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import ipywidgets as widgets
from IPython.display import display
import random

# Recipe database: Recipes categorized by mood
recipes_db = {
    'happy': [
        {"name": "Chocolate Cake", "ingredients": ["flour", "chocolate", "sugar", "eggs", "butter", "vanilla extract"]},
        {"name": "Fruit Salad", "ingredients": ["apples", "bananas", "oranges", "grapes", "strawberries"]},
        {"name": "Smoothie Bowl", "ingredients": ["banana", "blueberries", "mango", "spinach", "almond milk"]},
    ],
    'sad': [
        {"name": "Warm Soup", "ingredients": ["broth", "carrots", "potatoes", "onions", "salt", "pepper"]},
        {"name": "Pasta with Tomato Sauce", "ingredients": ["pasta", "tomato sauce", "cheese", "basil", "garlic"]},
        {"name": "Mac & Cheese", "ingredients": ["pasta", "cheese", "butter", "milk", "salt", "pepper"]},
    ],
    'stressed': [
        {"name": "Green Smoothie", "ingredients": ["spinach", "banana", "almond milk", "ice", "honey"]},
        {"name": "Avocado Toast", "ingredients": ["avocado", "whole wheat bread", "lettuce", "tomato", "cheese"]},
        {"name": "Yogurt with Honey", "ingredients": ["greek yogurt", "honey", "blueberries", "granola"]},
    ],
    'energetic': [
        {"name": "Protein Shake", "ingredients": ["protein powder", "almond milk", "ice", "banana", "spinach"]},
        {"name": "Oatmeal with Berries", "ingredients": ["oats", "berries", "milk", "honey", "cinnamon"]},
        {"name": "Egg & Spinach Wrap", "ingredients": ["egg", "spinach", "whole wheat wrap", "cheese", "tomato"]},
    ]
}

# Create widgets
mood_label = widgets.Label("Enter your mood (happy, sad, stressed, energetic)")
mood_entry = widgets.Text(placeholder="Enter mood here")
suggest_button = widgets.Button(description="Suggest Food")
result_output = widgets.Output()

# Function to suggest food based on the user's mood
def suggest_food(b):
    with result_output:
        result_output.clear_output() # Clear previous output
        mood = mood_entry.value.lower()

        # Validate mood input
        if mood not in recipes_db:
            print("Please enter a valid mood: happy, sad, stressed, or energetic")
            return

        # Get a random recipe based on the mood
        recipe = random.choice(recipes_db[mood])

        # Display the result
        print(f"Dish: {recipe['name']}") # Dish name
        print(f"Ingredients: {', '.join(recipe['ingredients'])}") # Ingredients
        print(f"Benefit: {recipe['benefit']}") # Benefit

# Link the button click to the function
suggest_button.on_click(suggest_food)

# Arrange and display the widgets
display(mood_label, mood_entry, suggest_button, result_output)

```

Enter your mood (happy, sad, stressed, energetic):

Sad

Suggest Food

Dish: Mac & Cheese

Ingredients: pasta, cheese, butter, milk

Benefit: Classic comfort food to soothe the soul.