AI Learning Planner Agent — Final System Design

Overview

This AI agent helps users achieve learning goals in a structured and adaptive manner by creating personalized study plans, evaluating feasibility, learning from feedback, and dynamically revising future schedules.

End-to-End Agent Workflow

- User provides goal, deadline, time constraints, and preferences
- Goal Understanding Module structures the learning objective
- Knowledge Retriever gathers topic hierarchies and resources
- Learning Path Planner sequences topics based on prerequisites
- Effort Estimator predicts time and difficulty
- Scheduler creates day-wise plan
- Feasibility Evaluator validates workload balance
- Plan delivered to user

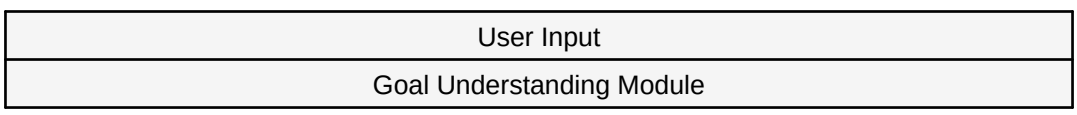
Adaptive Feedback Loop

- User gives feedback like 'too hard' or 'too fast'
- Feedback Analyzer detects learning issues
- Plan Revision Engine adjusts future schedule
- Memory Store updates learning profile
- Revised plan generated

Feasibility Evaluation Strategy

- Limit daily workload within user time capacity
- Avoid consecutive high-difficulty topics
- Insert revision buffers
- Validate deadline feasibility

System Architecture Flow Diagram



Learning Path Planner
Effort Estimator
Scheduler
Feasibility Evaluator
Final Study Plan
User Feedback
Feedback Analyzer
Plan Revision Engine
Updated Study Plan

Sample 7-Day Study Plan (Example: Data Science Beginner)

Day	Topics	Estimated Time
Day 1	Python Basics	2 hrs
Day 2	NumPy Fundamentals	2 hrs
Day 3	Pandas Basics	2 hrs
Day 4	Data Visualization Intro	2 hrs
Day 5	Statistics Basics	2 hrs
Day 6	Mini Practice Project	3 hrs
Day 7	Revision + Quiz	2 hrs