

Budgeter Web APP

BY

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Continuing Professional Development: 7 topics outside of the curriculum that we need to complete the project

- Topic 1: Laravel/PHP
- Topic 2: MVC
- Topic 3: ORM
- Topic 4: REST API
- Topic 5: Heroku
- Topic 6: ClearDB
- Topic 7: Dynamic CSS format

Skills and Tools Used

- Tool/Software 1: Github (For collaboration)
- Tool/Software 2: Eclipse (Coding & Programming)
- Tool/Software 3: IntelliJ (Coding & Programming)
- Tool/Software 4: Visual Studio Code (HTML & CSS Coding & Programming)
- Tool/Software 5: MySQL workbench (database)
- Tool/Software 6: TomCat Server (server for web app)
- Tool/Software 7: JDBC (Define how a client may access a database)
- Tool/Software 8: Google Docs (Documentation Organizations)
- Tool/Software 9: Zoom (Result Presentation)
- Tool/Software 10: WeChat (Internal Communication)

Designs and decisions

This project aims at creating a personal expenditure manager web application that records the expenses reported in each account.

After registration, users can connect their accounts and form a single unit where all of their expenses will be kept track of by a single expense manager.

By providing different functionalities, the application will encourage users to manage their personal budget appropriately and reach financial self-actualization.

Chat (Socket or/and Websocket) is not necessary and sometimes fail to work appropriately.

Frontend—Hanfei Yang, Xi Luo

Home page (index.jsp)

Login page (login.jsp)

Registration page (register.jsp)

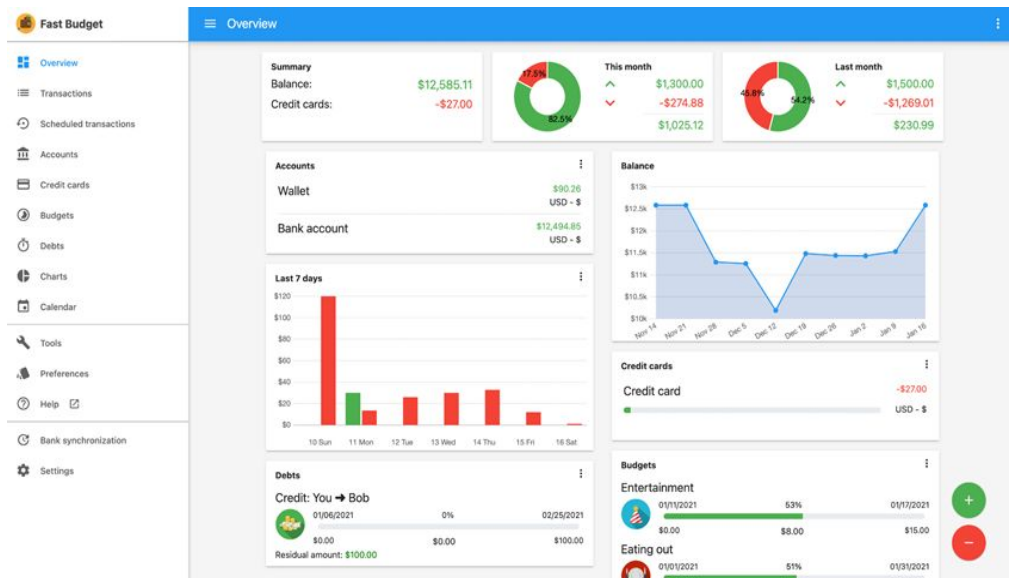
Join group page (group.jsp)

Single User Detail page
(personalprofile.jsp)

Group Detail page
(groupprofile.jsp)

Search result page
(search.jsp)

The desired style of our web application is simple and concise.
The desired impression given to the user should look like this:



Comparison between proposal and the result

Hand-drawn proposal for the Budgeter app interface. The top bar includes the app name "Budgeter", a search bar, a "Category" dropdown, and "Login" and "Register" links. The main content area is divided into two sections: "Detail" and "Group". The "Detail" section contains the text "Join an existing group" and "Enter your invitation code:" followed by a text input field. The "Group" section contains the text "Or Create a Group" and "Set number of people:" followed by a numeric input field with the value "3". Below this is a large text box labeled "[Display the invitation code here]". A sidebar on the left lists navigation options: "Add Personal", "Expenditure", "Personal Profile", "Group", and "Group Profile".

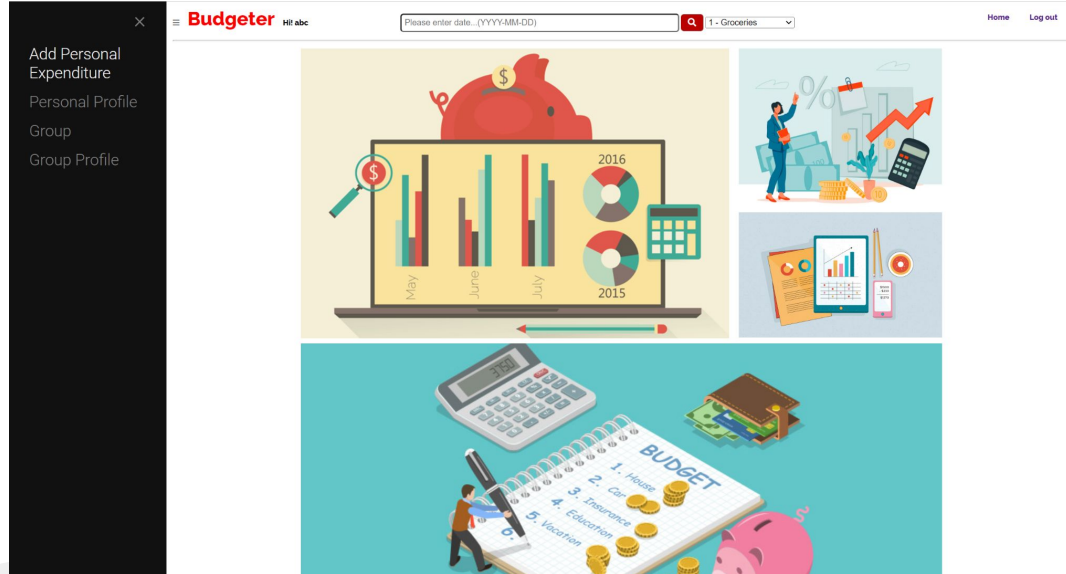
Hand-drawn proposal for the Register form. The form is titled "Register" and includes fields for "Email", "Username", "Password", and "Confirm Password". There is a checkbox for "I agree to the terms and conditions" and a "Register" button at the bottom.

Final result of the Budgeter app interface. The app has a pink and yellow gradient background. The top bar is pink with the app name "Budgeter" and links for "Home", "Log in", and "Register". The main content area is a white card with the title "Register" and fields for "Email", "Username", "Password", and "Confirm Password". A red button labeled "CREATE ACCOUNT" is at the bottom.

Successfully Achieved!

Functionality

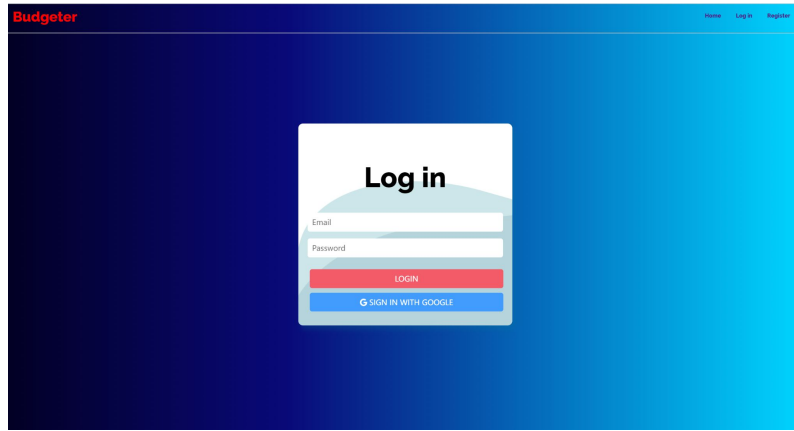
Homepage



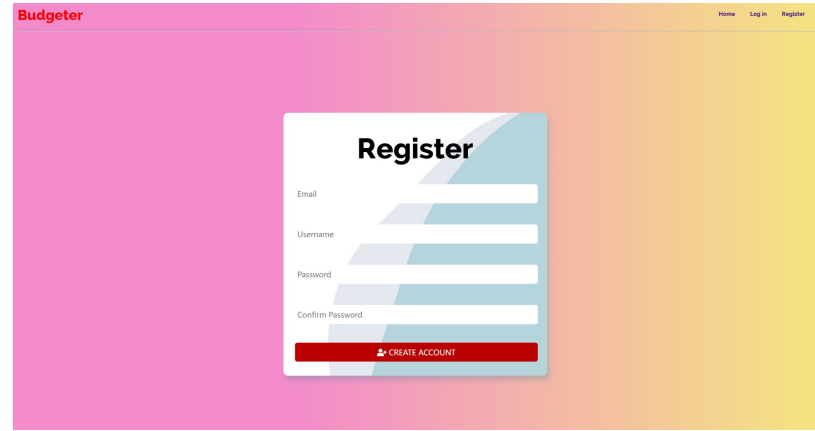
Home page - able to redirect user to all sub-pages

Functionality

Login/ Register



The screenshot shows the login page of a web application named "Budgeter". The page has a dark blue gradient background. A white login form is centered, featuring the title "Log in", an email input field, a password input field, a red "LOGIN" button, and a blue "SIGN IN WITH GOOGLE" button. The top navigation bar includes the "Budgeter" logo and links for "Home", "Log In", and "Register".



The screenshot shows the register page of the "Budgeter" web application. The background is a light pink to yellow gradient. A white registration form is centered, titled "Register", and includes fields for "Email", "Username", "Password", and "Confirm Password". A red "CREATE ACCOUNT" button is at the bottom of the form. The top navigation bar displays the "Budgeter" logo and links for "Home", "Log In", and "Register".

These pages connect to the database, store the valid information through registration, and verify the repetition and existence of users.

Functionality

Budgets Pages-Personal

Personal budget/expenditure amount edition.

Expenditure categories.

Transaction date.

Transaction description.

Alert if not enough budget.

Budgeter Hi abc

Please enter date. (YYYY-MM-DD)

1 - Groceries

Home Log out

Personal Budget: 1234
Personal Expenditure: 0.0

If you want to change the budget, enter the new budget:

Submit

Budgeter Hi abc

Please enter date. (YYYY-MM-DD)

1 - Groceries

Home Log out

Add a personal expenditure

Enter expenditure amount:

Choose expenditure category: 1 - Groceries

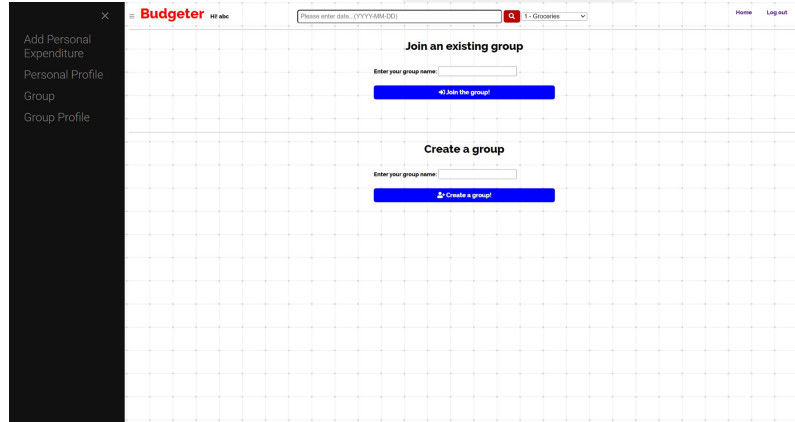
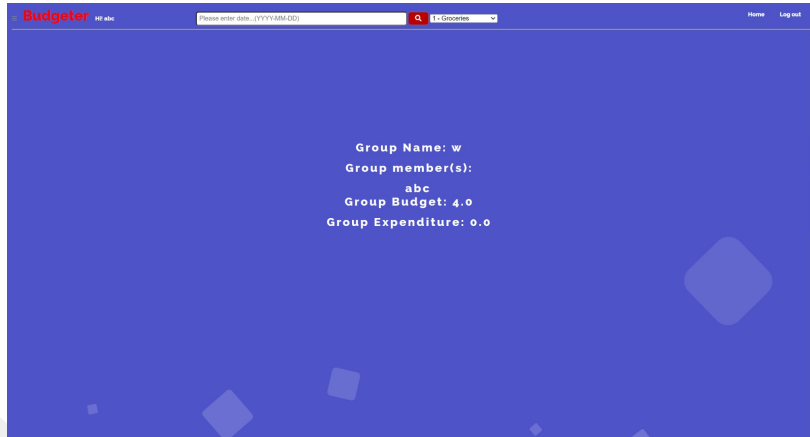
Enter the transaction date: 10/10/11

Enter transaction description:

Add expenditure!

Functionality

Budgets Pages-Group



Create group (Use database to create relations between users)

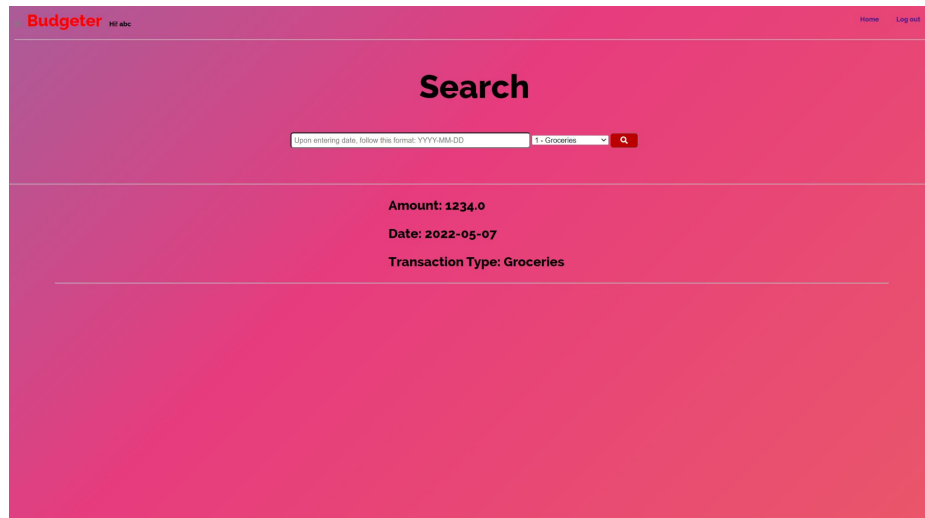
Join Group (Store in database)

Show the detail information for your own group

Error message would prompt out if repeated group is created or joined.

Functionality

Search



The screenshot shows a web application interface for 'Budgeter'. At the top left, the logo 'Budgeter' is followed by 'Hi abc'. At the top right, there are links for 'Home' and 'Log out'. The main heading is 'Search'. Below it is a search bar with a placeholder text 'Upon entering date, follow this format: YYYY-MM-DD'. To the right of the search bar is a dropdown menu showing '1 - Groceries' and a magnifying glass icon. Below the search bar, the results are displayed: 'Amount: 1234.0', 'Date: 2022-05-07', and 'Transaction Type: Groceries'.

Budgeter Hi abc Home Log out

Search

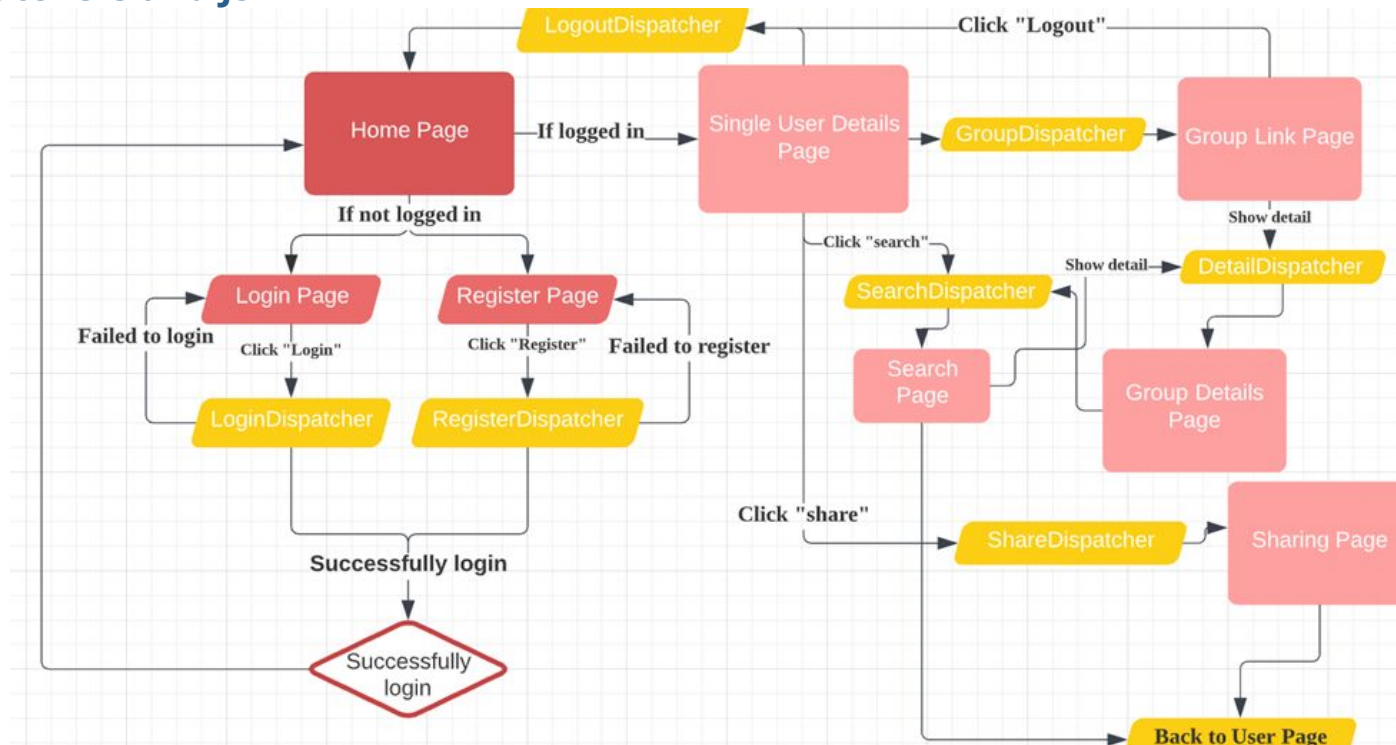
Upon entering date, follow this format: YYYY-MM-DD 1 - Groceries 🔍

Amount: 1234.0
Date: 2022-05-07
Transaction Type: Groceries

Search information of expenditure base on the categories created in personal budget pages

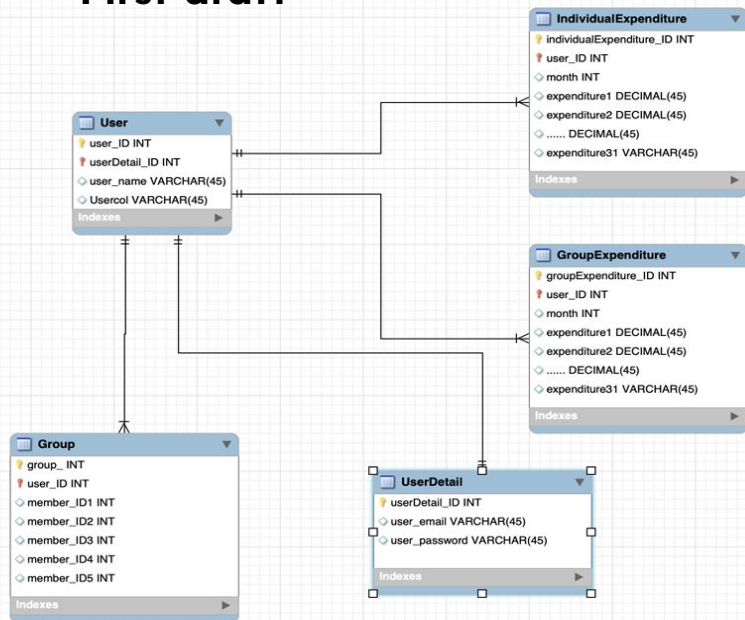
Backend—Yixiao Li, Shikun Wang

Dispatchers and JSP

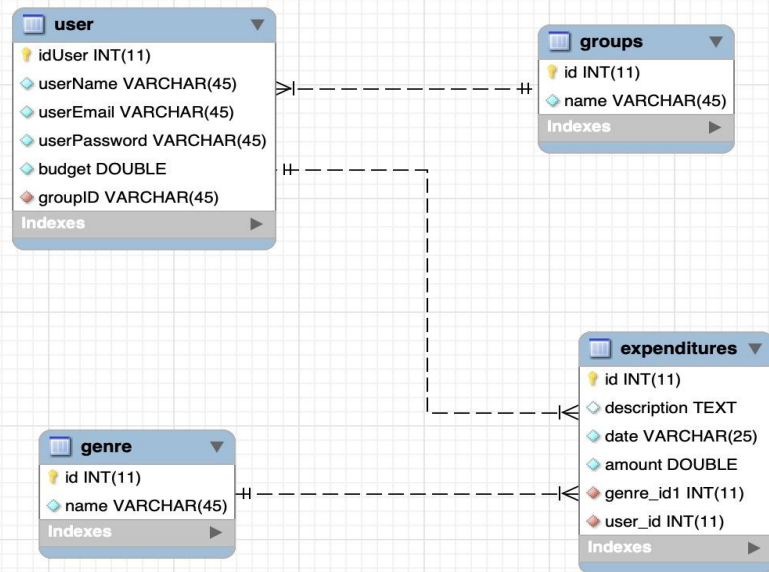


Database—Yizheng Qin, Jiahang Zhang

First draft



Final version



Multi-threading

- Multiple User Can Use Budgeter Simultaneously

There will be no threading problems when multiple users in one group add expenditures simultaneously, ie, that group's total expenditure gets updated correctly without race condition.

"Tomcat will invoke your code (i.e. your servlets) from multiple threads, and if that code is not thread-safe, you'll have problems. Tomcat's threads are no different to any threads you create yourself." – Stack Overflow

Reference:
<https://stackoverflow.com/questions/2810054/tomcat-threads-vs-java-threads#:~:text=Tomcat%20will%20invoke%20your%20code,any%20threads%20you%20create%20yourself.>

TOMCAT!!!



Networking

Multiple Users can get connected to the TomCat Server (a shared medium), transport and exchange data by creating and joining groups.

If User A joins User B's group, User B's group profile gets updated.

If User A adds a new expenditure, the group expenditure (if User A has a group) gets updated.

The image features a minimalist design with abstract organic shapes in dark blue, light blue, and grey. These shapes are scattered across the top and bottom edges of the frame. Several small, solid-colored dots in the same palette are also present, adding to the decorative elements. The central focus is the word "Thanks" in a bold, dark blue, sans-serif typeface.

Thanks