Product Requirement Document

ENGS110

Introduction to programming

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Project Title: BitCart- Terminal-Based Debit Slot Manager

Description:
BitCart is a terminal-based application that allows users to manage virtual debit card “slots” for budgeting and tracking purposes. Users can register, log in, and create slots (e.g., groceries, travel) to organize their spending.

Objectives & Goals

- Enable user registration and authentication securely.
- Allow users to create, delete, and update slots with balances.
- Implement total balance management.

Assumptions and Constraints

- Database is available locally
- Input is provided via keyboard.

Constraints

- No internet access or remote database integration.
- No GUI; command-line only.
- SQLite database dependent.

Background and strategic fit

In Armenia, many individuals receive their salaries and government assistance through debit cards. However, due to limited access to effective financial planning tools people often struggle to allocate and track their spending, leading to poor budgeting outcomes. **BitCart** addresses this issue by offering a lightweight, terminal-based application that enables users to manage virtual debit "slots" representing different budgeting categories (e.g., groceries, rent, savings). It is designed to be fully offline and accessible on low-resource systems, making it ideal for widespread use in financially vulnerable communities.

While the current goal is to enable personal finance management directly through the terminal, the **larger vision** is to eventually integrate this system at the **banking or card level**, allowing slot-based budgeting to become a core feature of debit card usage. This would empower users to plan and control their spending directly within the financial system they already use—bridging the gap between technology and accessibility.

Scope: User Stories & Requirements

User Stories

- As a user I would like to manage my finances effectively
- As a new user, I want to register and log in securely.
- As a returning user, I want to view and manage my existing slots.
- As a user, I want to create a slot and allocate funds to it.
- As a user, I want to withdraw funds from a slot.
- As a user, I want to see my total balance and how much is allocated.

Functional Requirements

- Register/login system using username and password.
- Slot creation, deletion, fund allocation, and withdrawal.
- Display total and slot-specific balances.
- Prevent overdrawing from slots.

Product features

Feature	Description	Goal	Use Case
Registration/Login	Secure user account creation and login.	Allow individual access	User signs in to manage their slots
Slot Management	Create, view, delete slots	Enable budgeting by category	User creates "Groceries" slot with $200
Fund Transfer	Allocate or withdraw money from slots	Track expenses per category	User withdraws $50 from "Groceries"
Balance	Show available unallocated balance	Maintain financial overview	User sees 100000 drams

Release Criteria

- Functionality: All core features (register, login, slot operations) are working.
- Usability: Clear prompts, no crashes, and helpful error messages.
- Reliability: No data loss; all user data is stored persistently.
- Performance: Fast terminal response and operations.
- Supportability: Clean, modular code with inline documentation.

Exclusions

- No mobile or web application interface.
- No encrypted password storage (plain-text).
- No cloud database integration.
- No integration with external finance APIs.