

# RECIPE GENERATOR CHATBOT APPLICATION

## AIM:

The aim is to develop a recipe generator chatbot powered by artificial intelligence that provides step by step instructions for a given recipe name, enabling users to quickly access cooking instructions and prepare meals efficiently.

## DESCRIPTION:

The Python script serves as a versatile recipe chatbot, streamlining the cooking experience by providing step-by-step instructions for a diverse array of dishes. It utilizes dictionaries to organize recipes, encompassing both general and Indian cuisine, thereby expanding its culinary offerings. Central to the script is the `get_recipe_steps()` function, which retrieves and displays cooking instructions based on user input. It ensures a seamless interaction by checking the availability of the requested recipe and providing clear feedback if the recipe is not found. Facilitating user engagement is the `chatbot()` function, orchestrating the primary interaction loop. Upon initiation, the chatbot delivers a friendly welcome message and usage instructions. Users input recipe names, triggering the retrieval of cooking instructions through the `get_recipe_steps()` function. The chatbot iterates this process until the user opts to exit, enhancing usability and interaction. A conditional check ensures that the `chatbot()` function executes only when the script is directly run, enhancing modularity and ease of integration into larger projects or systems. Overall, this Python script offers a straightforward yet robust solution for accessing recipe instructions, empowering users to explore culinary creativity with confidence and convenience. Its intuitive design and comprehensive recipe database make it a valuable resource for cooks of all skill levels.

## CODE:

```
import random
```

```
# Dictionary of recipe titles, steps, and ingredients
```

```
recipes = {
```

```
    "pan-fried chicken": {
```

```
        "steps": [
```

```
            "1. Marinate chicken with salt, pepper, and lemon juice for 30 minutes.",
```

```
            "2. Heat oil in a pan and add chicken pieces.",
```

```
            "3. Cook until golden brown on both sides.",
```

```
            "4. Serve hot with your favorite sides."
```

```
        ],
```

```
        "ingredients": ["chicken", "salt", "pepper", "lemon juice", "oil"]
```

```
    },
```

```
    "spaghetti carbonara": {
```

```
        "steps": [
```

```
            "1. Cook spaghetti according to package instructions.",
```

```
            "2. Fry bacon until crispy, then remove from pan and set aside.",
```

```
            "3. In the same pan, sauté garlic in bacon fat until golden.",
```

```
            "4. Whisk eggs, Parmesan cheese, and black pepper in a bowl.",
```

```
            "5. Drain spaghetti and add to the pan with garlic.",
```

```
            "6. Quickly toss spaghetti with egg mixture until creamy.",
```

```
            "7. Crumble bacon over the top and serve immediately."
```

```
        ],
```

```
    "ingredients": ["spaghetti", "bacon", "garlic", "eggs", "Parmesan cheese", "black pepper"]
```

```
  },
```

```
  # Add more recipes as needed
```

```
}
```

```
additional_indian_recipes = {
```

```
  "chicken biryani": {
```

```
    "steps": [
```

```
      "1. Marinate chicken with yogurt, ginger-garlic paste, and biryani masala for 1-2 hours.",
```

```
      "2. Cook basmati rice until partially cooked, then drain and set aside.",
```

```
      "3. In a large pot, heat ghee and sauté onions until golden brown.",
```

```
      "4. Add marinated chicken and cook until browned.",
```

```
      "5. Layer partially cooked rice over the chicken.",
```

```
      "6. Sprinkle saffron-infused milk, fried onions, mint leaves, and coriander leaves over the rice.",
```

```
      "7. Cover and cook over low heat until the chicken is cooked through and the rice is fully cooked.",
```

```
      "8. Serve hot with raita.",
```

```
    ],
```

```
    "ingredients": ["chicken", "yogurt", "ginger-garlic paste", "biryani masala", "basmati rice",
```

```
                    "ghee", "onions", "saffron", "milk", "mint leaves", "coriander leaves", "raita"]
```

```
  },
```

```

"paneer tikka": {
    "steps": [
        "1. Marinate paneer cubes with yogurt, ginger-garlic paste, tikka masala, and lemon juice for 1-2 hours.",
        "2. Thread marinated paneer onto skewers, alternating with bell peppers, onions, and tomatoes.",
        "3. Grill skewers on a preheated grill or barbecue until paneer is golden brown and vegetables are tender.",
        "4. Serve hot with mint chutney.",
    ],
    "ingredients": ["paneer", "yogurt", "ginger-garlic paste", "tikka masala", "lemon juice", "bell peppers",
        "onions", "tomatoes", "mint chutney"]
}, //additional recipes

```

```

# Update the recipes dictionary with the additional Indian recipes
recipes.update(additional_indian_recipes)

```

```

# Function to provide steps for a specific recipe
def get_recipe_steps(recipe_name):
    if recipe_name in recipes:
        print(f"Here are the steps to prepare {recipe_name}:")
        for step in recipes[recipe_name]["steps"]:
            print(step)
    else:
        print("Sorry, I don't have the recipe for that dish.")

```

```
# Function to provide ingredients for a specific recipe

def get_recipe_ingredients(recipe_name):

    if recipe_name in recipes:

        print(f"The ingredients for {recipe_name} are:")

        for ingredient in recipes[recipe_name]["ingredients"]:

            print("- " + ingredient)

    else:

        print("Sorry, I don't have the recipe for that dish.")
```

```
# Function to generate a random recipe

def get_random_recipe():

    random_recipe = random.choice(list(recipes.keys()))

    return random_recipe
```

```
# Function to search for recipes based on ingredients

def search_recipe_by_ingredient(ingredient):

    matching_recipes = []

    for recipe, data in recipes.items():

        if ingredient in data["ingredients"]:

            matching_recipes.append(recipe)

    return matching_recipes
```

```
# Function to get the total count of recipes available
```

```
def get_recipe_count():
```

```
    return len(recipes)
```

```
# Updated chatbot function to handle new features
```

```
def chatbot():
```

```
    print("Welcome to the Recipe Chatbot!")
```

```
    print("You can ask me for recipe steps by providing the name of the dish.")
```

```
    print("Additionally, you can ask for a random recipe, search for recipes based on  
ingredients, "
```

```
        "get the ingredients of a specific recipe, or ask for the total count of recipes  
available.")
```

```
    print("Type 'exit' to end the conversation.")
```

```
while True:
```

```
    user_input = input("You: ").lower()
```

```
    if user_input == "exit":
```

```
        print("Chatbot: Goodbye! Have a great day.")
```

```
        break
```

```
    elif user_input == "random":
```

```
        random_recipe = get_random_recipe()
```

```
        get_recipe_steps(random_recipe)
```

```
elif user_input.startswith("search"):
    _, ingredient = user_input.split(maxsplit=1)
    matching_recipes = search_recipe_by_ingredient(ingredient)
    if matching_recipes:
        print(f"Recipes containing '{ingredient}':")
        for recipe in matching_recipes:
            print(recipe)
            get_recipe_steps(recipe)
    else:
        print(f"No recipes found containing '{ingredient}'.")
elif user_input == "count":
    total_count = get_recipe_count()
    print(f"There are {total_count} recipes available.")
elif user_input.startswith("ingredients"):
    _, recipe_name = user_input.split(maxsplit=1)
    get_recipe_ingredients(recipe_name)
else:
    get_recipe_steps(user_input)
```

```
if __name__ == "__main__":
    chatbot()
```

# OUTPUT:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
PS C:\Users\student.CSE.000\Desktop\chatbot2> python recipe_generator.py
Welcome to the Recipe Chatbot!
You can ask me for recipe steps by providing the name of the dish.
Additionally, you can ask for a random recipe, search for recipes based on ingredients, get the ingredients of a specific recipe, or ask for the total count of recipes available.
Type 'exit' to end the conversation.
You: fish curry
Here are the steps to prepare fish curry:
1. Marinate fish pieces with turmeric and salt.
2. Heat oil in a pan and fry fish pieces until golden brown; remove and set aside.
3. In the same pan, temper with mustard seeds and curry leaves.
4. Add chopped onions and cook until golden brown.
5. Stir in chopped tomatoes and cook until softened.
6. Add coconut milk, tamarind paste, spices, and salt; simmer for a few minutes.
7. Add fried fish pieces and simmer until heated through.
8. Garnish with chopped coriander leaves and serve hot with rice.
You: ingredients palak paneer
The ingredients for palak paneer are:
- spinach
- green chillies
- oil
- onions
- ginger-garlic paste
- paneer
- garam masala
- cream
- naan
- rice

You: search yogurt
Recipes containing 'yogurt':
chicken biryani
Here are the steps to prepare chicken biryani:
1. Marinate chicken with yogurt, ginger-garlic paste, and biryani masala for 1-2 hours.
2. Cook basmati rice until partially cooked, then drain and set aside.
3. In a large pot, heat ghee and sauté onions until golden brown.
4. Add marinated chicken and cook until browned.
5. Layer partially cooked rice over the chicken.
6. Sprinkle saffron-infused milk, fried onions, mint leaves, and coriander leaves over the rice.
7. Cover and cook over low heat until the chicken is cooked through and the rice is fully cooked.
8. Serve hot with raita.
paneer tikka
Here are the steps to prepare paneer tikka:
1. Marinate paneer cubes with yogurt, ginger-garlic paste, tikka masala, and lemon juice for 1-2 hours.
2. Thread marinated paneer onto skewers, alternating with bell peppers, onions, and tomatoes.
3. Grill skewers on a preheated grill or barbecue until paneer is golden brown and vegetables are tender.
4. Serve hot with mint chutney.

You: random
Here are the steps to prepare aloo gobi:
1. Heat oil in a pan and temper with cumin seeds.
2. Add chopped onions and cook until golden brown.
3. Stir in ginger-garlic paste and cook until fragrant.
4. Add chopped tomatoes, turmeric, and other spices; cook until tomatoes are softened.
5. Add diced potatoes and cauliflower florets; mix well.
6. Cover and cook until vegetables are tender.
7. Garnish with chopped coriander leaves and serve hot with roti or rice.
You: count
There are 27 recipes available.
You: exit
Chatbot: Goodbye! Have a great day.
PS C:\Users\student.CSE.000\Desktop\chatbot2> 
```



