AI Study Planner Agent

README and User Guide

1 Introduction

The **AI Study Planner Agent** is a lightweight prototype that automates scheduling and execution of study tasks. It demonstrates:

- Multi-agent collaboration (Planner + Executor).
- Integration with knowledge retrieval (RAG).
- Dual interfaces: CLI and Streamlit.
- Support for batch execution and monitoring.

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2 Project Structure

```
ai-agent-study-planner/
 ai_agent.py
 multi_agent.py
 multi_agent_rag.py
 ai_agent_ui.py
 multi_agent_ui.py
 multi_agent_rag_ui.py
 multi_agent_rag_ui_corrected.py
 System_Design_Document.tex
 Originality_Impact.tex
 Interaction_Logs/
 screenshots/
 README.tex
```

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3 Requirements and Installation

Minimal (no installs)

The CLI scripts (`ai_agent.py`, `multi_agent.py`, `multi_agent_rag.py`) work with Python 3.8+ and require no external libraries.

Recommended (Streamlit UI)

To run Streamlit apps:

```
pip install streamlit
```

Optional (Extended RAG features)

The extended UI (`multi_agent_rag_ui_corrected.py`) can optionally use embeddings and PDF ingestion:

```
pip install numpy PyPDF2
pip install sentence-transformers
pip install faiss-cpu   # optional, platform-specific
```

If FAISS is unavailable, the system falls back to substring-based retrieval.

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4 How to Run

CLI

```
python ai_agent.py
python multi_agent.py
python multi_agent_rag.py
```

Streamlit

```
streamlit run ai_agent_ui.py
streamlit run multi_agent_ui.py
streamlit run multi_agent_rag_ui.py
streamlit run multi_agent_rag_ui_corrected.py
```

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5 Usage Examples

CLI Example

```
 AI Study Planner Agent
Enter your tasks (type 'done' when finished):
Task name: Computer network lab exam
Duration (in minutes): 30
Importance (1-5): 5
Deadline (YYYY-MM-DD, or leave blank):
Task name: done

 Today's Plan:
09:00 - 09:30: Computer network lab exam
```

Multi-Agent RAG Example

```
 Planned Schedule
09:00 - 10:00: Study Machine Learning
10:00 - 10:45: Review Compiler Design

 Running Executor Agent...
 Starting: Study Machine Learning at 09:00
 Study Note: Machine learning is the study of algorithms
that improve from experience.
 Finished: Study Machine Learning at 10:00
```

Streamlit

- Enter tasks in the sidebar form.
- Click "Generate Schedule" to display the plan.
- Monitor execution logs in real-time.
- Upload documents in the extended RAG UI for note retrieval.

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6 Future Work

- Calendar and notification integration.
- Adaptive scheduling with AI reasoning.
- Collaboration features for study groups.
- Richer retrieval methods beyond simple RAG.

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7 Submission Checklist

Include the following in your submission:

- Source code files (`.py`).
- System Design Document.
- Originality and Social Impact Document.
- Interaction Logs.
- Screenshots or demo video.
- README (this document).

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8 License

This project is provided for academic and demonstration purposes. Free to use with attribution.