

Software Engineering Group Project

Delivery 1-System Request

1. Project Title:

Abu Dhabi Eats: AI-Driven Nutrition and Food Ordering

2. Project Team:

Farzan Ali, fa2235

Shayan Ahmad, sa6097

Matija Susic, ms14012

3. Project Description:

"Abu Dhabi Eats" is an innovative AI-driven nutrition and food ordering app, tailored for the diverse population of Abu Dhabi. It revolutionizes meal planning and healthy eating by offering personalized meal and grocery plans based on individual dietary goals, preferences, and budget constraints. Integrating with local restaurant menus and food delivery services, the app simplifies the process of choosing and ordering nutritious meals. It addresses the growing need for convenient, health-conscious dining options, catering to the fast-paced lifestyle of urban residents while promoting healthier eating habits.

4. Business Goals:

1. **Enhancing Meal Planning Convenience:** The app simplifies the meal planning process, especially for those with busy lifestyles, by suggesting meals from local restaurants and creating grocery lists, thus saving time and effort.
2. **Promoting Healthier Eating Habits:** By providing personalized meal plans based on nutritional needs and goals, the app aims to encourage healthier eating choices among its users.

3. **Cost-Effectiveness for Users:** The app helps users manage their food budgets more effectively by offering meal and grocery options within their specified monthly budget, along with the best deals available.
4. **Supporting Local Businesses:** By integrating local restaurant menus and grocery stores, the app promotes local businesses, potentially increasing their visibility and customer base.

5. Main Features (Engineering Objectives):

1. **Personalized AI-Driven Meal Planning:** The app utilizes AI to create customized meal plans based on users' dietary goals, preferences, and budget.
2. **Comprehensive Database of Local Restaurants:** Integration with a wide range of Abu Dhabi restaurants, including detailed menus and nutritional information of dishes.
3. **Smart Grocery List Generation:** AI algorithms generate grocery lists that align with users' dietary plans, factoring in budget and nutritional needs.
4. **Direct Ordering Integration:** Integration with food delivery services like Talabat Deliveroo, Noon Food, etc. allowing users to order meals directly through the app.
5. **Budget Management Tools:** Features to help users manage their monthly food budget, providing cost-effective meal options.
6. **Manual Food and Calorie Tracking:** Option for users to manually enter and track meals not ordered through the app, ensuring comprehensive dietary tracking.
7. **Hydration Reminder:** A feature to remind users to stay hydrated throughout the day.

6. Scope:

Within Scope:

1. **AI-Powered Meal and Grocery Planning:** Creating plans based on dietary

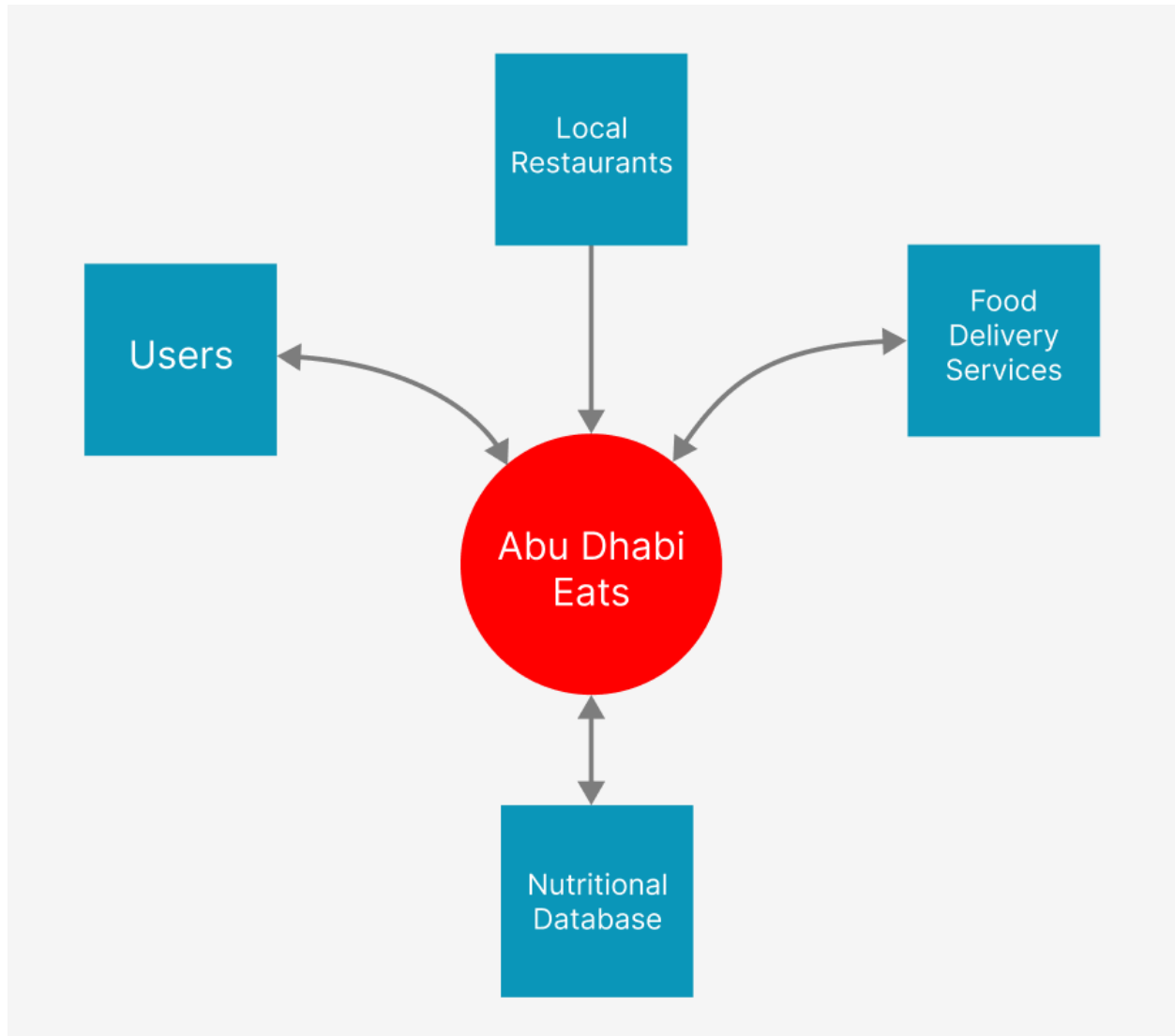
preferences, goals, and budget.

2. **Database Integration:** Including Abu Dhabi restaurant menus and nutritional information.
3. **Ordering System Integration:** Linking with existing food delivery services for direct meal ordering.
4. **Budget Management Features:** Tools for tracking and managing food expenses.
5. **User Dietary Tracking:** Manual input for tracking meals not ordered through the app.

Outside Scope:

1. **Physical Delivery Logistics:** The app will not handle the physical delivery of food.
2. **Restaurant Partnership Management:** While the app will integrate menus, it won't manage partnerships or negotiations with restaurants.
3. **In-depth Nutritional Counseling:** The app provides general dietary suggestions, not specialized medical or nutritional advice.
4. **Global Expansion:** Initially focused on Abu Dhabi, without immediate plans for global expansion.

Context Diagram



7. Stakeholders:

1. **Users:** Individuals in Abu Dhabi seeking convenient, healthy meal planning and ordering options. This is the primary group directly affected by and benefiting from the app.
2. **Local Restaurants:** These businesses will be integral to providing the diverse menu options featured in the app. Their participation and cooperation are crucial for accurate menu and nutritional information.

3. **Food Delivery Services:** Platforms like Talabat, Deliveroo and Noon Food, which will be essential for the ordering and delivery aspect of the service.
4. **Nutritionists and Dietitians:** Professionals who could provide valuable input on dietary information and meal planning features, ensuring the app's recommendations are health-focused and balanced.
5. **App Developers and Engineers:** The team(us) responsible for designing, developing, and maintaining the app, including backend and frontend developers, data scientists for AI algorithms, and UI/UX designers.
6. **Investors and Sponsors:** Individuals or entities providing financial support for the app's development and marketing. They have a stake in the app's commercial success.
7. **Healthcare Professionals:** Doctors and healthcare providers who might recommend the app to patients for better dietary management.
8. **Government and Regulatory Bodies:** Ensuring the app complies with local health regulations, data privacy laws, and business operation guidelines.
9. **Grocery Stores:** For the grocery list feature, partnerships with local grocery stores would be beneficial.

8. Constraints:

1. **Time Constraint:** Given the semester timeline for the project, there's a limited window for development. This necessitates prioritizing certain features and possibly phasing others for future updates.
2. **Budget Limitations:** As a student project, our funding is limited. This could impact the scope of features, marketing efforts, and potential partnerships.
3. **Technical Constraints:** The complexity of integrating AI for personalized meal planning and integrating with existing food delivery platforms poses significant technical challenges. Our team's technical proficiency and available technology will shape these aspects.

4. **Data Availability and Quality:** The success of the app depends on the availability and accuracy of restaurant menus and nutritional information. Gaps or inaccuracies in data can affect the app's effectiveness.
5. **Regulatory Compliance:** Adhering to data privacy laws and health-related regulations in Abu Dhabi will be essential, which might limit certain functionalities or require additional resources for compliance.
6. **User Adoption and Market Penetration:** The success of the app also depends on user adoption rates, which can be unpredictable and influenced by factors like market competition and user preferences.
7. **Technical Support and Maintenance:** Post-launch, the app will require ongoing maintenance and support, which may be constrained by the team's availability and budget.

9. Risks:

1. **Data Privacy and Security Risks:** Handling user data, especially dietary preferences and health information, poses significant privacy risks. To mitigate this, the app will implement robust data encryption, abiding by UAE data protection laws.
2. **User Adoption Challenges:** The app's success heavily depends on user adoption. To manage this risk, initial market research and user testing will be conducted to understand user needs and preferences. Post-launch, continuous user feedback will be sought to improve the app.
3. **Technical Implementation Risks:** Integrating AI and ensuring seamless functionality can be technically challenging. To mitigate this, the project will follow an agile development approach, allowing for iterative testing and refinement of features.
4. **Limited Time Risk:** The tight development timeline could lead to rushed work or incomplete features. Implementing a phased approach to development, focusing

first on core functionalities, can mitigate this risk.

5. **Market Competition:** Facing competition from existing apps and services is a significant risk. Differentiating the app through unique features, like AI-driven personalization and local focus, can help mitigate it.
6. **Accuracy of AI Recommendations:** The effectiveness of AI in providing accurate meal plans is crucial. This will be managed through continuous machine learning model training and refinement, along with expert input from nutritionists.
7. **Regulatory Compliance Risks:** Non-compliance with health or data regulations can lead to legal issues. This will be mitigated by staying informed of relevant laws and seeking legal advice during development.
8. **Scalability and Maintenance Issues:** Post-launch, the app might face scalability and maintenance challenges. Planning for scalability from the onset and setting aside resources for ongoing maintenance and updates can help manage this risk.

10. Appendix:

Additional documents or reference materials available upon request.