

1. Business Requirement

1.1 Dynamic notification

A feature or functionality for a mobile application that involves dynamic notifications based on the user's location and food habits. This kind of feature could enhance user engagement and provide personalized experiences. Here's a breakdown of the components and considerations for implementing such a feature:

1.1.1 Location Tracking:

- Ensure that your app has the necessary permissions to track the user's location.
- Implement a location tracking system that runs in the background to detect when the user is passing by or inside a restaurant.

1.1.2 Behavioral Data Logging:

- Create a system to log user food habits and related behaviors. This could include the types of cuisine they prefer, how often they eat out, favorite dishes, etc.
- Time logging can be crucial for understanding when users typically have meals, allowing you to send timely notifications.

1.1.3 Dynamic Notifications:

- Use the collected data to trigger dynamic notifications. For example:
 - If the user is passing by a restaurant they frequent, you might send a notification with a personalized offer or information about a new dish on the menu.
 - If it's around the user's usual mealtime, a notification suggesting nearby restaurants or promotions could be sent.

1.1.4 User Consent and Privacy:

- Clearly communicate to users that their location and behavioral data are being used to provide personalized recommendations.
- Implement privacy settings, allowing users to control the level of data sharing and notifications they receive.

1.1.5 Machine Learning (Optional):

- Consider implementing machine learning algorithms to analyze user behavior and preferences more effectively over time.

- This could improve the accuracy of recommendations and notifications.

1.1.6 Testing and Iteration:

- Conduct thorough testing to ensure the feature works seamlessly and doesn't negatively impact the user experience.
- Monitor user feedback and iterate on the feature based on real-world usage.

1.1.7 Compliance with Regulations:

- Ensure that your app complies with data protection and privacy regulations in the regions where it operates.

1.1.8 User Interface:

- Design a user-friendly interface to allow users to manage their preferences, privacy settings, and notification preferences.

1.2. Suggestion of meals based on tracked time for individuals -

Creating a meal suggestion feature based on tracked time for individuals involves leveraging the data collected from users' meal logging activities to offer personalized and timely recommendations. Here's how you can implement such a feature:

2.1 Meal Logging System:

- Ensure your app has a meal logging system that allows users to record their meals, including details such as the type of cuisine, specific dishes, and any other relevant information.

2.2 Time-Based Data Analysis:

- Analyze the time data logged by users to understand their mealtime patterns. This can include identifying regular meal times, frequency of meals, and any variations based on days of the week.

2.3 Machine Learning Algorithms (Optional):

- Consider implementing machine learning algorithms to analyze the user's historical meal data and predict future preferences based on the time of day.

- Use the machine learning model to understand patterns and make personalized meal suggestions.

2.4 Real-Time Suggestions:

- Implement a real-time suggestion system that takes into account the current time and the user's historical meal data.
- Use the insights gained from the analysis to suggest relevant meals based on the user's preferences at that particular time.

2.5 User Preferences and Customization:

- Allow users to set their preferences and dietary restrictions within the app.
- Provide options for users to customize the types of meal suggestions they want to receive, considering factors such as cuisine, dietary preferences, and more.

2.6 Push Notifications:

- Send push notifications at appropriate times to suggest meals based on the user's historical data.
- Craft notifications that are engaging and encourage users to explore new dishes or revisit their favorites.

2.7 Feedback Mechanism:

- Implement a feedback mechanism for users to provide input on suggested meals. This feedback can be used to continuously refine and improve the meal suggestion algorithm.

2.8 Integration with Restaurants and Recipes:

- Integrate with restaurant databases or recipe platforms to provide users with information on where to find or how to prepare suggested meals.
- Include links or recommendations for nearby restaurants that offer the suggested cuisine.

2.9 Optimization and Iteration:

- Regularly analyze user engagement and feedback to optimize the meal suggestion algorithm.
- Iterate on the feature based on user behavior and preferences over time.

2.10 User Education:

- Educate users about the benefits of using the meal suggestion feature and how it can enhance their dining experience.

1. 3. Suggesting changes to meal ingredient with healthier options

2. Database Insight

Existing

Features	Data
id	5
trainer_code	T0000000005
user_code	U0000000005
full_name	Ruchika Gupta
gender	female
birth_date	387612000
email_id	ruchikaaguppta@gmail.com
phone_number	8183974536
user_points	20200
password	5dc02d99c613fbdf285c79eca923541b3693af75
terms_and_conditions	1
user_height	63.78
user_weight	63
target_weight	54
weight_changed_on	1692667883
height_changed_on	1595725184
frequently_exercise	do_not
food_mostly_eaten_at	Home
cuisine_ids	16
spent_on_meal	\$5-\$9.99
diet_plan	2
default_diet_plan	1734
medical_condition_ids	
allergic_condition_ids	1
is_profile_completed	1
profile_image	615933a529498-1633235877-615933a52949d.jpg
social_profile_image	
user_location	
forgot_token	3728
forgot_token_checked_on	

email_verified_token	
trainer_email_verified_token	
is_email_verified	
is_trainer_email_verified	0
is_verified	1
is_phone_verified	0
is_active	1
is_active_trainer	0
is_certified	0
is_trainer	1
is_experience_completed	0
is_user	0
time_zone	America/Chicago
user_in_app_purchase	0
trainer_in_app_purchase	0
is_deleted	0
sub_status	0
unsub_reason	
stripe_customer_key	cus_IRn9yD1BnEcQCH
stripe_account_id	
is_dietitian	0
is_online_plan	0
facebook_id	
instagram_id	
google_account_id	1.03E+20
apple_account_id	002003.33ffbe7ef0924f2780aefb01b38bde37.0529
country_code	USA
is_visible	1
is_subscription_free	0
connected_acc_status	
firebase_auth_id	WcNls6D4DLalQubddVQCje2l2Rm2
app_fee_per	0
latitude	Optional(30.53662109375)
longitude	Optional(-97.72607943758385)


```

`cover_photo_url` text COLLATE utf8_unicode_ci NOT NULL,
`xyzmenu_restaurant_id` bigint(20) NOT NULL,
`nutritionix_restaurant_id` char(50) COLLATE utf8_unicode_ci NOT NULL,
`menu_updated_at` char(20) COLLATE utf8_unicode_ci NOT NULL,
`detail_fetched_at` bigint(20) NOT NULL,
`postal_code` varchar(15) COLLATE utf8_unicode_ci NOT NULL,
`source` enum('google','openmenu','','') COLLATE utf8_unicode_ci NOT
NULL,
`created_by` bigint(20) NOT NULL,
`updated_by` bigint(20) NOT NULL,
`deleted_by` bigint(20) NOT NULL,
`is_active` tinyint(4) NOT NULL,
`is_deleted` tinyint(4) NOT NULL,
`created_on` char(15) COLLATE utf8_unicode_ci NOT NULL,
`updated_on` char(15) COLLATE utf8_unicode_ci NOT NULL,
`deleted_on` char(15) COLLATE utf8_unicode_ci NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8 COLLATE=utf8_unicode_ci;

```

Food Log

//hca_food_logs (1).csv to be attached

Food Substitute

//hca_food_substitute.csv to be attached

2.1 Identifying the GAPS in the Data

1. Data Preparation
 - a. Capturing the Data
 - b. Modifying the data for ML
 - c. Feedback Loop
 - d. Pipeline (How data can be reached to ML System)
 - e. Data Hygiene
2. Data Analysis
3. ML Algorithms for each use cases
4. Training the Data
5. Productionalize the Data
6. Feedback Loop