



Smart Spender Capstone 2 Project Documentation

1. Title & Course

Project: SmartSpender

Course: CIS4951 Capstone 2

University: Florida International University

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2. Team Members

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3. Abstract

Many students struggle with financial planning. SmartSpender is a simple web app that helps users track income and expenses, group spending into categories, receive overspend alerts, and follow saving goals using dashboards and charts.

4. Introduction

Financial tracking is difficult for many students and young adults. Without a clear plan, small daily spending adds up fast. Real example: A student receives \$500 allowance, spends \$6 per day on rides and \$8 per day on snacks, and does not track it. In 3 weeks, \$294 is gone without the student realizing. SmartSpender was created to close these tracking gaps in a clean, instant, and safe way.

5. Current System Limitations

- Budgeting done on paper or simple phone notes
- Totals must be calculated manually, causing errors
- No warnings before overspending
- No category grouping view
- No backups for finance data

6. Purpose of the New System

- Track income and expenses instantly
- Group spending into categories like rent, food, bills, and entertainment

- Send overspend alerts before budget crosses the limit
- Track saving goals visually

7. System Architecture

Backend: Flask framework (Python)

Frontend: Web forms + Dashboard UI + Charts

Data flow: User UI → Backend Logic → Dashboard summary

Alerts controlled by JavaScript client logic

Charts shown on Dashboard without extra backend servers

8. Object Design

Key objects:

User (login/profile)

Income (earnings)

Expenses (spending)

Category (grouping)

Savings Goal (tracking)

Alerts (warnings)

Dashboard (live calculation view)

9. Implementation Highlights

UI designed in Canva platform

Forms collect income and expenses values

Backend logic built using Flask Python framework

JavaScript pop ups send alerts when budget reaches limits

Dashboard UI updates totals automatically

Pie and bar charts show category spending clearly

No excessive animations added to keep the UI clean

10. Verification & Testing

Functional Tests:

Login tested and works correctly

Transactions tested: add, edit, delete

Category grouping tested

Alerts tested with low budgets to force limits

Saving goal progress tested

Charts tested and show correct category data
Screenshots saved separately for professor review

11. Challenges & Lessons Learned

Connecting backend logic with UI clearly
Keeping chart values synced correctly
Making overspend alerts reliable
Learning to avoid text rich slides and heavy UI animations

12. Future Improvements

Add more intelligent budget insights
Add multi video support if needed
Add predictive saving tips
Improve category analytics visuals

13. References

Flask Official Documentation
WTForms Official Guide
REST data API integration help
Capstone 2 project rubric and guidance
Dashboard chart UI inspiration