MID EXAM

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Class: IT Class 2

1. Application Description

Money Manager is a personal finance tracking web application that helps users manage their income, expenses. The application allows users to create a track for daily transactions, categorize them, and view financial summaries, empowering them to make better budgeting decisions.

Features:

Data List

- Overview of total income, expenses, and balance

Add Data

- Add new income or expense entries
- Assign category (Food, Transport, Category, etc)
- Set transaction date

Analytics

- Pie chart breakdown of spending by category

2. Frontend

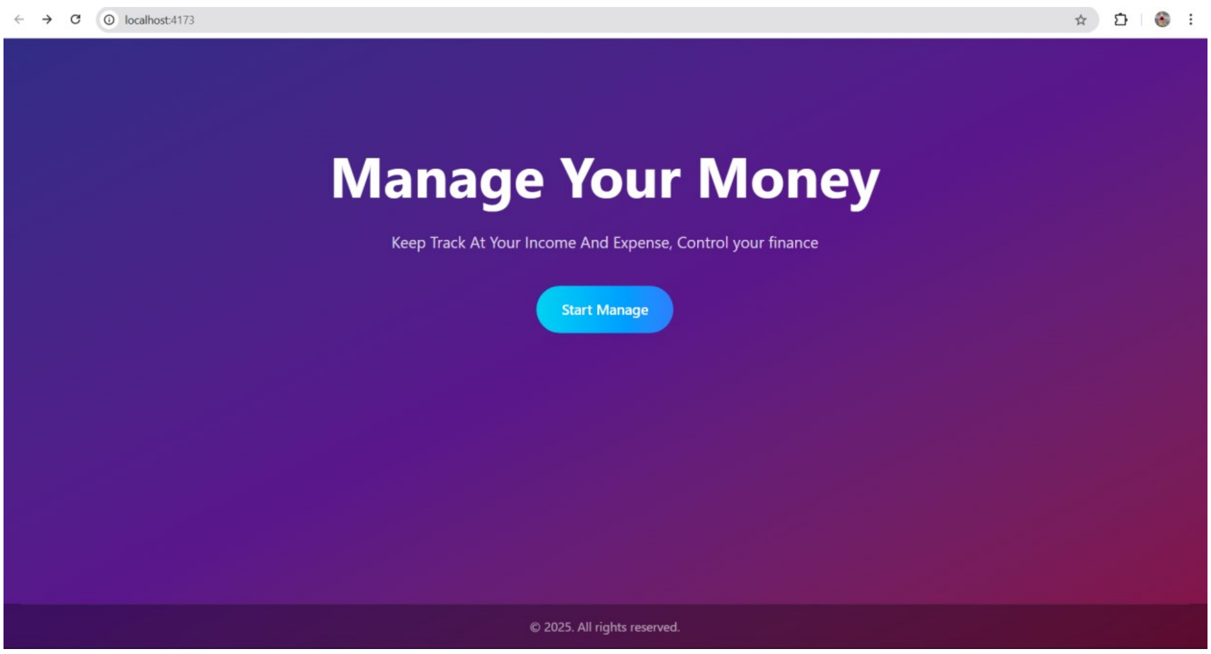
Library used: React, Tailwind CSS

Main function:

UI Pages:

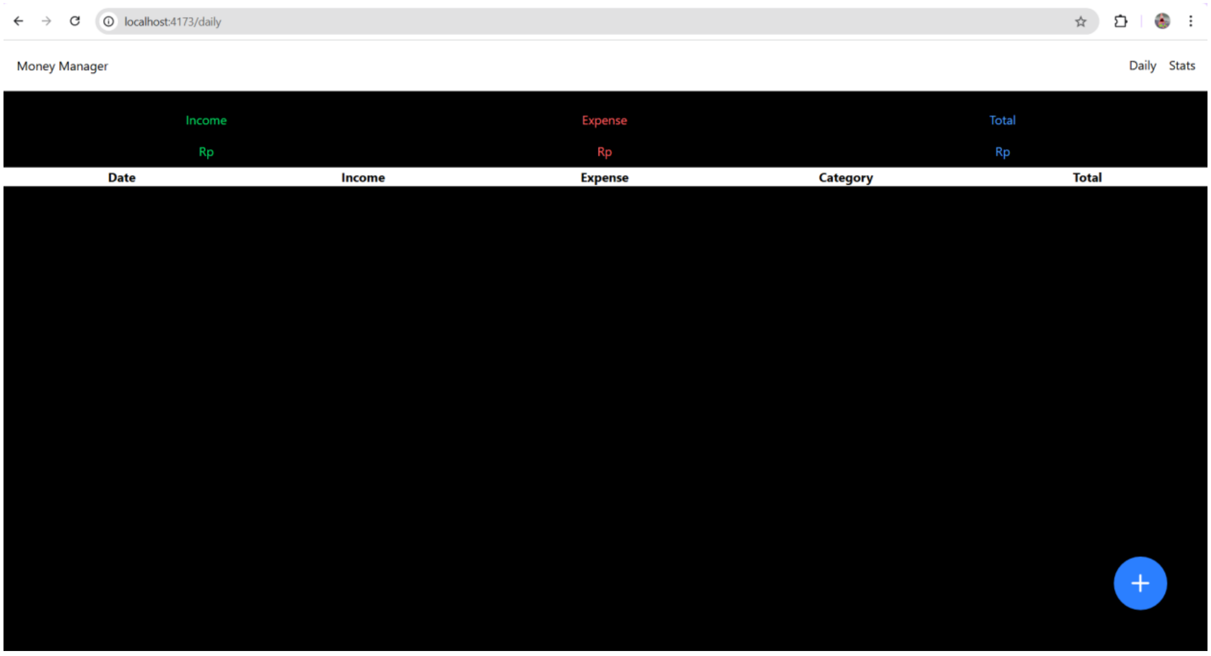
1. Landing Page

This is a landing page where the function is to serve as the entry point of the application, giving a simple interface with a simple description about the application and a button that directs users to the dashboard.

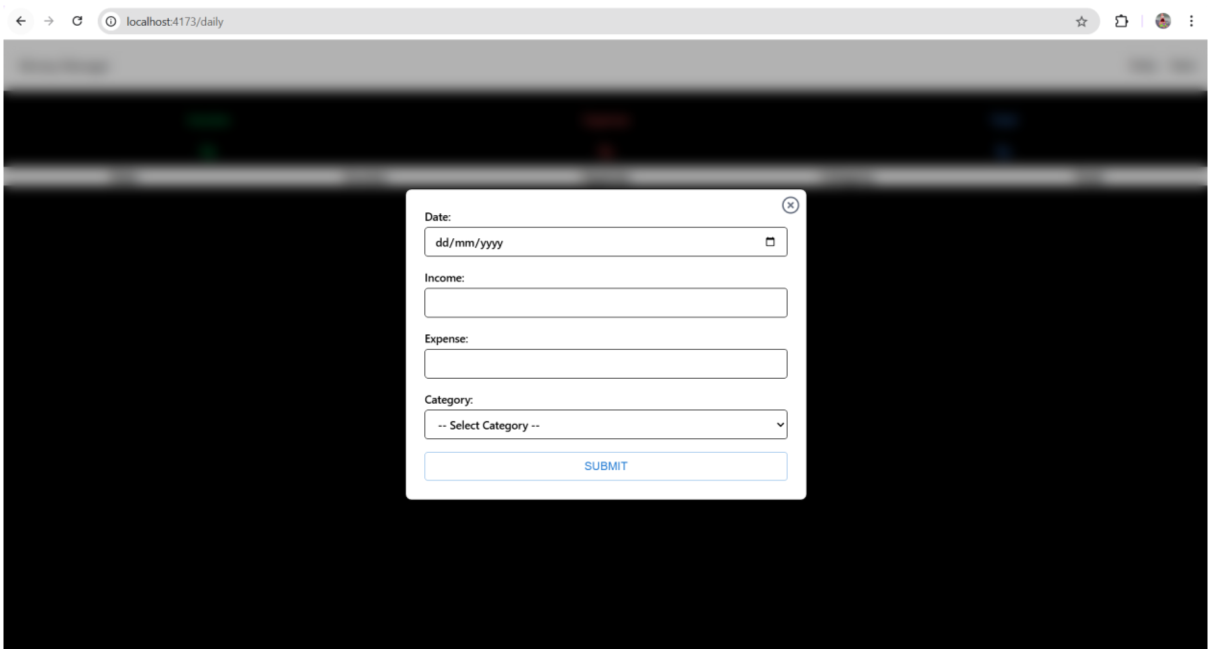

localhost:4173
Manage Your Money
Keep Track At Your Income And Expense, Control your finance
Start Manage
© 2025. All rights reserved.

2. Main Page / DataList Page

In this page, user can add their data to track their income and expenses for a specific day. This page will serve the data based on the user input and calculate the total income, expense, and the total after subtraction.

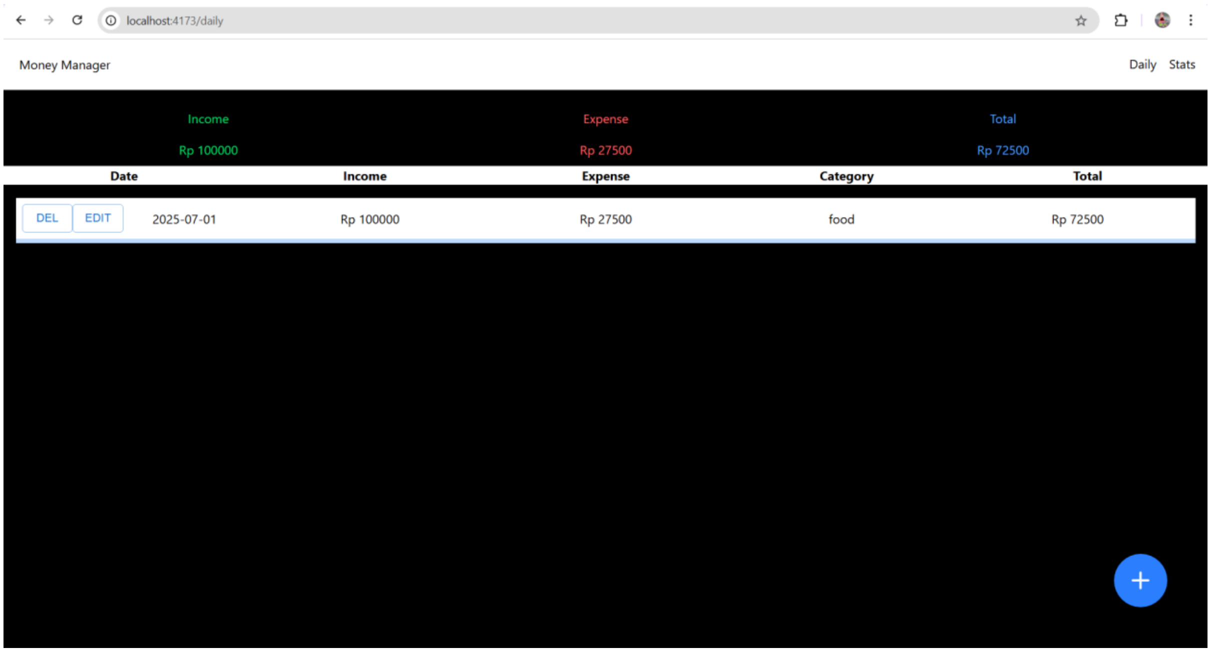


After clicking the plus button on the right below, an input form will appear on the screen, and the user can input their data.


localhost:4173/daily

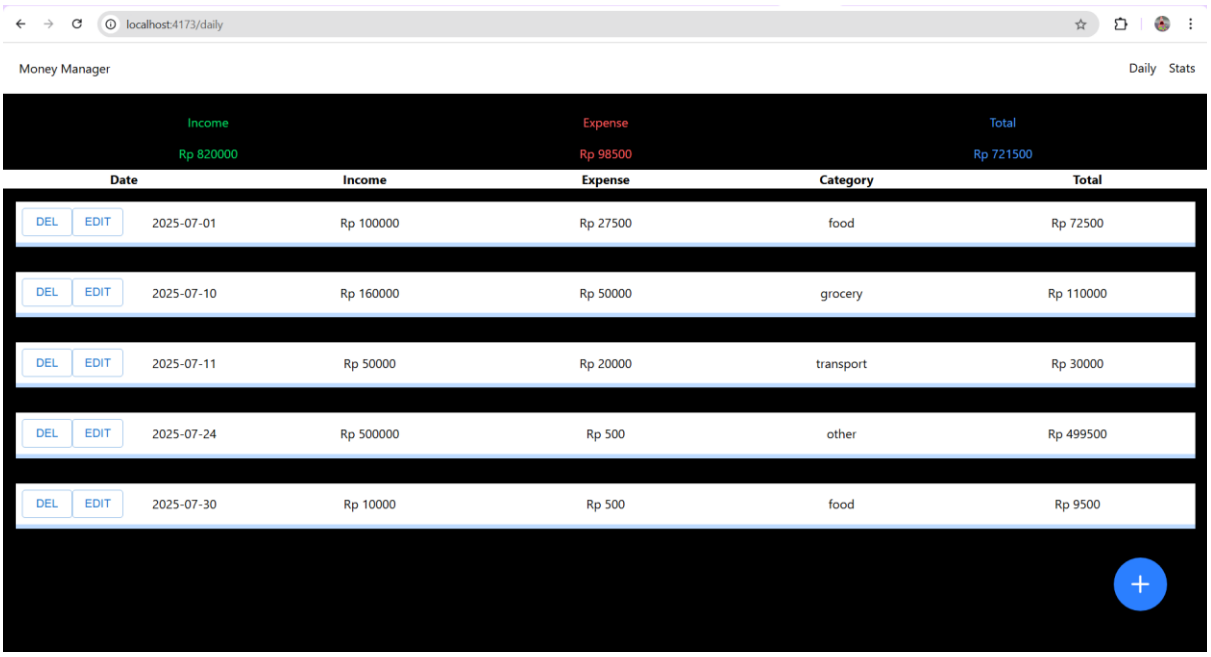
Date: dd/mm/yyyy
Income:
Expense:
Category: -- Select Category --

After the user has input, the data will be displayed on the page. Where the list is provided with an edit and delete button. If the user wants to edit the data, they user can click the edit button. If the user wants to delete the data, they user can click the delete button.


localhost:4173/daily

Income	Expense	Total
Rp 100000	Rp 27500	Rp 72500

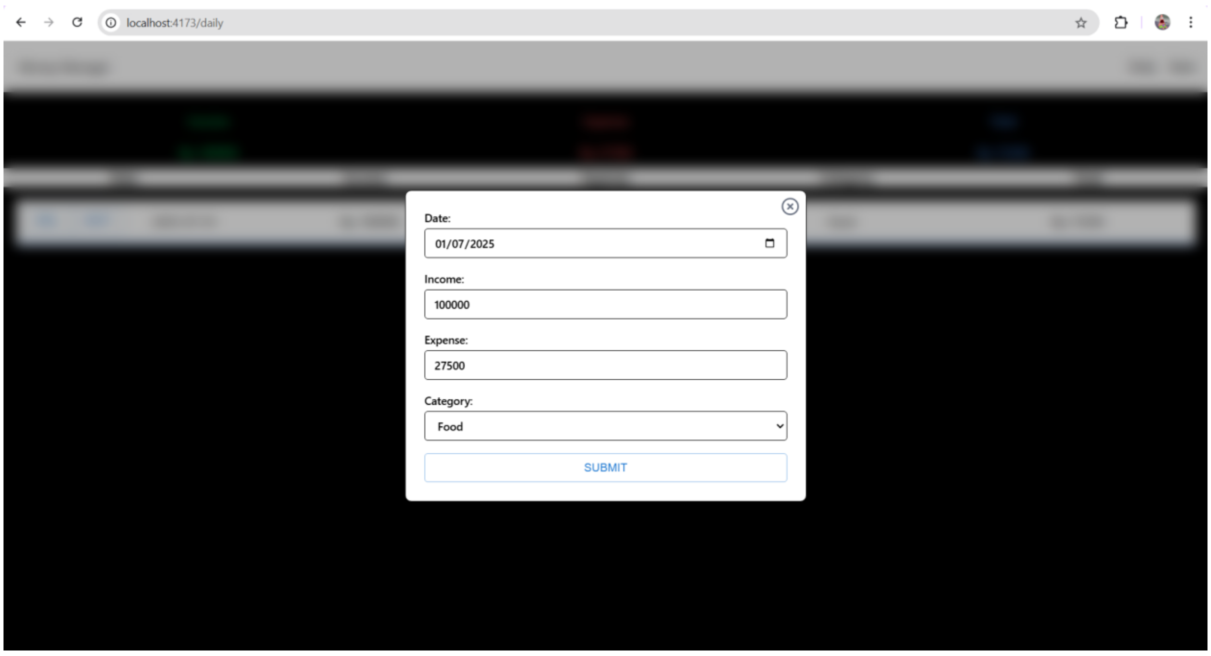
	Date	Income	Expense	Category	Total
DEL EDIT	2025-07-01	Rp 100000	Rp 27500	food	Rp 72500



	Income	Expense	Total
	Rp 820000	Rp 98500	Rp 721500

	Date	Income	Expense	Category	Total
DEL EDIT	2025-07-01	Rp 100000	Rp 27500	food	Rp 72500
DEL EDIT	2025-07-10	Rp 160000	Rp 50000	grocery	Rp 110000
DEL EDIT	2025-07-11	Rp 50000	Rp 20000	transport	Rp 30000
DEL EDIT	2025-07-24	Rp 500000	Rp 500	other	Rp 499500
DEL EDIT	2025-07-30	Rp 10000	Rp 500	food	Rp 9500

User can edit the data by clicking the edit button.



Date: 01/07/2025

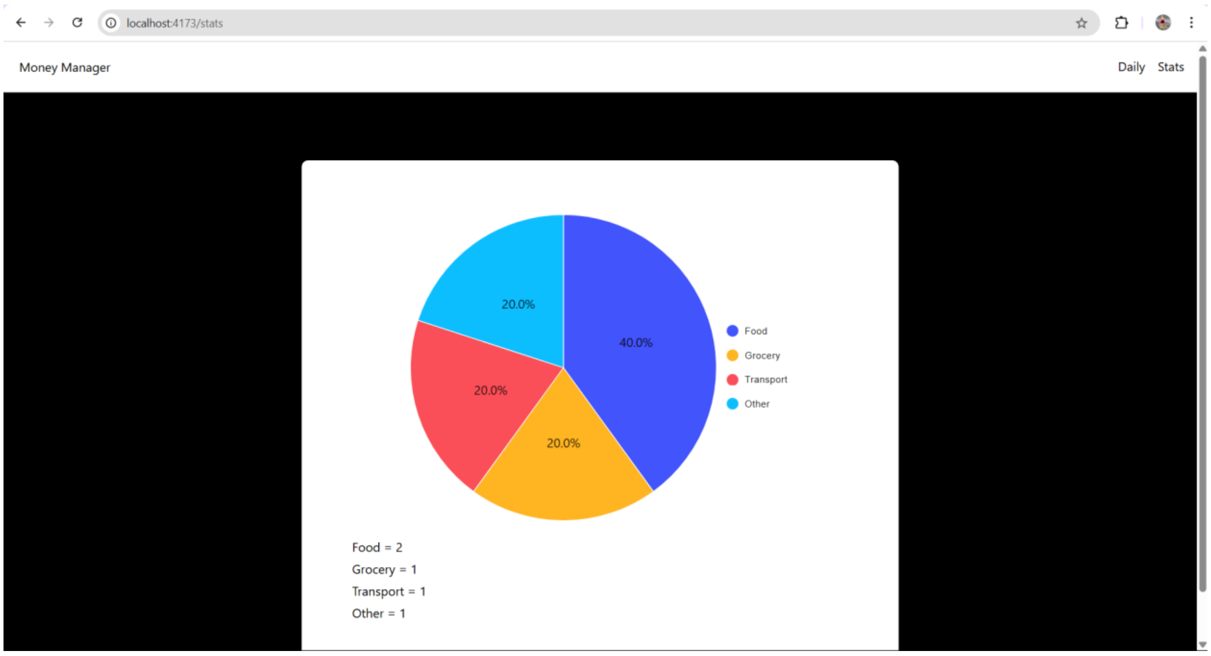
Income: 100000

Expense: 27500

Category: Food

3. Stats Page

This page serves users with a pie chart, where the chart is based on the user category data. This chart shows to user what things they spend their money on what things.



Food = 2
Grocery = 1
Transport = 1
Other = 1

3. Backend

language used: Go

API endpoint:

- /api/userData

The endpoint handles the data from the database, and sends the data to the frontend

- /api/getData

The endpoint handles data that is sent from the frontend, and inserts the data into the database

- /api/deleteData

Handle the delete data

- /api/editData

Handle data from the frontend, and use the data to update the database data

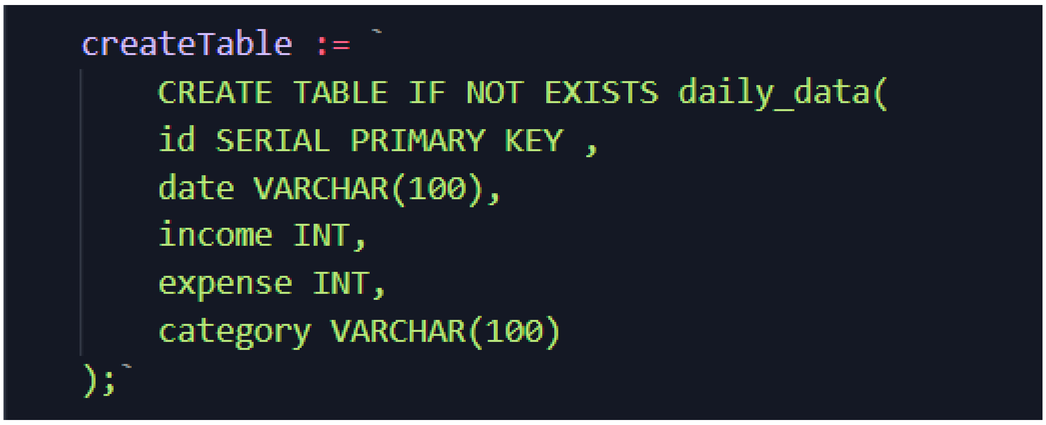
- /api/getData/total

Handle the total of income, expense, and total after subtraction

- /api/getCategory

Handle the pie chart data

Database Schema:

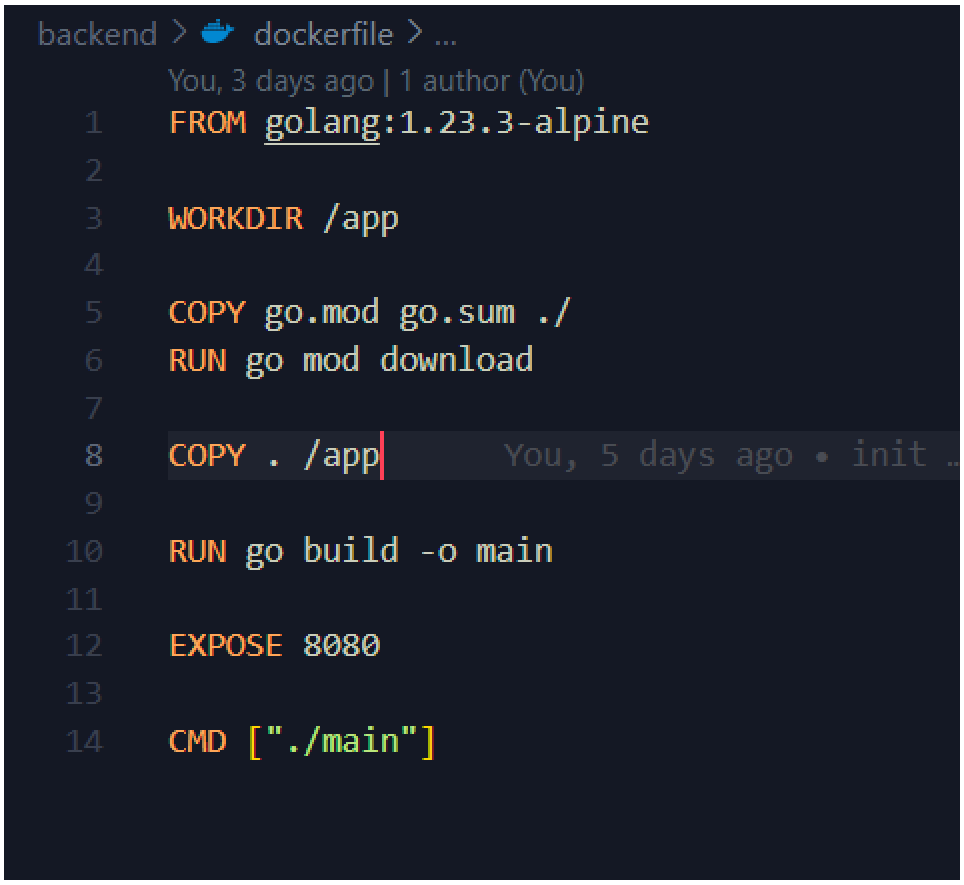


```
createTable := `
    CREATE TABLE IF NOT EXISTS daily_data(
    id SERIAL PRIMARY KEY ,
    date VARCHAR(100),
    income INT,
    expense INT,
    category VARCHAR(100)
);`
```

4. Deploying application using docker

1. Create dockerfile in both frontend and backend folder

backend dockerfile



backend > dockerfile > ...

You, 3 days ago | 1 author (You)

```
FROM golang:1.23.3-alpine

WORKDIR /app

COPY go.mod go.sum ./
RUN go mod download

COPY . /app        You, 5 days ago • init ..

RUN go build -o main

EXPOSE 8080

CMD ["./main"]
```

FROM: specify base images (use golang since the backend using go)

WORKDIR: set the working directory inside the container which is /app

COPY go.mod go.sum: copy all the dependencies in go module to working directory in the container

RUN go mod download: downloads all the dependencies that listed in go modules

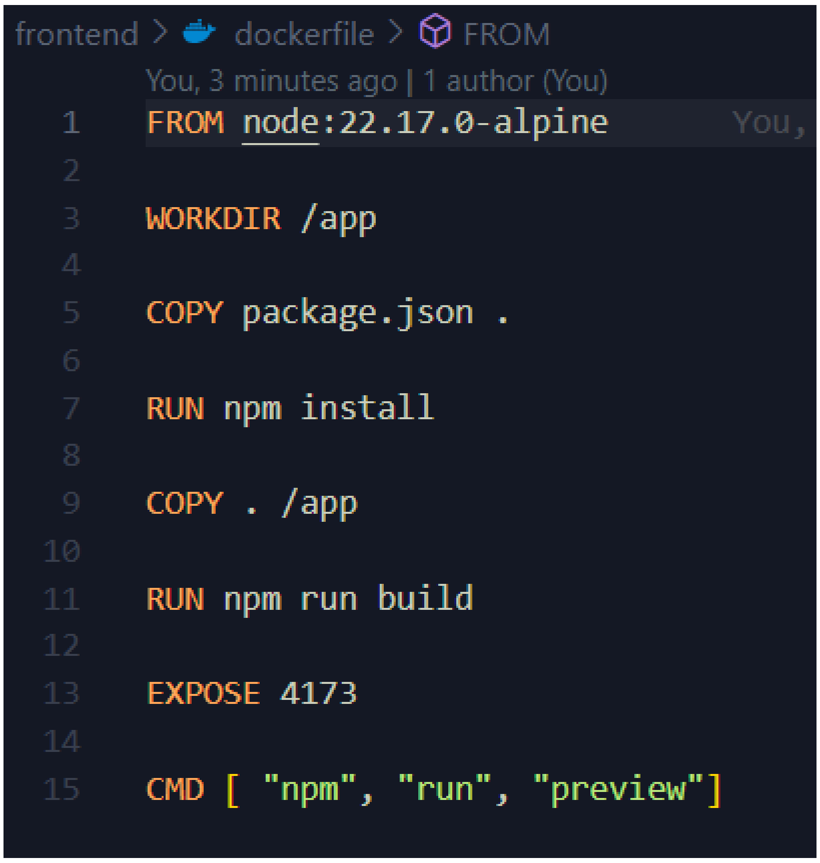
COPY . /app: copy all the file at the current directory to container working directory

RUN go build -o main: compiles go file

EXPOSE 8080: documents that the container listens on port 8080

CMD: start the backend server

frontend dockerfile


frontend > dockerfile > FROM
You, 3 minutes ago | 1 author (You)

```dockerfile
FROM node:22.17.0-alpine

WORKDIR /app

COPY package.json .

RUN npm install

COPY . /app

RUN npm run build

EXPOSE 4173

CMD [ "npm", "run", "preview"]
```

FROM: specify base images (using node since react relies on node.js)

WORKDIR: set the working directory inside the container which is /app

COPY package.json: copy all the dependencies to working directory in the container

RUN npm install: downloads all the dependencies that listed in package.json

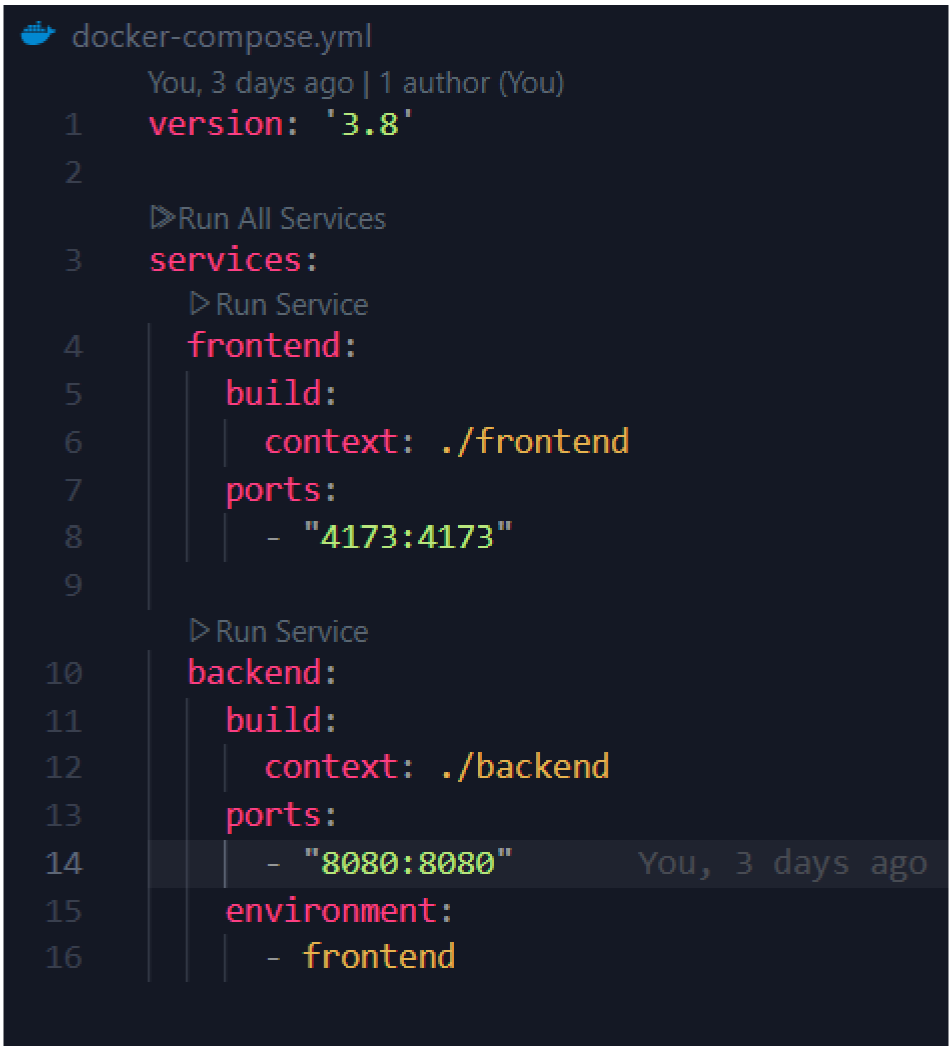
COPY . /app: copy all the file at the current directory to container working directory

RUN npm run build: compiles react file

EXPOSE 4173: documents that the container listens on port 4173

CMD: start the frontend server

2. Create docker-compose.yml in the root directory to manage the containers



```yaml
version: '3.8'

services:
  frontend:
    build:
      context: ./frontend
    ports:
      - "4173:4173"

  backend:
    build:
      context: ./backend
    ports:
      - "8080:8080"
    environment:
      - frontend
```

Version: specify the docker version

Services: define all the application container

Context: ./frontend = tells docker to build images based on the frontend dockerfile

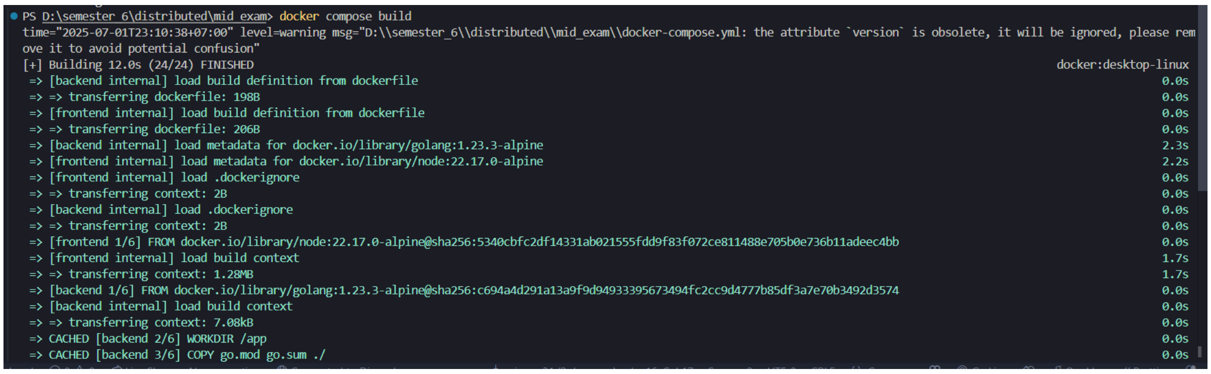
Port 4173: run the frontend server on port 4173

Context: ./backend = tells docker to build images based on the backend dockerfile

Port 8080: run the backend server on port 8080

3. Build the images using command “docker compose build” or directly run the container after build using command “docker compose up –build”

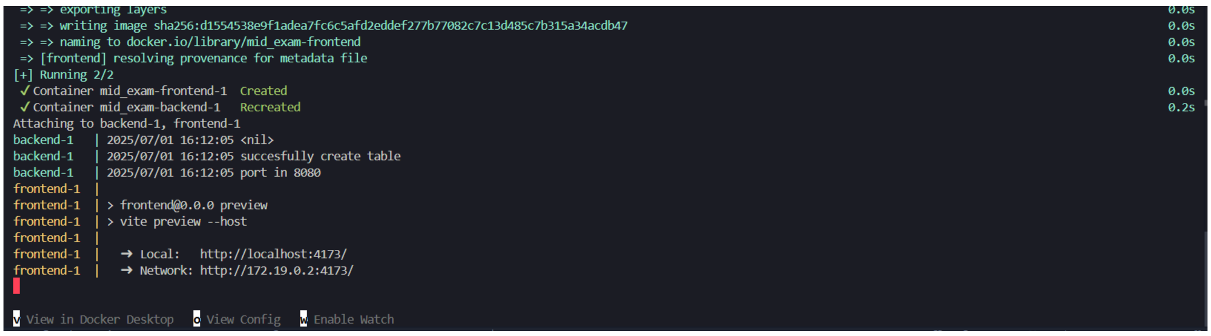
- Using docker compose build



```
● PS D:\semester_6\distributed\mid_exam> docker compose build
  time="2025-07-01T23:10:38+07:00" level=warning msg="D:\\semester_6\\distributed\\mid_exam\\docker-compose.yml: the attribute `version` is obsolete, it will be ignored, please rem
  ove it to avoid potential confusion"
  [+] Building 12.0s (24/24) FINISHED                                                                                              docker:desktop-linux
   => [backend internal] load build definition from dockerfile                                                                                    0.0s
   => => transferring dockerfile: 198B                                                                                                            0.0s
   => [frontend internal] load build definition from dockerfile                                                                                   0.0s
   => => transferring dockerfile: 206B                                                                                                            0.0s
   => [backend internal] load metadata for docker.io/library/golang:1.23.3-alpine                                                                 2.3s
   => [frontend internal] load metadata for docker.io/library/node:22.17.0-alpine                                                                 2.2s
   => [frontend internal] load .dockerignore                                                                                                      0.0s
   => => transferring context: 2B                                                                                                                 0.0s
   => [backend internal] load .dockerignore                                                                                                       0.0s
   => => transferring context: 2B                                                                                                                 0.0s
   => [frontend 1/6] FROM docker.io/library/node:22.17.0-alpine@sha256:5340cbfc2df14331ab021555fdd9f83f072ce811488e705b0e736b11adeec4bb            0.0s
   => [frontend internal] load build context                                                                                                      1.7s
   => => transferring context: 1.28MB                                                                                                             1.7s
   => [backend 1/6] FROM docker.io/library/golang:1.23.3-alpine@sha256:c694a4d291a13a9f9d94933395673494fc2cc9d4777b85df3a7e70b3492d3574            0.0s
   => [backend internal] load build context                                                                                                       0.0s
   => => transferring context: 7.08kB                                                                                                             0.0s
   => CACHED [backend 2/6] WORKDIR /app                                                                                                           0.0s
   => CACHED [backend 3/6] COPY go.mod go.sum ./                                                                                                  0.0s
```

- using docker compose up –build

Local deployment using docker is successfull



```
 => => exporting layers                                                                                                                          0.0s
 => => writing image sha256:d1554538e9f1adea7fc6c5afd2eddef277b77082c7c13d485c7b315a34acdb47                                                     0.0s
 => => naming to docker.io/library/mid_exam-frontend                                                                                             0.0s
 => [frontend] resolving provenance for metadata file                                                                                            0.0s
[+] Running 2/2
 ✓ Container mid_exam-frontend-1  Created                                                                                                        0.0s
 ✓ Container mid_exam-backend-1   Recreated                                                                                                      0.2s
Attaching to backend-1, frontend-1
backend-1   | 2025/07/01 16:12:05 <nil>
backend-1   | 2025/07/01 16:12:05 succesfully create table
backend-1   | 2025/07/01 16:12:05 port in 8080
frontend-1  |
frontend-1  | > frontend@0.0.0 preview
frontend-1  | > vite preview --host
frontend-1  |
frontend-1  |   ➜  Local:   http://localhost:4173/
frontend-1  |   ➜  Network: http://172.19.0.2:4173/

v View in Docker Desktop   o View Config   w Enable Watch
```