BỘ THÔNG TIN VÀ TRUYỀN THÔNG

HỌC VIỆN CÔNG NGHỆ BƯU CHÍNH VIỄN THÔNG

Third Report

Foundation Internship

ChippyCash

Smart Chatbot for Easier Expense Management

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INTERNSHIP BASE REPORT - WEEK 3

1. Overview of This Week's Work

This week, I made significant progress in developing the **ChippyCash** application, focusing on personalization and functionality enhancements:

2. Work Completed

2.1. SQL Integration

The function imports and utilizes get_categories_by_username() from the sql.py module to retrieve user-specific spending categories. This integration enables:

Personalized financial data:

- Real-time incorporation of user preferences into the assistant's knowledge base.
- Contextually relevant responses based on individual spending patterns.
- Dynamic retrieval of personalized financial data.

Data Flow Architecture:

- Input: User identifier (id_user)
- Processing:
  - SQL query execution to retrieve personalized categories
  - Template string population with user-specific context
  - Instruction set generation for the AI model.
- Output: Customized prompt string containing:
  - Assistant identity and capabilities
  - User-specific information
  - Operational workflow instructions
  - Data handling protocols

Interaction Protocol:

The prompt includes specific interaction guidelines for Chippy:

- Progressive Information Collection: Generate contextual questions to gather necessary details from users
- Automated Data Persistence: Seamlessly store new information without explicit confirmation
- Information Efficiency: Avoid redundant requests for previously provided data
- Autonomous Operation: Handle data persistence operations without requiring user confirmation

2.2. Technical Considerations

Performance Optimization

- The prompt is generated dynamically for each user session
- SQL queries are executed on-demand rather than cached to ensure data accuracy
- The prompt template is structured to minimize redundant information while maximizing contextual guidance

Security Aspects

- User identifiers are passed as parameters rather than hardcoded
- No sensitive information is directly embedded in the prompt template
- The SQL integration is abstracted to allow for future security enhancements

2.3. Extensibility

The current implementation provides several avenues for future enhancement:

- Multilingual Support: The prompt structure can be adapted for different languages

- Enhanced Personalization: Additional user data points can be incorporated
- Behavioral Customization: Interaction protocols can be adjusted based on user preferences
- Expanded Financial Insights: Additional financial analysis metrics can be incorporated