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Data Management Strategies.

- Database Selection: For a software system like “Find My Meal” we would suggest using NoSQL like MongoDB database with a combination of MySQL or any relational database to optimize overall performance. Based on the requirement of our application, we choose a hybrid approach.
- Data Security:
    - For sensitive data such as users’ personal information, we would use encryption both in transit and at rest.
    - Using a double layer authentication process to grant access control to authorized users.
- Backup:
    - Regularly backup databases to prevent data loss in case of system errors or connection interrupts.
- Performance track:
    - Implement activities logs’ tracker to keep track of system activity and performance.
- Find My Meal software system include 3 main databases:
    - User Account database:
        - User account databases include sensitive data.
        - Users are required to log in to their account in order to see their personal information.
        - Administrators are responsible for data management. Administrators are required to log in to their account before they have access to the entire system database.
        - User Account attributes such as user profiles, authentication information, are relatively consistent and structured, hence we choose relational databases like MySQL to store/organize such well-defined data schema.
        - Because our application requires complex queries and relationships between different entities such as users, recipes, budgets…, a relational database will be an ideal solution.
        - However, there is one exception: user reviews. Using MongoDB (a NoSQL database) to store user review as documents for easy retrieval and data manipulation.
    - List of Recipe database:
        - Since the list of recipes involved a large amount of read-write operations and needed to be updated in real time, a database that could scale horizontally like NoSQL would be a good fit. (For example, the number of users' reviews on all recipes could grow rapidly over time and needed to be updated frequently).
        - Using MongoDB to store recipes as documents and records.
        - Our application will list the recipes in the order of users review and rating. To achieve statistical, personalized data presentation, we use MongoDB.

- List of Store database:
  - List of store databases involve geospatial queries which are strongly supported by MongoDB. Therefore, using MongoDB will make it efficient to pick stores based on their locations.