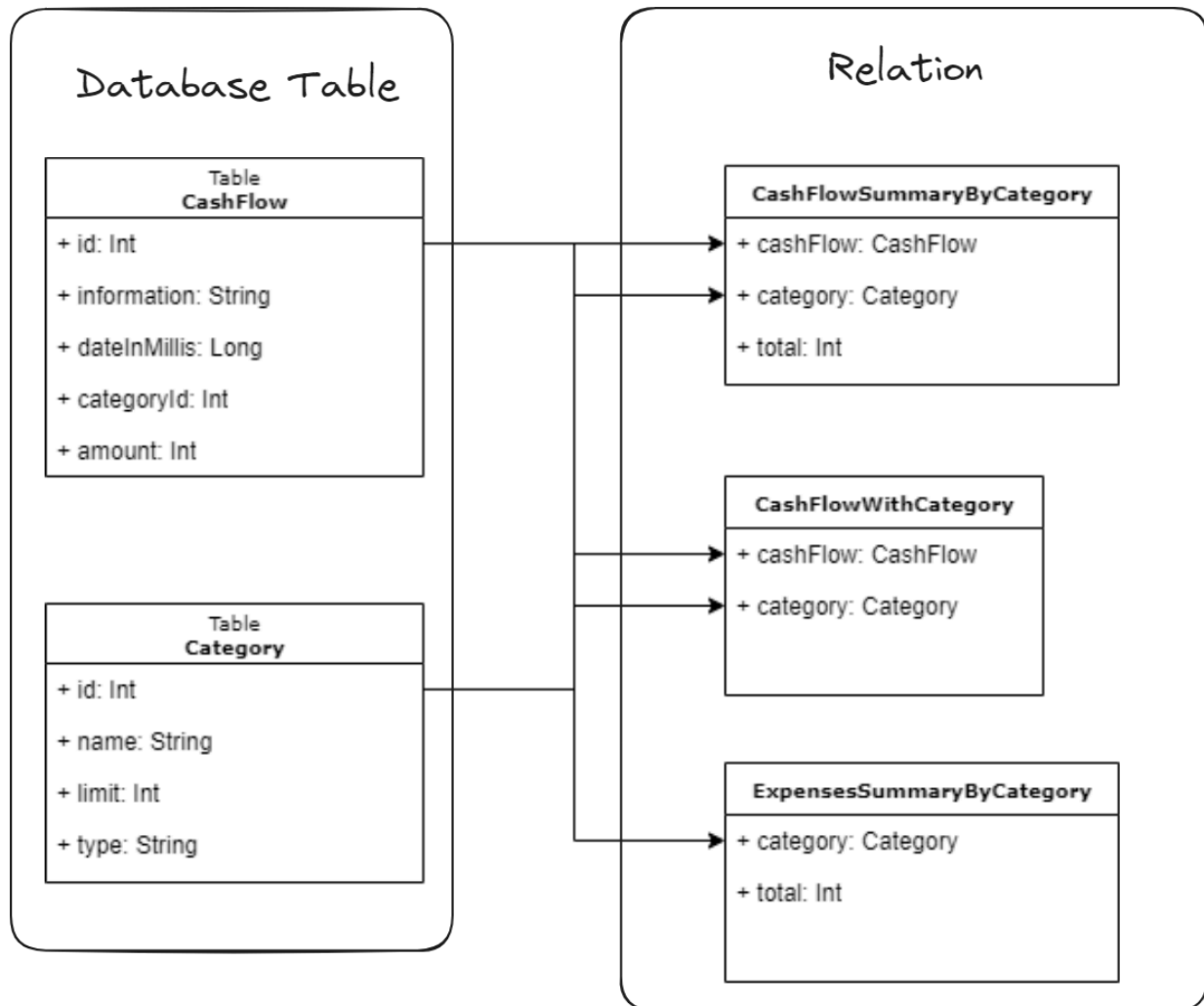# Project Overview

The application you will develop is a daily management tool for users' cash flow. Simply put, the app allows users to record their income and expenses, enabling them to track their finances in real-time.

The application will offer several features to provide users with up-to-date financial information. Users will be able to record cash flows, view all recorded cash flows filtered by type (expense or income), and see their total expenses within specific categories along with the ability to view all the recorded expenses in that category. Moreover, the app's key feature is a notification system that alerts users when they exceed the spending limit in any category after adding a new expense. Additionally, the application will provide users with the option to display notifications and view the app in dark mode.

You will develop these features for the app using the provided starter project. The Readme file on the starter project provides detailed instructions. Note: Any improvisation, enhancement, or addition of new features that are not asked for is not needed here.

You will need to have a good understanding of all the features to do the exam. To understand the project further, please review the application database and user interface (UI) below and implement them in the project.

Application Database

Above is an overview of the application's database tables and their relationships. In our Android application project, each table and relationship will be represented by a data class. Here are the details for each data class.

- **CashFlow**

    The CashFlow data class records user income and expenses. Here is an example of a CashFlow object.

CashFlow				
id	information	dateInMillis	categoryId	amount
4	Fried Rice	1717488000000	2	15000

5	Job Salary	1717574400000	1	5000000

- **Category**

  The Category data class represents a category option that users can choose when recording their cash flow. Note that the records on the Category table are **pre-populated when the database is created**. Here are examples of Category objects.

Category			
id	name	limit	type
1	Income	0	Income
2	Food	1500000	Expense

- **CashFlowWithCategory**

  The CashFlowWithCategory data class represents a relation between the CashFlow and the Category table using the Room Relation annotation. This data class will be used to show all records created in a category. Here is an example of a CashFlowWithCategory object.

CashFlowWithCategory								
cashflow					category			
id	information	dateInMillis	categoryId	amount	id	name	limit	type
4	Fried Rice	1717488000000	2	15000	2	Food	1500000	Expense
5	Job Salary	1717574400000	1	5000000	1	Income	0	Income

- **CashFlowSummaryByCategory**

  The CashFlowSummaryByCategory data class represents a relation between the CashFlow and the Category table using the Room Relation annotation with the addition of total attribute to sum up each record created in that category. Here is an example of a CashFlowSummaryByCategory object.

CashFlowSummaryByCategory

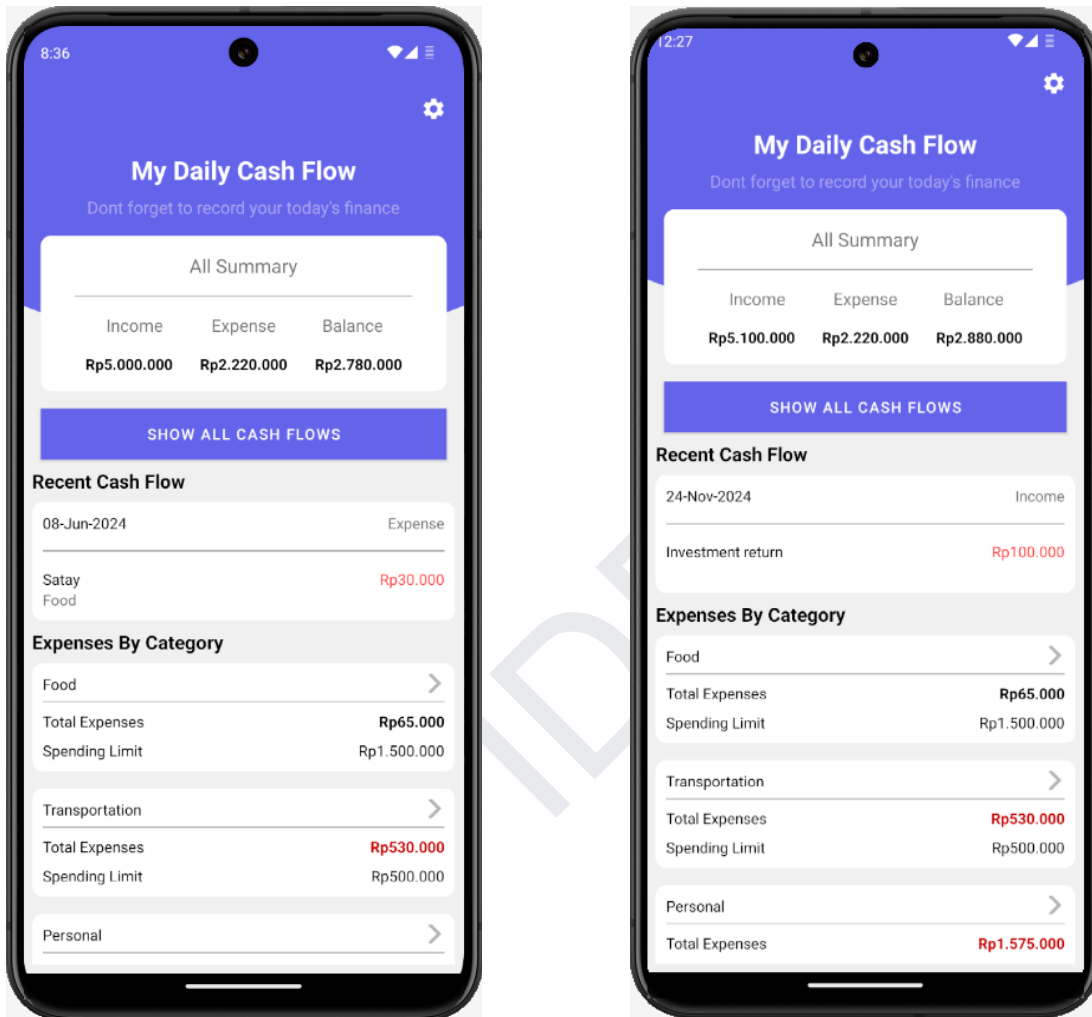| cashflow					category				total
id	information	dateInMillis	categoryId	amount	id	name	limit	type	
4	Fried Rice	1717488000000	2	15000	2	Food	1500000	Expense	65000
6	Jogja train tickets	1717660800000	3	330000	3	Transportation	500000	Expense	530000

● **ExpensesSummaryByCategory**

The ExpensesSummaryByCategory data class represents a relation between the CashFlow and the Category table **using a predefined SQL Query**. This data class will be used to get the expense summary of each category.

ExpensesSummaryByCategory				
category				total
id	name	limit	type	
2	Food	1500000	Expense	65000
3	Transportation	500000	Expense	530000

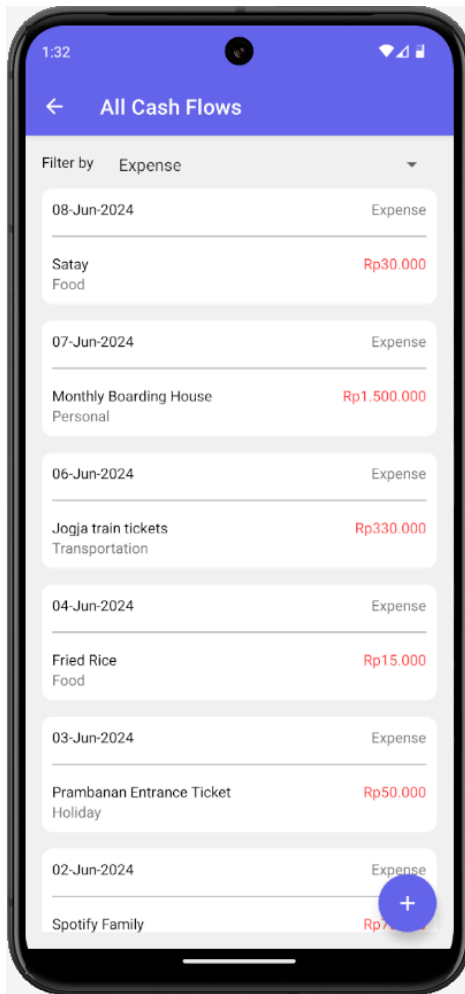# Application User Interface (UI)

Home Screen

- AllSummarySection:
  - Income
    - TextView (R.id.text_income_home)
  - Expense
    - TextView (R.id.text_expense_home)
  - Balance
    - TextView (R.id.text_balance_home)
- Setting:
  - ImageButton (R.id.btn_setting)
- Show All Cash Flows:

- ○ Button (R.id.btn_all_cashflows)
- ● Recent Cash Flow
  - ○ Date
    - ■ TextView (R.id.text_date)
  - ○ Type
    - ■ TextView (R.id.text_type)
  - ○ Information
    - ■ TextView (R.id.text_information)
  - ○ Category (**Note**: Only displayed for cashflow record of type Expense)
    - ■ TextView (R.id.text_category)
  - ○ Amount
    - ■ TextView (R.id.text_price)
- ● Expenses By Category Section
  - ○ List:
    - ■ RecyclerView (R.id.recyclerview_expenses_by_category)
    - ■ List item:
      - ● Category
        - ○ TextView (R.id.text_category)
      - ● To List Expenses
        - ○ ImageButton (R.id.ic_arrow)
      - ● Total Expenses
        - ○ TextView (R.id.text_total_expenses)
      - ● Spending Limit
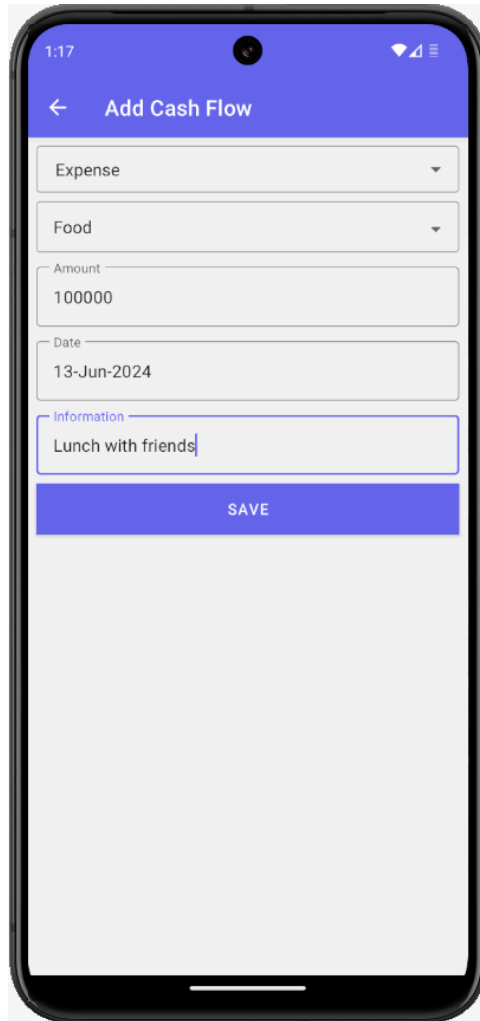   - ○ TextView (R.id.text_limited)

All Cash Flows Screen

- Up Navigation Button:
  - Navigate to the Home Screen
- Filter Item List
  - Spinner (R.id.spinner_filter)
- List:
  - RecyclerView (R.id.recyclerview_cashflows)
  - List Item:
    - Date
      - TextView (R.id.text_date)
    - Type
      - TextView (R.id.text_type)
    - Information
      - TextView (R.id.text_information)
    - Category
      - TextView (R.id.text_category)
    - Amount

- TextView (R.id.text_price)
- Add Cash Flow
  - Floating Action Button (FAB) (R.id.fab_add)
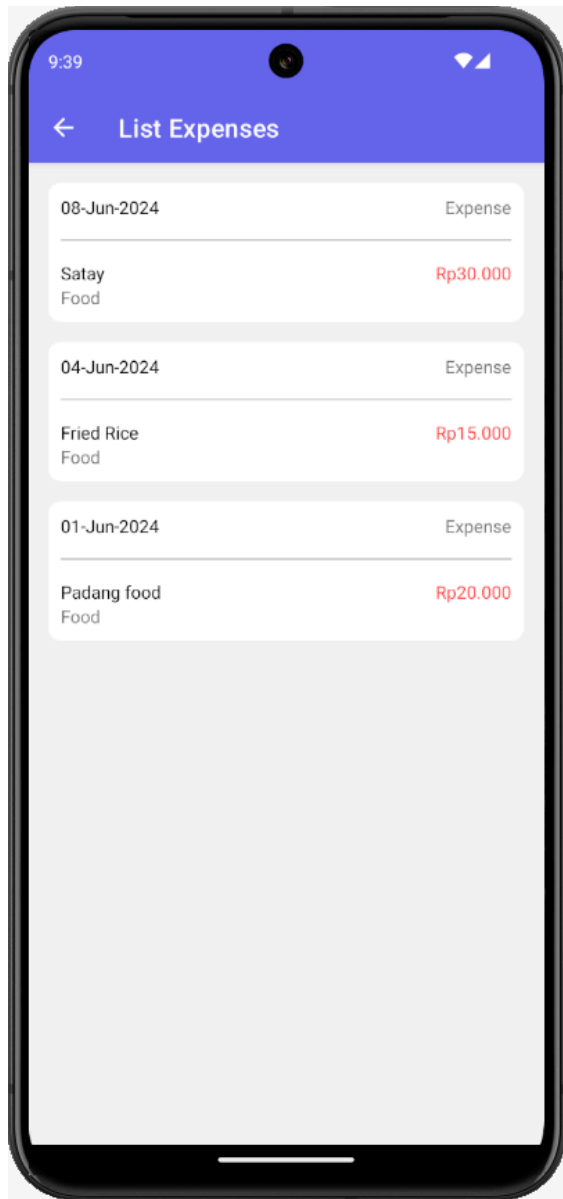
Add Cash Flow Screen

- Up Navigation Button :
  - Navigate to the All Cash Flows Screen
- Input:
  - Type
    - Spinner (R.id.spinner_type)
      - Entries: @array/list_type
      - Margin: 8dp
      - Background: @drawable/background_spinner
  - Category
    - Spinner (R.id.spinner_category)

- Margin: 8dp
- Padding: 0dp
- Background: @drawable/background_spinner
- Note: The option values are Category with the type of "Expense" and must be retrieved by querying the database.
  - ○ Amount
    - ■ TextInputLayout (R.id.textfield_amount)
      - Style= @style/Widget.MaterialComponents.TextInputLayout.OutlinedBox
      - Margin: 8dp
      - Hint: @string/amount
    - ■ TextInputEditText (R.id.ed_amount)
      - Input Type: number
  - ○ Date
    - ■ TextInputLayout (R.id.textfield_date)
      - Style= @style/Widget.MaterialComponents.TextInputLayout.OutlinedBox
      - Margin: 8dp
      - Hint: @string/date
    - ■ TextInputEditText (R.id.ed_date)
      - Cursor visible: false
      - Focusable: false
      - Focusable in touch mode: false
      - On click: showDatePicker
  - ○ Information
    - ■ TextInputLayout (R.id.textfield_information)
      - Style: @style/Widget.MaterialComponents.TextInputLayout.OutlinedBox
      - Margin: 8dp
      - Hint: @string/information
    - ■ TextInputEditText (R.id.ed_information)
- Save
  - ○ Button (R.id.btn_save)
    - ■ Margin: 8dp
    - ■ Background: @color/colorPrimary
    - ■ Text: @string/save
    - ■ Text color: @color/white
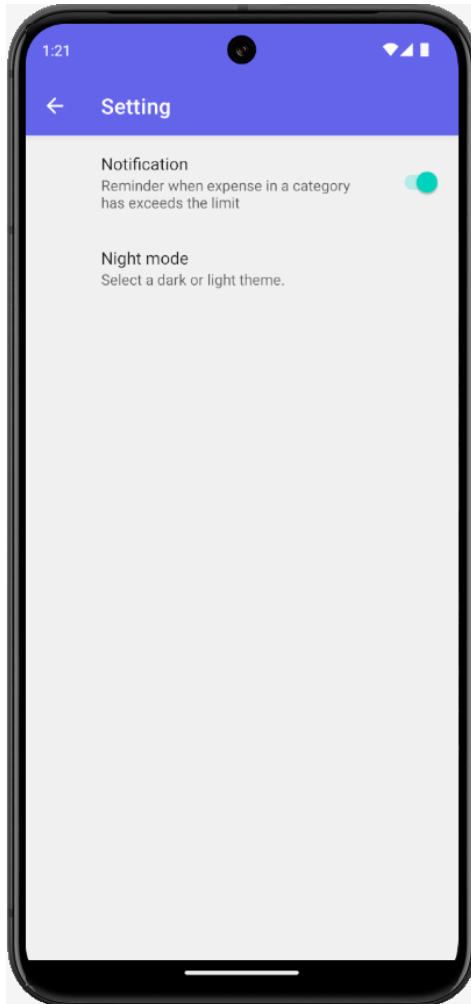
List Expenses By Category Screen

- Up Navigation Button :
    - Navigate to the Home Screen
- List Item:
    - Date
        - TextView (R.id.text_date)
    - Type
        - TextView (R.id.text_type)
    - Information
        - TextView (R.id.text_information)
    - Category

- - ■ TextView (R.id.text_category)
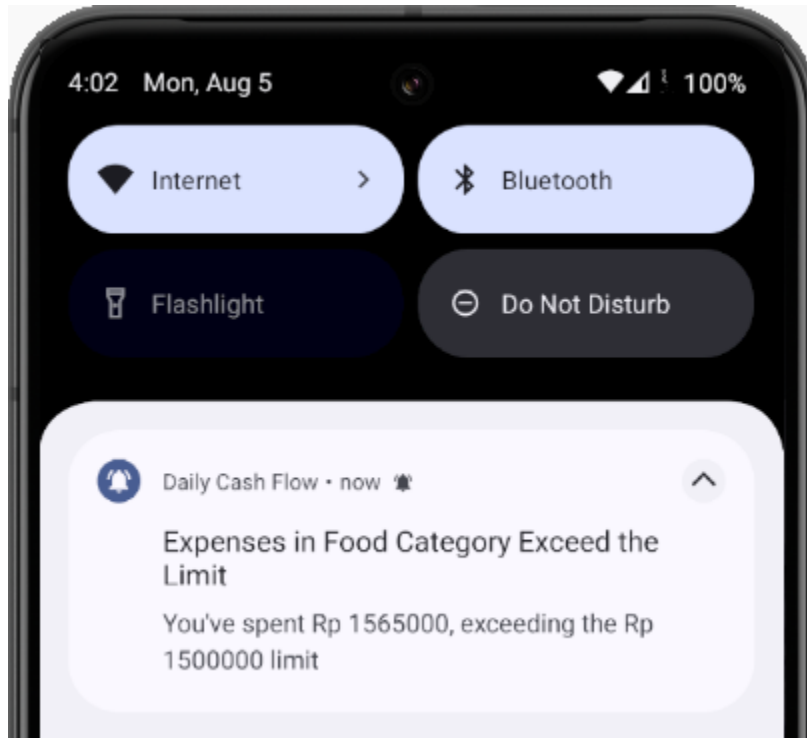   - ○ Amount
      - ■ TextView (R.id.text_price)

Setting Screen

- ● Up Navigation Button :
  - ○ Navigate to the All Cash Flows Screen
- ● Setting Preference:
  - ○ Reminder Notification
    - ■ SwitchPreference
      - ● Preference key: key_notification
      - ● Default value: false
  - ○ Night mode
    - ■ ListPreference
      - ● Option Value: Automatic, Night mode, Light mode

Notification

- Small icon: R.drawable.ic_notification
- Content title: R.string.notify_title
- Content text: R.string.notify_content