

Project information

Created on
February 24, 2026

Name	Last update
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 backend	1 week ago
 frontend	1 week ago
 nginx	1 week ago
 .gitignore	1 week ago
 LOAD_TEST.md	1 week ago
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 [README.md](#)

MoneyPilot

(Challenge task for module "Distributed Systems FS26")

Description

MoneyPilot is a comprehensive web application designed to track and analyze personal finances. It provides a secure, distributed platform for users to manage their financial data. Key features include:

- Secure user authentication (JWT via Secure HttpOnly cookies).
- Manual transaction entry or CSV import.
- Customizable expense and income categories.
- Interactive charts and dashboards to visualize financial flows and identify spending patterns.
- High availability and scalable infrastructure.

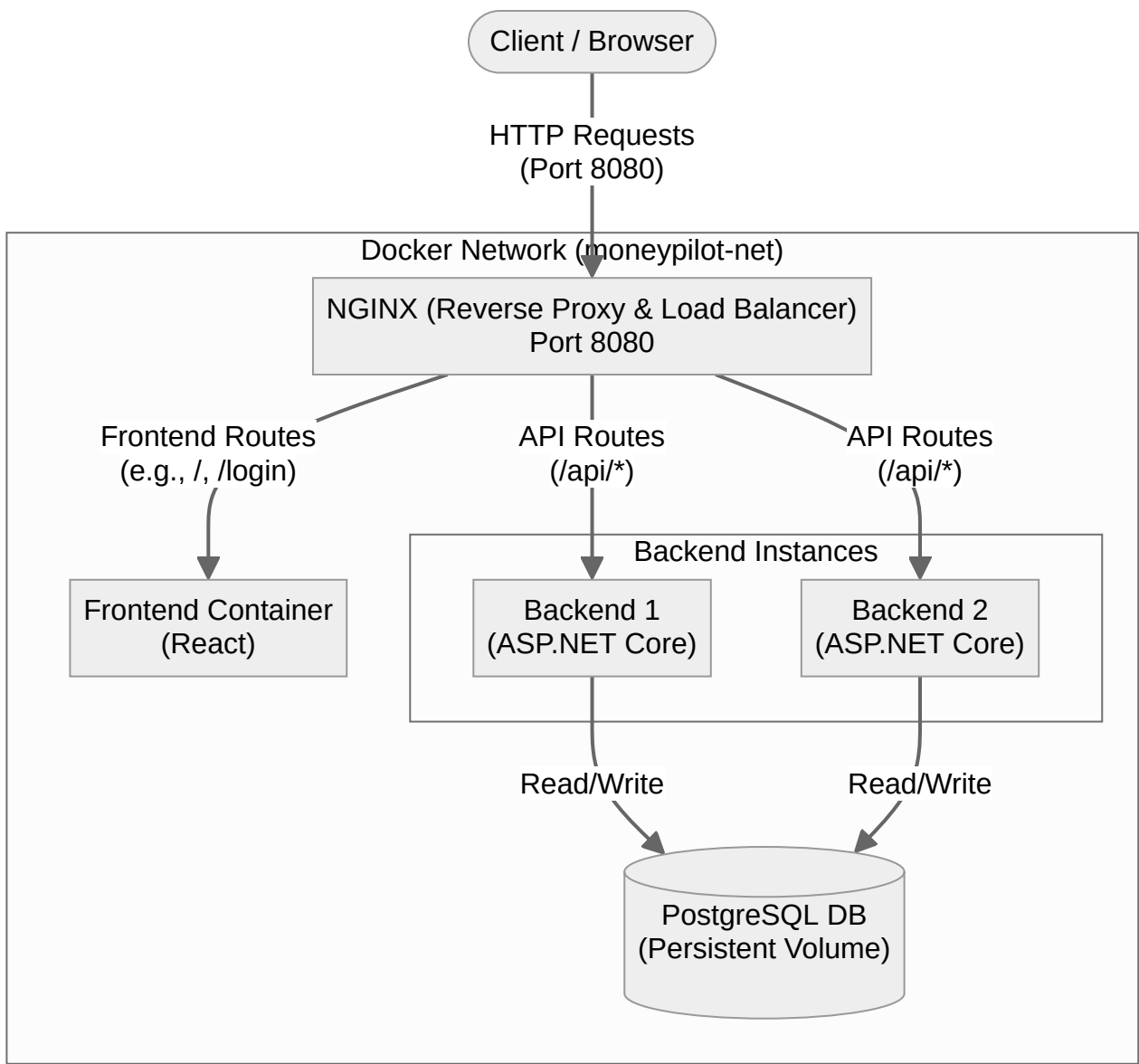
Tech stack

The application is built using the following modern technologies:

- Frontend:** React, TypeScript
- Backend:** ASP.NET Core (C#)
- Load Balancer / Reverse Proxy:** NGINX
- Database:** PostgreSQL 18

Architecture

The application uses a containerized distributed architecture, deployed via Docker Compose.



Infrastructure Details

- **Nginx Reverse Proxy:** Acts as the single entry point. It serves the React frontend and load balances API traffic across multiple backend instances to ensure high availability and reliability under load.
- **Backend Services:** Two identical stateless ASP.NET Core containers handle API requests, business logic, and database interactions.
- **Database:** A PostgreSQL container with a persistent volume (`pgdata`) ensures data durability across container restarts.
- **Authentication:** Modern JWT-based authentication using Secure, HttpOnly cookies.

Start application

```
docker-compose up -d --build
```

(The `--build` flag ensures that the latest changes are compiled and included in the container images).

Test user Account

- **Username:** RaphaellLins
- **Password:** 12345678
- **Email:** raphael@linsit.at