

AI Pizza Delivery Service – Project Report

Team Member

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Project Objective

This project aimed to design and implement an AI-powered pizza ordering assistant. The bot converses with users to take pizza orders, including type, size, toppings, dietary preferences, name & address. The order is then summarized in a structured format and spoken back to the user.

Implementation Summary

The assistant is implemented in python. It runs in the terminal and interacts via text input. It includes input validation, uses Google Text-to-Speech (gTTS) for voice response and outputs a JSON summary. An LLM model (FLAN-T5) is used for dynamic greeting.

Key Features

- Intelligent dialogue and input validation
- Step-by-step conversational flow
- Spoken confirmation using gTTS
- Structured order output in JSON
- Terminal interface with colour feedback
- Editable final confirmation step

Technologies Used

Technology	Purpose
Python 3.13	Main programming language
Transformers (FLAN-T5)	Smart greeting via text generation
gTTS	Text-to-speech voice output
Colorama	Terminal colour formatting
JSON & OS	Order structure and playback

Sample Dialogue

```
C:\Users\Shriya Shetty\Pizza Delivery>python pizza_bot.py
PizzaBot: Hello! I'm your pizza assistant. Let's build your order!
PizzaBot: I'd like to ask the customer if they'd like to order a pizza.
PizzaBot: What pizza would you like?
You: I want a Margherita
PizzaBot: What size do you want? (small, medium, large)
You: small
PizzaBot: Any extra toppings?
You: olives & extra cheese
PizzaBot: Do you have any allergies or dietary restrictions?
You: no allergy
PizzaBot: Any special requests? (e.g. very spicy, no onions)
You: no onions
PizzaBot: Can I have your name?
You: Shriya Shetty
PizzaBot: What's your delivery address?
You: Mungersdorfer

PizzaBot: Here's your final order:
Pizza: Margherita
Size: small
Toppings: olives & extra cheese
Allergies: no allergy
Special Requests: no onions
Name: Shriya Shetty
Delivery Address: Mungersdorfer

PizzaBot: Does everything look correct? (yes/no): no
PizzaBot: What would you like to change? (pizza, size, toppings, allergies, special requests, name, address)
You: allergies
PizzaBot: Please enter the new allergies:
You: nut allergy
```

```
PizzaBot: Here's your final order:
Pizza: Margherita
Size: small
Toppings: olives & extra cheese
Allergies: nut allergy
Special Requests: no onions
Name: Shriya Shetty
Delivery Address: Mungersdorfer

PizzaBot: Does everything look correct? (yes/no): yes

PizzaBot: Awesome! Your order is confirmed. We'll start preparing your delicious pizza right away!

Speaking summary...
```

Structured Order Output (JSON)

```
1  {
2      "pizza": "Margherita",
3      "size": "small",
4      "toppings": [
5          "olives & extra cheese"
6      ],
7      "allergies": "nut allergy",
8      "specialRequests": "no onions",
9      "name": "Shriya Shetty",
10     "address": "Mungersdorfer"
11 }
```

Challenges and Reflection

Initially, multilingual input was tested using translation tools but was removed for simplicity and better performance. The final bot uses English for interaction, ensures proper data collection and uses gTTS for voice output. All features were demonstrated in the screencast.