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An Intel® Unnati Community Initiative

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Customized AI Kitchen for India

Presented by StackUnderFlow

Understanding The Problem

- Reducing the time and effort needed for meal preparation through intelligent recipe suggestions.
- Combining AI-driven guidance with traditional kitchen appliances like non-microwave ovens.
- Users need customized dishes that match their dietary preferences and available ingredients.
- Ensuring kitchen inventory is accurate and up-to-date.
- Automating the detection and selection of clean utensils for cooking.





Brief About The Idea

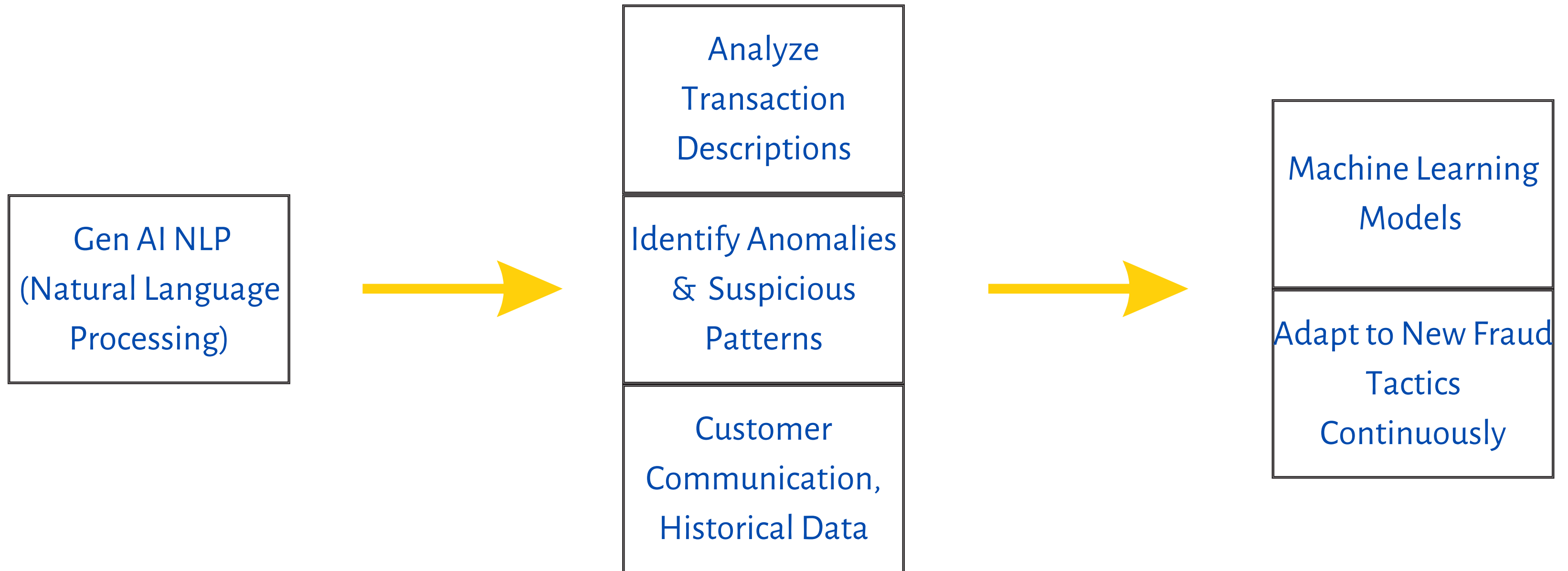
- Use AI to generate personalized recipes based on user preferences and available ingredients.
- Real-time updating and management of kitchen inventory.
- Implement a system to detect and select appropriate utensils from a smart washing machine.
- Notify users when essential ingredients are missing and suggest alternatives or prompt restocking.
- Ensure the system works seamlessly with traditional ovens for a wider range of cooking options.

Opportunities/ Implementation

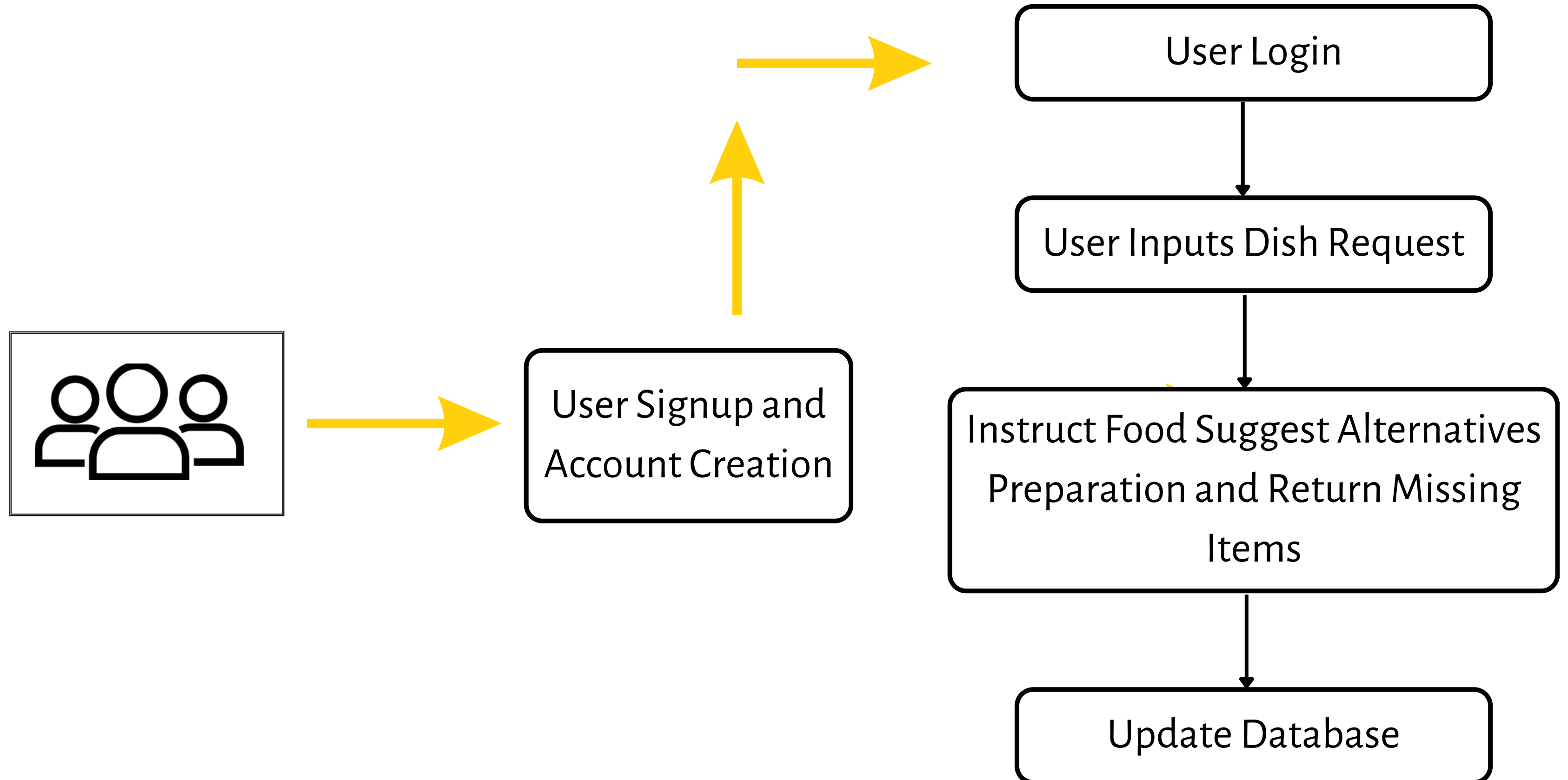
- Advanced Tech Stack : Leverage Node.js, MongoDB Atlas, Zod, bcrypt, JWT, and OpenAI API for a robust backend solution.
- Scalability: Implement horizontal and vertical scaling strategies for handling increased user demand and traffic.
- Enhanced Security: Use bcrypt for password hashing and JWT for secure, stateless authentication.
- Global Error Handling: Employ Zod and global catches for consistent error management and data validation.
- Real-Time Updates: Utilize WebSockets or similar technologies for real-time inventory and utensil status updates.



Visual Representations



Process Flow



Team Contribution



Jaideep Bose (Team Lead)

System Architecture and Overall Coordination

- Overview of the backend framework and database choices.
- Explanation of the architectural decisions and how they support the project's goals.
- Detailed discussion on authentication (JWT) and password protection (bcrypt).
- Explanation of data protection measures with MongoDB Atlas.



Ashutosh Kumar Tiwari

Recipe Generation

- Handling user requests and checking inventory.
- Using OpenAI API for alternative suggestions.
- Utilization of the Zod library for data integrity.
- Integration of OpenAI API for intelligent recipe suggestions.



Ayush Srivastava

Database and Data Management:

- Setup and management of MongoDB Atlas.
- Use of Mongoose ORM for schema-based data modeling.
- Implementation of session management for enhanced security.
- Setting up Node.js and Express.js.

Conclusion

- The project offers an intelligent and comprehensive cooking assistant for home kitchens.
- Utilizes state-of-the-art technologies to provide a seamless and secure user experience.
- Scalability Plans: Designed with scalability in mind to handle growing user demands.
- Transformative Impact: Sets the foundation for a transformative user experience in home cooking, making it more efficient and enjoyable.

Thank you very much!

Presented by :

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