# Data Management Deliverables for Personal Expense Tracker

1. **Data Storage Protocols**
   * **Objective**: Ensure reliable storage for user expenses with secure and organized data handling.
   * **Implementation**: Currently, data is stored in localStorage for persistence across user sessions. For larger datasets, consider a cloud database to support multi-user scenarios and enhanced security.
2. **Data Security Measures**
   * **Objective**: Protect sensitive user data to maintain confidentiality and data integrity.
   * **Implementation**: While localStorage is suitable for small applications, future upgrades to a secure backend (with HTTPS and token-based authentication) are recommended. This would safeguard against unauthorized data access and improve data protection.
3. **Data Backup and Recovery**
   * **Objective**: Prevent data loss in case of browser or storage errors.
   * **Implementation**: In the current local setup, users are encouraged to manually back up their data. For future versions, automatic cloud-based backups would be ideal, providing users with data recovery options.
4. **Data Consistency Checks**
   * **Objective**: Maintain accurate and consistent data entries across sessions.
   * **Implementation**: JSON parsing ensures correct formatting, while validation checks during data entry enforce consistency. For complex datasets, server-side checks could further enhance consistency.
5. **Scalability and Future Data Management**
   * **Objective**: Plan for scalable data handling as the application grows.
   * **Implementation**: Moving to a cloud database would support higher volumes of data, offering more structured management and the ability to expand with user demand.