**Docker Setup Instructions**

**Files You Need**

Create these 4 files in project folder:

multi-agent-system/

├── multi\_agent\_system.py # Main code (from previous artifact)

├── requirements.txt # Python dependencies

├── Dockerfile # Container setup

├── docker-compose.yaml # Docker orchestration

├── README.md # Documentation

└── outputs/ # Will be created automatically

**How to Run with Docker**

**Step 1: Install Docker**

* **Windows/Mac**: Download Docker Desktop from docker.com
* **Linux**: Install docker and docker-compose

**Step 2: Build and Run**

Open terminal in project folder and run:

# Build and start the container

docker-compose up --build

# Or run in background

docker-compose up --build -d

**Step 3: View Results**

The system will automatically:

1. Run all 5 test scenarios
2. Show agent collaboration in terminal
3. Save any outputs to ./outputs/ folder

**Step 4: Stop Container**

# Stop the container

docker-compose down

**Alternative Docker Commands**

If you prefer using Docker directly:

# Build the image

docker build -t multi-agent-system .

# Run the container

docker run --name multi-agent-chat -v $(pwd)/outputs:/app/outputs multi-agent-system

# Clean up

docker rm multi-agent-chat

**What Docker Does**

1. **Creates isolated environment** with Python 3.9
2. **Installs dependencies** (none needed currently)
3. **Runs multi-agent system** automatically
4. **Saves outputs** to local outputs/ folder
5. **Shows all agent interactions** in terminal

**Troubleshooting**

**Problem**: docker-compose command not found

* **Solution**: Install Docker Compose or use docker compose (newer versions)

**Problem**: Permission denied

* **Solution**: Run with sudo on Linux, or add user to docker group

**Problem**: Container exits immediately

* **Solution**: Check logs with docker-compose logs multi-agent-system

**Problem**: Can't see output

* **Solution**: Make sure PYTHONUNBUFFERED=1 is set in docker-compose.yaml

**Expected Docker Output**

$ docker-compose up --build

[+] Building 2.3s (10/10) FINISHED

[+] Running 1/1

✔ Container multi-agent-chat-system Started

🚀 Multi-Agent System - Running Sample Test Scenarios

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[COORDINATOR] Multi-agent system initialized

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SCENARIO 1: Simple Query

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[COORDINATOR] Processing: What are the main types of neural networks?

[RESEARCH AGENT] Searching: What are the main types of neural networks?

[RESEARCH AGENT] Found 1 results

[COORDINATOR] Used agents: ResearchAgent

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🎉 All 5 test scenarios completed successfully!

This setup makes your project easily runnable on any system with Docker!