**Findings and Recommendations**

# **Introduction**

This analysis focuses on understanding user behaviors, cooking preferences, and order trends to derive actionable business insights. Using three datasets—UserDetails, CookingSessions, and OrderDetails—the data was cleaned, merged, and analyzed to uncover relationships between cooking sessions and orders, identify popular dishes, and explore demographic factors influencing user behavior. The objective is to provide key findings and recommendations to help optimize operations and improve customer satisfaction.

# **Methodology**

1. **Data Cleaning and Preparation**:
   * Duplicates and missing values were handled.
   * Standardized column names for consistency.
   * Converted data types (e.g., dates to datetime format).
2. **Data Integration**:
   * Merged datasets on user\_id and relevant keys (session\_id, order\_id) to create a unified view.
   * Ensured data alignment across all datasets by validating joins.
3. **Analysis Techniques**:
   * Grouped data to examine trends in cooking sessions and orders.
   * Aggregated metrics like total orders, duration of sessions, and ratings.
   * Used visualizations for insights into demographic factors and popular dishes.
4. **Visualization Tools**:
   * Created bar charts, heatmaps, and line charts in Python to represent insights visually.

# **Key Insights**

1. **Trends in Cooking and Ordering**:
   * Users with higher ratings for cooking sessions tend to place more orders.
   * Peak activity for cooking sessions occurs during dinner, followed by lunch.
   * Evening and nighttime are the most active times for placing orders.
2. **Most Popular Dishes**:
   * **Spaghetti** and **Caesar Salad** were consistently among the most ordered and cooked dishes.
   * Breakfast items like **Pancakes** had lower order volumes but received high satisfaction ratings.
3. **Demographics Influencing Behavior**:
   * Age groups **25-35** dominated both cooking sessions and order placements.
   * Urban locations showed a higher frequency of orders, with a preference for lunch and dinner items.
   * Users with "Dinner" as their favorite\_meal placed the most orders, indicating alignment between preferences and behavior.

# **Recommendations**

1. **Personalized Promotions**:
   * Offer targeted discounts on popular dishes like Spaghetti and Caesar Salad to maximize engagement.
   * Create age-specific campaigns, especially for users aged 25-35, to capitalize on their activity.
2. **Enhanced User Engagement**:
   * Introduce gamification or rewards for highly rated cooking sessions to encourage participation.
   * Provide meal kit suggestions based on cooking session trends and user ratings.
3. **Focus on Urban Markets**:
   * Expand delivery services in urban areas, where demand for orders is highest.
   * Customize meal offerings to cater to urban dietary preferences.
4. **Optimize Time-based Promotions**:
   * Launch evening-specific discounts to capitalize on peak order times.
   * Introduce breakfast combo offers to boost morning activity.

# **Conclusion**

The analysis reveals strong correlations between cooking and ordering behaviors, highlighting opportunities to enhance user engagement and drive business growth. By leveraging demographic insights and popular dish trends, the business can implement targeted strategies to improve customer satisfaction and operational efficiency. The recommendations provided aim to align business offerings with user preferences, ensuring sustained growth and customer loyalty.