**Capstones project -8**

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**Problem Statement:**

**Scenario**: Local businesses are the backbone of many communities, offering unique products and services that large chains and online retailers often can't provide. However, these small businesses frequently struggle to compete due to limited resources, lower visibility, and challenges in managing day-to-day operations. For example, a local bakery may find it difficult to reach new customers or manage its inventory effectively, while a neighborhood bookstore might struggle with promoting events or special offers. Moreover, local consumers may be unaware of the variety and quality of products available right in their neighborhoods, leading them to shop at larger, more wellknown stores instead. The ongoing challenges posed by economic downturns and changing consumer habits have made it even more critical for local businesses to find innovative ways to attract and retain customers.

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| Group | Learner 1 | Learner 2 | Capstone Project Number |
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Nov 1st ,2024

Discussion of the project

Discussion:

 Authentication and User Management API

• Purpose: Manages user authentication, registration, and roles. Supports customers, business owners, and admin roles with distinct access and permissions.

Features:

• Secure JWT-based authentication.

• Role-based access control (RBAC) to define and restrict access based on user roles.

• Support for multi-factor authentication (MFA) if required.

Business Listings and Profiles API

• Purpose: Manages business profile data, enabling businesses to create and update their presence within the application.

Features:

• Business categorization (e.g., restaurants, retail, services).

• Geo-location support for displaying businesses on a map.

• Option for each business to add an image gallery.

Product and Inventory Management API

• Purpose: Enables businesses to manage their product listings and inventory levels, including stock and pricing details.

• Features:

o Real-time inventory tracking with notifications for low-stock products.

o Basic product categorization (e.g., seasonal items, trending products).

o Support for product photos and descriptions to enhance customer experience.

Customer Engagement API (Notifications & Messaging)

• Purpose: Enhances customer interaction through notifications and a messaging system between businesses and customers.

• Features:

o Push notifications for app users (e.g., promotions, events).

o Real-time messaging interface for customers to communicate with businesses.

o Notification history and preferences for each user.

. Deals and Promotions API

• Purpose: Allows businesses to create, update, and promote special offers, discounts, and events.

Features:

• Expiration tracking to automatically archive expired deals.

• Highlighted deals section for prominent promotion.

• Filtering by deal type (e.g., seasonal offers, member-only discounts).

Review and Rating API

• Purpose: Enables customers to review and rate businesses, providing valuable feedback for other users.

Features:

• Star rating aggregation for each business (e.g., average rating).

• Moderation tools for business owners or admins to flag inappropriate content.

• Sorting by most recent, highest-rated, or lowest-rated reviews.

Existing Api s

Nearby Business Search

• Purpose: Helps users find businesses within a specific radius of their current location.

• The Nearby Business Search API can be configured to show only businesses within a specified radius (e.g., 0.5 miles) or it can show all businesses, sorted by proximity with those closest to the user appearing first. The approach depends on the implementation needs of the application and the user’s preferences.

Key Features:

• Filtered Searches: Users can filter businesses by type (e.g., bakery, bookstore) or proximity.

• Sorting by Distance: Sort results to show businesses closest to the user’s location

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Route and Direction Suggestions

• Purpose: To offer directions to selected businesses, allowing customers to find the easiest route from their current location to the business.

Key Features:

• Route Optimization: Display the shortest or fastest route.

• Multiple Modes of Transport: Driving, walking, biking options.

• Turn-by-Turn Directions: Google Maps supports turn-by-turn instructions in the response data.

Abstract:

Nov 2