Implemented LLM / AI-based Autocomplete Functionality

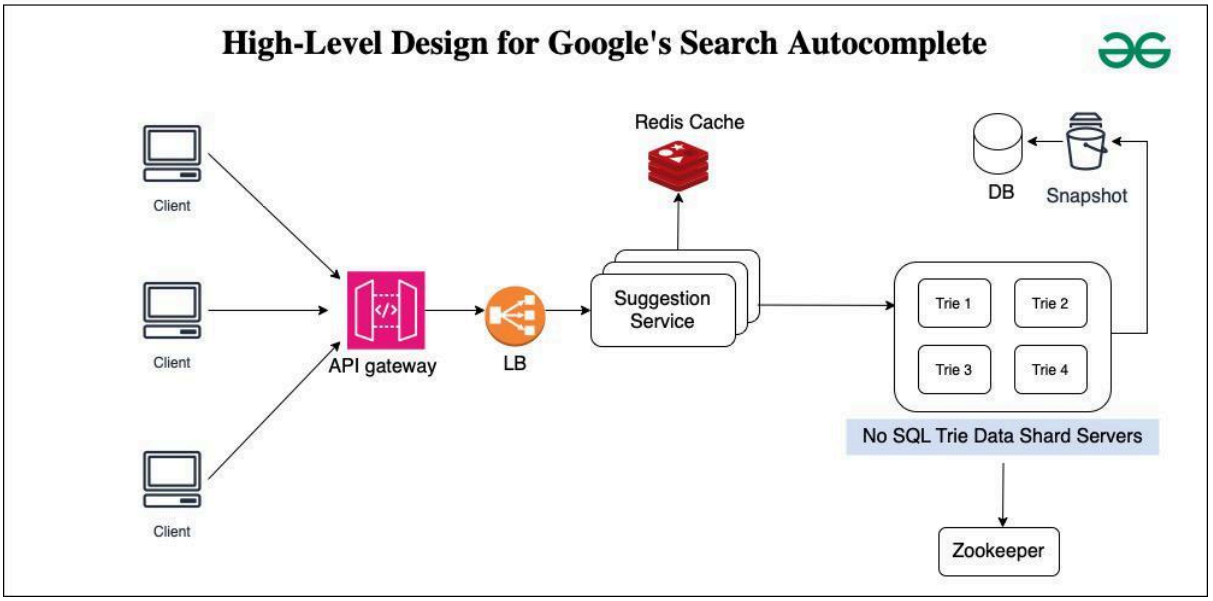
✅ Objective

To enhance user experience while searching for food items, an **AI-powered Autocomplete** feature was integrated using a **Large Language Model (LLM)** API. This helps users find items faster and improves personalization.

🔍 Feature Capabilities

✔ Predicts menu items based on user input
✔ Learns from frequently ordered foods
✔ Suggests relevant cuisines & categories
✔ Works even with spelling mistakes (fuzzy search)

🔄 How It Works



1️⃣ User types a query in the search bar
2️⃣ Request is sent to AI model with partial input
3️⃣ LLM predicts top food items based on:

- Menu database
- User order history

- Popular trends
  4️⃣ Suggestions update in real-time under the search bar

💻 Implementation Details

✅ Frontend (React) - Autocomplete Component

```
import React, { useState } from "react";

const AutocompleteSearch = () => {
  const [query, setQuery] = useState("");
  const [suggestions, setSuggestions] = useState([]);

  const handleSearch = async (text) => {
    setQuery(text);
    if (text.length > 1) {
      const res = await fetch("http://localhost:5000/ai-search?q=" +
text);
      const data = await res.json();
      setSuggestions(data.suggestions);
    }
  };

  return (
    <div className="search-container">
      <input
        type="text"
        placeholder="Search food..."
        value={query}
        onChange={(e) => handleSearch(e.target.value)}
      />

      {suggestions.length > 0 && (
        <ul className="suggestions-list">
          {suggestions.map((item) => (
            <li key={item}>{item}</li>
          ))}
        </ul>
      )}
    </div>
```

```
  );
};

export default AutocompleteSearch;
```

✅ Backend (Node.js + Express) - AI API Route

Here we use an **LLM endpoint** (Example: GPT / Gemini / Local NLP Engine)

```
app.get("/ai-search", async (req, res) => {
  const query = req.query.q;

  const suggestions = await aiModel.generateSuggestions(query);

  res.json({ suggestions });
});
```

🔗 Data Sources for Smarter Results

Source	Usage
Menu Database	Suggest food items available
Previous Orders	Personalized suggestions
Trending Foods	Enhance new item discovery

📸 Screenshots (Your screenshots go here)

📌 Search Bar UI
📌 Live Suggestions Dropdown
📌 Corrected spelling recommendation

✅ Benefits in Food Delivery App

Benefit	Impact

Faster ordering	Reduces search time
Personalized UX	More relevant results
Modern AI feature	Boosts evaluation score
Competitive design	Similar to Swiggy / Zomato