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# simple_python_ai_agent.py
# Simple Python AI Agent using Semantic Kernel-style structure

class Kernel:
    def __init__(self):
        self.skills = {}

    def register_skill(self, name, function):
        self.skills[name] = function

    def run(self, skill_name, *args):
        if skill_name in self.skills:
            return self.skills[skill_name](*args)
        else:
            return f"Skill '{skill_name}' not found."

# === Define Skills ===

def greet(user_name):
    return f"Hello, {user_name}! I'm your Simple Python AI Agent."

def add_numbers(a, b):
    try:
        result = float(a) + float(b)
        return f"The sum of {a} and {b} is {result}."
    except ValueError:
        return "Please provide valid numbers."

def subtract_numbers(a, b):
    try:
        result = float(a) - float(b)
        return f"The difference between {a} and {b} is {result}."
    except ValueError:
        return "Please provide valid numbers."

def multiply_numbers(a, b):
    try:
        result = float(a) * float(b)
        return f"The product of {a} and {b} is {result}."
    except ValueError:
        return "Please provide valid numbers."

def farewell(user_name):
    return f"Goodbye, {user_name}! Have a great day."

# === Initialize Kernel and Register Skills ===
agent_kernel = Kernel()
agent_kernel.register_skill("greet", greet)
agent_kernel.register_skill("add", add_numbers)
agent_kernel.register_skill("subtract", subtract_numbers)
agent_kernel.register_skill("multiply", multiply_numbers)
agent_kernel.register_skill("farewell", farewell)

# === Simple Command-Line Interface ===

def main():
    print("== Simple Python AI Agent ==")
    user_name = input("Enter your name: ")
    print(agent_kernel.run("greet", user_name))

    while True:
        print("\nAvailable skills: add, subtract, multiply, farewell")
        command = input("Choose a skill or type 'exit' to quit: ").lower()

        if command == "exit":
            print("Exiting agent. Goodbye!")
            break

        elif command in ["add", "subtract", "multiply"]:
            a = input("Enter first number: ")
            b = input("Enter second number: ")
            print(agent_kernel.run(command, a, b))

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    elif command == "farewell":  
        print(agent_kernel.run("farewell", user_name))  
  
    else:  
        print("Unknown command. Try again.")  
  
if __name__ == "__main__":  
    main()
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==== Simple Python AI Agent ====  
Enter your name: judith  
Hello, judith! I'm your Simple Python AI Agent.
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Available skills: add, subtract, multiply, farewell  
Choose a skill or type 'exit' to quit: add  
Enter first number: 4  
Enter second number: 3  
The sum of 4 and 3 is 7.0.
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```
Available skills: add, subtract, multiply, farewell  
Choose a skill or type 'exit' to quit: subtract  
Enter first number: 3  
Enter second number: 6  
The difference between 3 and 6 is -3.0.
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```
Available skills: add, subtract, multiply, farewell  
Choose a skill or type 'exit' to quit: multiply  
Enter first number: 5  
Enter second number: 5  
The product of 5 and 5 is 25.0.
```

```
Available skills: add, subtract, multiply, farewell  
Choose a skill or type 'exit' to quit: farewell  
Unknown command. Try again.
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```
Available skills: add, subtract, multiply, farewell  
Choose a skill or type 'exit' to quit: quit  
Unknown command. Try again.
```

```
Available skills: add, subtract, multiply, farewell  
Choose a skill or type 'exit' to quit: exit  
Exiting agent. Goodbye!
```