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ENSE 375 – Software Testing and Validation

DollarDiary

- Team Members:

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- **Design Constraints and Requirements:**

Based on the provided folder information, the design constraints and requirements for the DollarDairy an Expense Tracker System are:

1. Design Constraints:

- 1) Economic Factors - Budget Constraints
 - Scalability: Design the system to be scalable without incurring excessive costs. This might involve choosing a database and hosting solution that can grow with the user base without significant cost increases.
- 2) Regulatory Compliance (Security and Access) - Data Protection and Privacy
 - User Authentication: Implement secure authentication mechanisms using Spring Security with JWT to protect user data.
 - Access Controls: Implement role-based access controls to restrict access to sensitive information and administrative functions.
- 3) Reliability - System availability and performance
 - Testing: Conduct thorough testing, including unit tests, integration tests, and user acceptance testing to ensure the system functions reliably under various conditions.
 - Backup and Recovery: Implement regular data backup processes and ensure a robust recovery plan is in place to restore data in case of corruption or loss.
- 4) Societal Impacts - User Experience and Accessibility
 - User-Friendly Design: Ensure the user interface is intuitive and easy to use, enabling users from diverse backgrounds to manage their finances effectively.

2. Functional Requirements:

- **Register users:** Allow users to create an account by providing necessary details such as username, password, and email address.
- **Authenticate users:** Verify user credentials during login using Spring Security with JWT to ensure secure access.
- **Log expenses:** Enable users to input expenses with details such as date, amount, category, and description.
- **Categorize expenses:** Allow users to assign expenses to predefined or custom categories for better organization.
- **Set budgets:** Permit users to set budget limits for different categories and track their spending against these budgets.

3. Objectives:

- 1) Provide a Comprehensive Financial Management Tool:
 - Develop a system that allows users to log and track their daily expenses effectively.
 - Enable users to categorize their expenses to better understand their spending patterns.

- 2) Facilitate Budgeting and Financial Planning:
 - Allow users to set budgets for different expense categories.
 - Notify users when they are approaching their budget limits to promote better financial discipline.
- 3) Enhance User Experience with Data Visualization:
 - Provide interactive charts and graphs to help users visualize their financial data clearly.
 - Generate detailed monthly and yearly reports to help users analyze their spending over time.
- 4) Ensure Security and Compliance:
 - Implement secure user authentication and authorization.
 - Protect sensitive user data through encryption and comply with relevant data protection regulations.
- 5) Promote Accessibility and Usability:
 - Design an intuitive and user-friendly interface.
 - Ensure the application is accessible to users with disabilities.