing & Management System

Prepared by:

Mohammad salim

Ahmad Hamad Ahmad

Mohammad Qadr

Abdulaziz Shwan

Supervisor:

Mr. Kosrat Dlshad

2024-2025

Introduction

FairFund is an application developed on JavaFX and works as a desktop application for groups to manage and track their expenses. Users can enter expenses incurred by any member and share the costs based on preset rules for consumption. It also allows tracking of outstanding dues against each participant. The application is easy to operate with simple user interfaces and good data processing features that help in the smooth operations of finances in groupings. Moreover, FairFund strives to minimize financial disputes by performing calculations automatically and solving expense management issues in a transparent and effective manner.

Project Objectives:

- Create an expense-sharing application with JavaFX and provide users with a smooth experience towards accomplishing the objectives.
- Implement OOP principles such as Encapsulation, Inheritance, Polymorphism, and Abstraction to make the system easy to maintain and extend in the future.
- Develop an interactive user interface with enhanced usability and greater user experience.
- Store application data locally using SQLite for instant data retrieval.
- Use GitHub for maintaining codebase and enabling productivity of multiple developers.
- Raise user satisfaction with informative dashboards and analysis of the financial data.

Target Users:

- **Friends and Roommates:** People that share the costs of rent, groceries, utilities, and other living expenses.
- **Teams and Organizations:** These workgroups handle specific budgets. With these, teams can easily track expenses with structure.
- **Families:** Any set of family members can use this software to easily track any shared household or travel expenses and ensure a fair distribution system.
- **Event Planners and Travelers:** These assorted groups can split and maintain clear records for expenses for different events or travel related activities.
- **Small Businesses:** This includes any entrepreneur or owners of small businesses who have team members working on various projects and maintaining various expenses.

Main Functionalities:

1. **Expense Logging** - Users can create records with descriptions which can be altered or deleted along with the amount noted with them.
2. **Expense Splitting** - Group members can automatically divide shared expenses fairly and for some, detailed calculations are not needed.
3. **Balance Tracking** - A summary which displays a live amount of who owes how much to whom and by which member.
4. **Data Persistence** - Utilize SQLite to delete and keep hold of information on expenses to ensure they can be accessed whenever without a timeline constraint.
5. **Interactive Dashboard** - A summary page that shows total expenses, payments made, and resets all unpaid payments in visually appealing style.

Expected Outcomes:

- A modular JavaFX project that is up to the academic and practical standards.
- Code that is easy to change and add onto with scalable code and the best practices of software development.
- A desktop software for proper tracking of expenses for every user and the splitting of funds among them.
- An effective presentation demonstrating the application's features and ease of use.
- An organized GitHub repository that contains all the source code, documentation, and any other materials that would allow for extension or continuation of the project.

How to Build the Project:

1. **Setup:** Create a new JavaFX project on Eclipse IDE and set up SQLite for data storage.
2. **Implementation:** Start with the expense recording feature, then implement the expense splitting and balance checking functions.
3. **Persistence:** Use SQLite to write and read expense data.
4. **Version Control:** Create a repository on GitHub for versioning and collaboration.
5. **Testing:** Verify all core components work and attempt to eliminate bugs.

This FairFund document is the initial guideline for correspondence from users to the customer's project development team in terms of what the users want and what the end product needs to be as well as how it will be graded. This project is to be used as an academic one but also serves as an application in real world expense management.