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Programming 3C 7313

Budget Tracker App

Part 1 – Planning and Design.

Introduction:

This project focuses on designing PennyWise, a budget management app that helps users manage their finances more effectively. In today's busy world, it's important to have an easy-to-use tool to track and control spending, and PennyWise is created to meet that need. The app will allow users to set and track budgets, view detailed spending reports, and make better financial decisions.

This document will explain the design process of the app, starting with understanding what users need and want from a budgeting app. It will also explain the key features and functions of PennyWise, as well as the user interface and how the app will work. Research on other budgeting apps has been used to guide the design decisions, pointing out what works well and where PennyWise can stand out with new features.

The design document will include details on the app's main features, user interface, and technical plans, showing how each decision ties back to the research. The goal is to create an app that is not only practical but also easy and enjoyable to use, setting PennyWise apart from other budget apps in the market.

Brief overview:

Name:

PennyWise

Icon:

Description of innovative features:

- **Currency selection**

Users can choose their preferred currency when setting up the app. This feature is especially useful for travellers or those who manage finances in multiple currencies, ensuring accurate budgeting and expense tracking. (NerdWallet, 2023). (RippenApps, 2024).

- **Streak system**

Encourages users to log their expenses consistently by rewarding them for maintaining streaks. For example, if a user records expenses daily or weekly without missing a day, they earn badges or rewards, motivating them to develop good financial habits. (NerdWallet, 2023). (RippenApps, 2024). (Bright Infonent, 2024).

- **Budget quiz**

An interactive feature that helps users improve their financial knowledge. The quiz includes questions on budgeting, saving, and smart spending, making financial literacy fun and engaging. (NerdWallet, 2023). (RippenApps, 2024). (Bright Infonent, 2024).

- **Budget reminders**

Smart notifications that remind users to log their expenses, review their budget, or check their spending progress. These reminders help users stay on track and avoid missing important updates on their finances. (NerdWallet, 2023). (RippenApps, 2024). (Bright Infonent, 2024).

- **Visual spending insights**

The app provides interactive charts and graphs that display spending trends over time. Users can see how much they've spent in different categories, identify patterns, and make informed financial decisions. (NerdWallet, 2023). (RippenApps, 2024). (Bright Infonent, 2024).

- **Day and night mode**

Users can switch between light and dark themes to improve readability and reduce eye strain. The night mode is especially helpful for low-light environments, ensuring a comfortable user experience at all times. (NerdWallet, 2023). (RippenApps, 2024). (Bright Infonent, 2024).

Requirements List:

1. User Registration and Login

- Users must be able to register by providing their Name, Surname, Phone Number, and Email.

- A secure password must be created during registration and stored using encryption.

- User credentials (email and password) must be stored in a local database.

- Upon login, the app must validate credentials by matching the entered email and password with stored data.

- Users should have the option to reset their password via email verification.

- Returning users should be able to log in seamlessly, and an option to stay logged in should be available for convenience.

- The system should provide error messages for incorrect login attempts and a welcome message after a successful login.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

2. Expense Category Management

- Users must be able to create, edit, and delete expense categories based on their needs.

- The app should provide default categories like "Groceries," "School," "Gym," etc.

- Users must have the ability to assign custom colours or icons to categories for better visual organization.

- Categories should be sortable and filterable based on usage frequency.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

3. Adding Expenses

- Users must be able to log an expense by specifying:

- Amount (numeric input, required, supports decimal values)

- Date (selectable, default: current date, required)

- Description (text input, optional)

- Category (dropdown selection, required)

- Receipt Photo (optional image attachment)

- Users should be able to edit or delete any previously recorded expense.

- Expenses must be stored in a structured format to allow quick retrieval and filtering.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

4. Adding Photos to Expenses

- Users must be able to attach images of receipts or related documents to expense entries.

- Photos should be stored efficiently to avoid excessive storage consumption.

- Users should be able to view, zoom in, or delete attached images when needed.

- Images should be compressed without significant loss of quality to optimize storage usage.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

5. Setting a Monthly Budget and Category Limits

- Users must be able to define an overall monthly budget.

- Users should also be able to set spending limits per category.

- The app should notify users when they approach or exceed budget limits.

- A visual indicator should be present on the dashboard to track remaining budget.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

6. Viewing a List of Expenses

- Users must be able to view all logged expenses for a selected period.

- Filters should allow users to sort expenses by category, date range, or amount spent.

- Users should be able to search expenses by keyword.

- If a receipt photo was attached, users must be able to view and zoom into the image.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

7. Viewing Total Amount Spent per Category

- Users must be able to view total spending grouped by category over a selectable period (weekly, monthly, yearly).

- A breakdown must be provided showing percentages per category.

- Overspending categories should be highlighted visually.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

8. Local Database Storage

- All expense data must be stored in a local database for offline access.

- The database should be optimized for fast retrieval and filtering.

- Security measures should include data encryption to protect financial records.

- Data should be stored in a way that allows easy exporting and importing if users need backups.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

9. Graph for Daily Spending Trends

- The app must display a visual spending graph that shows daily spending trends.

- The graph should be interactive, allowing users to hover over days for detailed expense breakdowns.

- Users should be able to toggle views between daily, weekly, monthly, and yearly trends.

- The graph should help users identify peak spending periods and adjust their budget accordingly.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

10. Progress Dashboard

- A dashboard should summarize the user's financial progress.

- It should display:

- Total spending for the month

- Budget status and remaining balance

- Warnings for overspending categories

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

11. Gamification with Rewards and Badges

- Users can earn badges and rewards for:

- Logging expenses consistently (daily/weekly streaks)

- Staying within their budget for a full month

- Achieving a certain amount of savings

- Example badges:

- "Budget Guru" - Sticking to a budget for three months

- "Expense Tracker" - Logging expenses daily for a month

- Rewards could include discounts on premium features or customizable UI themes.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

12. Online Database for Multi-Device Access

- Users must have the option to store data in an online database.

- Data synchronization should be secure and encrypted.

- Users should be able to access their budget from multiple devices.

- If offline, the app must sync automatically once internet access is restored.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

13. Currency Selection

- Users should be able to set their preferred currency.

- The app must support multiple currencies, adjusting expense records accordingly.

- Currency conversion rates should be fetchable from an API for real-time adjustments.

- This feature benefits frequent travellers or users managing multiple income sources.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

14. Streak System

- A streak system should encourage users to log expenses consistently.

- Streaks should be tracked on a daily and weekly basis.

- Users earn incentives (badges, rewards) for maintaining streaks.

- Streak progress should be displayed on the dashboard.

(Yasin, 2021). (T4Tutorials.com, 2022).

(Bright Infonent, 2024).

15. Budget Quiz

- The app should include an interactive budgeting quiz.

- Questions should educate users on financial management, smart spending, and savings strategies.

- Users should receive scores and explanations for incorrect answers.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

16. Budget Reminders

- Notifications should alert users to:

- Log daily expenses

- Check their budget status

- Review financial progress

- Users should have the option to disable or snooze notifications.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

17. Expense Reports and Analytics

- The app should generate charts and graphs showing:

- Spending patterns over time

- Category-wise distribution

- Month-over-month financial comparisons

- Reports should be exportable to PDF or CSV for easy sharing or record-keeping.

(Yasin, 2021). (T4Tutorials.com, 2022). (Bright Infonent, 2024).

UI Design:

1. Login & Register page

(Phillipp Lackner, 2020).

Description:

Allows user to get into app by entering their email address and password if they have registered by clicking Login. If they don't have an account, they will click the link "I don't have an account" which will direct them to the register page will they will fill in the edit boxes with their information and click done to have it saved. Once saved the user can login.
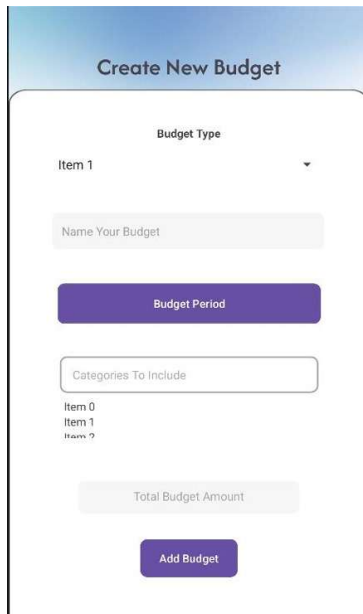
2. Home
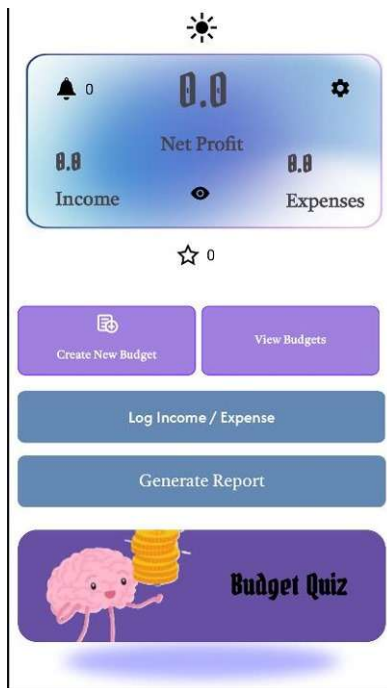
(Phillipp Lackner, 2020).

Description:

Allows user to navigate the multiple functionalities of the app while letting them see an overview of their expenses, income and how much money they have to spend if they wish to. The user can see notifications, edit the mode in terms of day and light as well as hide the funds displayed. Theres multiple buttons that direct user to the main functions of the app.

3. Create New Budget

(Phillipp Lackner, 2020).

Description:
Allows user to create and set a budget. The user can pick the budget type from the spinner or they can create their own custom budget if they wish to. They use the edit box to name their budget. They will have the option to select the period they want their budget to last with the budget period. The will be able to search the categories they want to include or create their own. Finaly they will set the budget amount and add the budget.

4. View Budgets
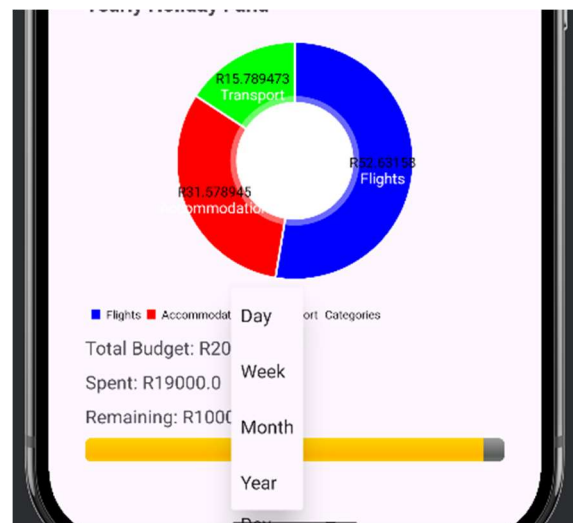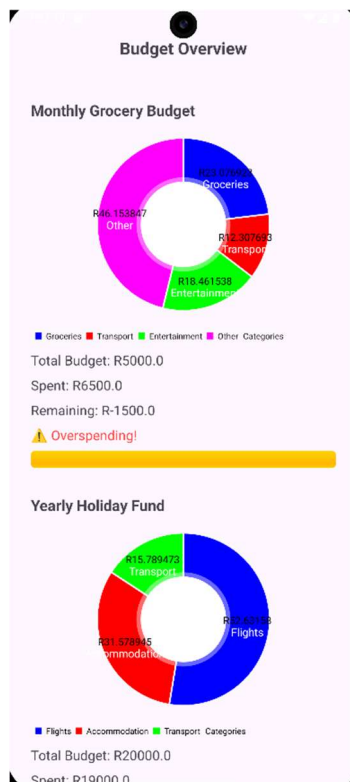
(Phillipp Lackner, 2020).

Description:

User can view the progress of the budgets they have created. The use the spinner to set the time period they want to check their budget for. Pie chart categorizes the different categories of expenses listed by user and how much went to it. There is a progress bar that lets user know how close they are to their limit.

5. Log Expense/Income

(Phillipp Lackner, 2020).

Description:

Allows user to enter an income or expense they have encountered. Theres a toggle button, when clicked it will switch either an expense or income depending on what the user wants to log. The user will then enter the amount of the transaction the edit box. The spinner will be for user to pick the category of which the transaction falls under. The user will have to provide context for further detail. They can the optionally add a picture of a receipt for proof. The second spinner lets user pick what how the transaction was done (Cash, debit, credit). Lastly user needs to select the date the transaction took place. User hits done button to log transaction.
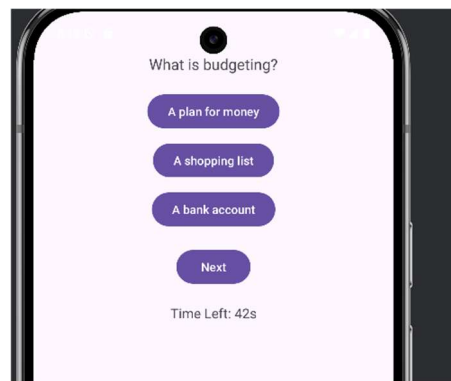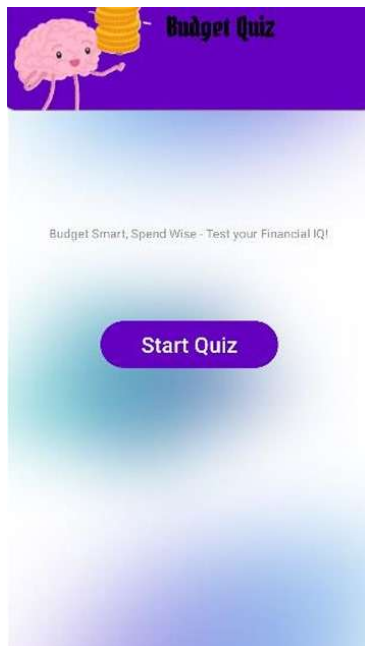
6. Generate report

(Phillipp Lackner, 2020).

Description:
Allows user to see all past transaction as well as what their status is in terms of meeting their budget goals. This page allows user to see more intricate details in terms of their spending under expense breakdown.
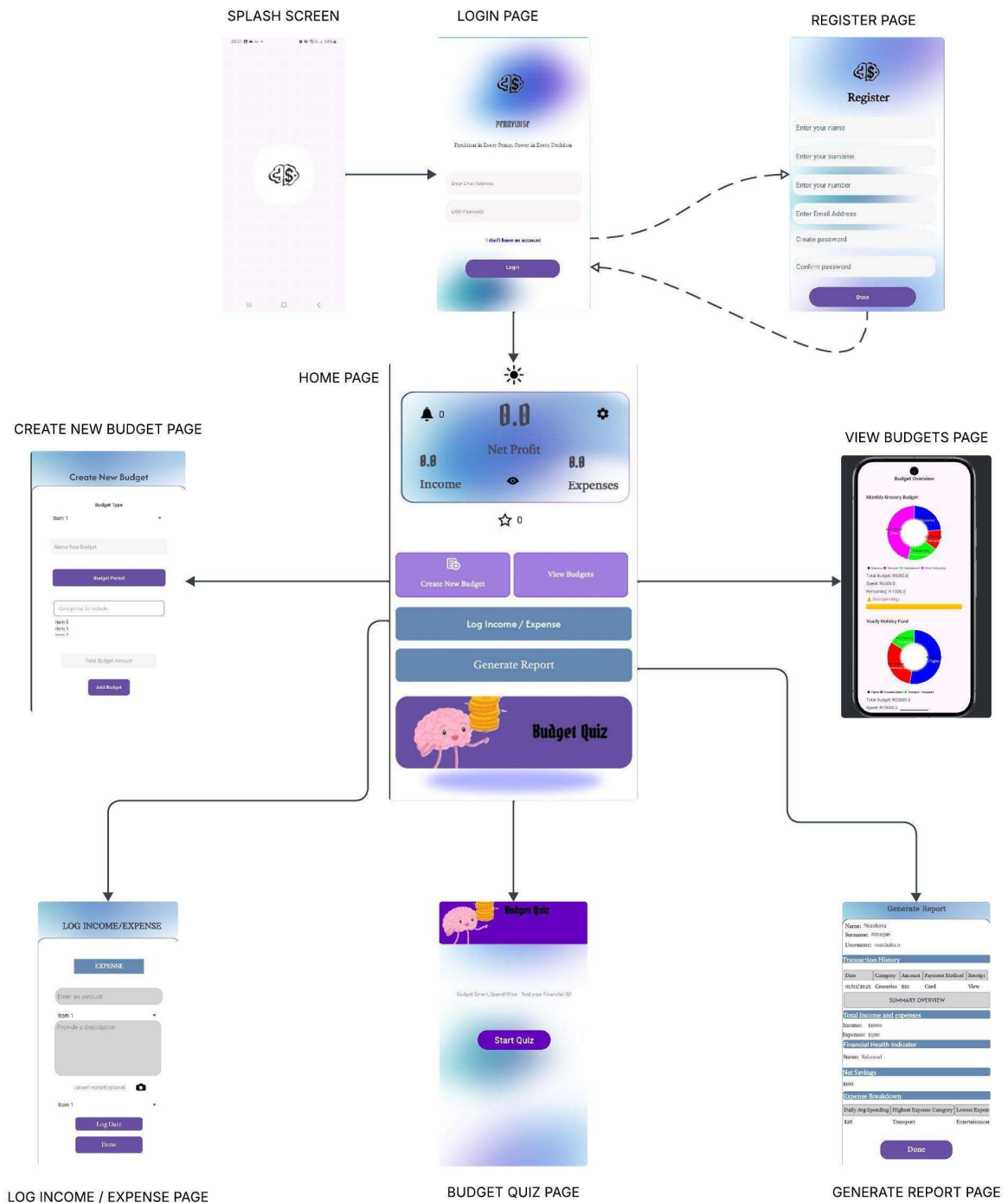
7. Budget quiz

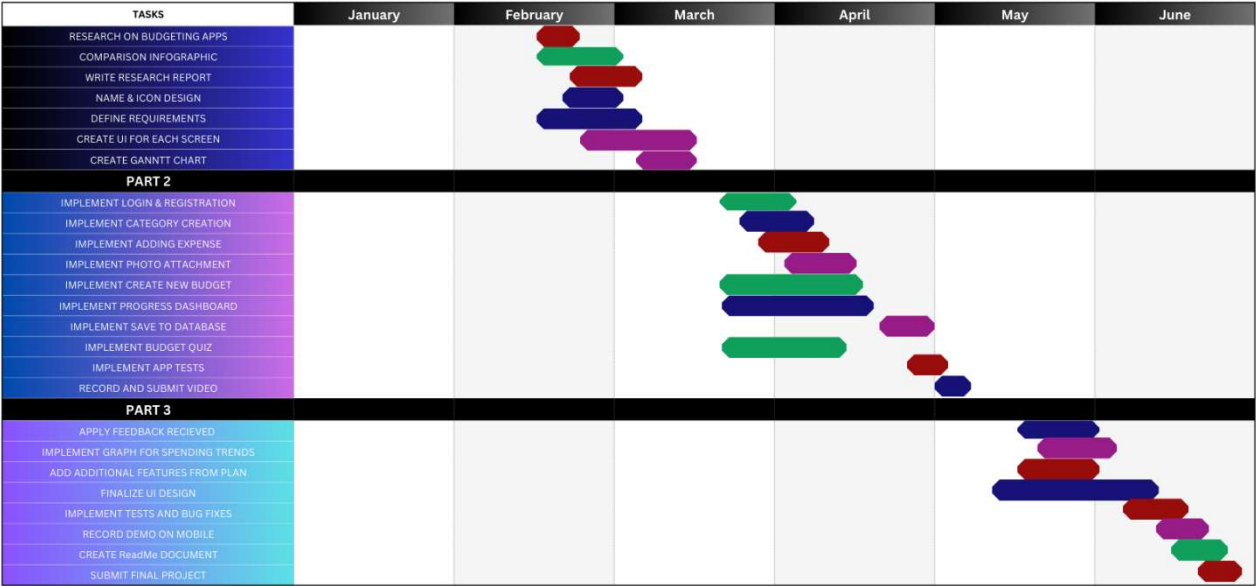(Phillipp Lackner, 2020).

Description:
Allow the users to have a little fun while learning more about budgeting and being wise about their money. Once start button is clicked user will have limited time to answer 15 questions in a multiple-choice style test. User score will be stored and can earn badges for getting good score in fast time.

Navigation Diagram:

SPLASH SCREEN

LOGIN PAGE

REGISTER PAGE

HOME PAGE

CREATE NEW BUDGET PAGE

VIEW BUDGETS PAGE

LOG INCOME / EXPENSE PAGE

BUDGET QUIZ PAGE

GENERATE REPORT PAGE

Project Plan:

(TechTraverse Tips, 2023).

Conclusion:

The prototype for the Personal Budget Tracker App, PennyWise, has been created based on detailed research, planning, and design to make sure it is user-friendly and useful. Market research included looking at three existing budget tracking apps to find their strengths and weaknesses. This will help improve our project and add features that are easy to use and effective.

Simple UI mock-ups and diagrams have been made to show how users will interact with the app, ensuring an easy and understandable experience. Also, a clear project timeline, shown in a Gantt Chart, keeps the development process organized.

With the planning and design stages done, the next step is building and testing the app. By focusing on ease of use, personalization, and automation, the app aims to give users a helpful tool to better manage their finances.

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