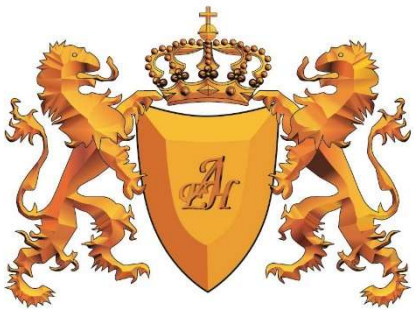
UNIVERSITY OF ECONOMICS AND HUMANISTICS SCIENCES IN WARSAW

BRANCH OF STUDY: COMPUTER SCIENCE



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full-time course

index number 59005

A Web Application – Personal Finance Tracker with Smart Budgeting Suggestions

Documentation for the diploma project prepared under the supervision of Agnieszka Duraj AEH

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1. Basic information (max. 4 pages)

Project name	*A Web Application – Personal Finance Tracker with Smart Budgeting Suggestions*
Project goal	The purpose of this project is to help individuals manage their personal finances more effectively by providing a user-friendly web application. The application allows users to log their income and expenses and automatically generates basic budgeting suggestions to promote better financial habits. This project aims to support users who struggle with tracking their spending and saving goals by providing visual feedback and actionable advice based on their financial data.
Brief description of the project	The project is a web-based finance tracker that enables users to register, log in, and record their financial transactions. The application categorizes expenses and income, shows spending trends with visual charts, and provides simple budgeting suggestions using predefined rules and lightweight algorithms. Users receive tips such as reducing spending in specific categories or alerts when they exceed a budget. The system is built using Python with Django for the backend and optionally HTML/CSS/JavaScript for the frontend.
Competitor product analysis	There are several personal finance applications available such as Mint, YNAB (You Need A Budget), and PocketGuard. These solutions offer a wide range of features including automatic bank syncing, advanced analytics, and mobile apps. However, many of them are either paid, overly complex for casual users, or focused on the US market. **Advantages of competitors**: • Bank synchronization • Advanced budget tracking • Financial goal setting tools **Disadvantages**: • Subscription-based pricing • Complexity for users seeking simplicity • Limited customization for individual needs This project aims to offer a **free, lightweight, and privacy-respecting alternative** with essential features for basic finance tracking and budgeting.
List of technologies used	*Python 3.11 – backend development* *Django 4.x – web framework* *SQLite – lightweight database for development and testing* *HTML/CSS/JavaScript – frontend interface*
Description of the technological stack and justification of selected technologies	The project uses **Python** as the core programming language due to its simplicity and widespread use in web development and data analysis. **Django** is chosen as the web framework because of its built-in tools for authentication, admin panel, and ORM support, which simplifies development. **SQLite** is selected as the database for its ease of use in small-scale applications. The frontend uses **HTML/CSS/JS** with **Chart.js** for rendering visual charts and **Bootstrap** for responsive layouts. This stack ensures fast development with a focus on core features without overcomplicating the deployment.

2. Key issues related to the implementation of the project (3-5 pages)

The core implementation of the *Personal Finance Tracker* focuses on secure user authentication, transaction handling, data visualization, and providing simple budgeting suggestions. The web application is built using the Django framework, which offers robust tools for rapid web development.

1. User Registration and Authentication:
Django's built-in user management system handles registration, login, and session management. Passwords are securely hashed and stored, ensuring user security.

2. Transaction Management:
Users can add income or expense records. Each transaction is saved with relevant metadata like category, amount, type (income/expense), and date.

3. Budgeting Suggestions:
The application checks spending behavior and shows tips. For instance, if food expenses exceed a certain percentage of income, a recommendation is displayed.

These features together help users understand their financial habits and take small steps to improve them.

3. Conclusions and development prospects (maximum 1 page)

The project fulfills its objective by offering a minimal yet functional personal finance tracking tool with intelligent budgeting suggestions. It supports core features such as transaction management, basic analytics, and simple alerts to guide users.
In the future, the application could be extended with:

- Support for recurring payments
- Integration with external financial APIs or banks
- Notifications/reminders
- A mobile app version
- Smarter AI suggestions using user behavior analysis or clustering

These enhancements would make the application more powerful and user-centric while maintaining its simplicity.

4. Bibliography/sources

- Django Documentation – https://docs.djangoproject.com/
- Chart.js – https://www.chartjs.org/

- Python Official Docs – https://docs.python.org/
- Bootstrap – https://getbootstrap.com/
- Real Python Tutorials – https://realpython.com/