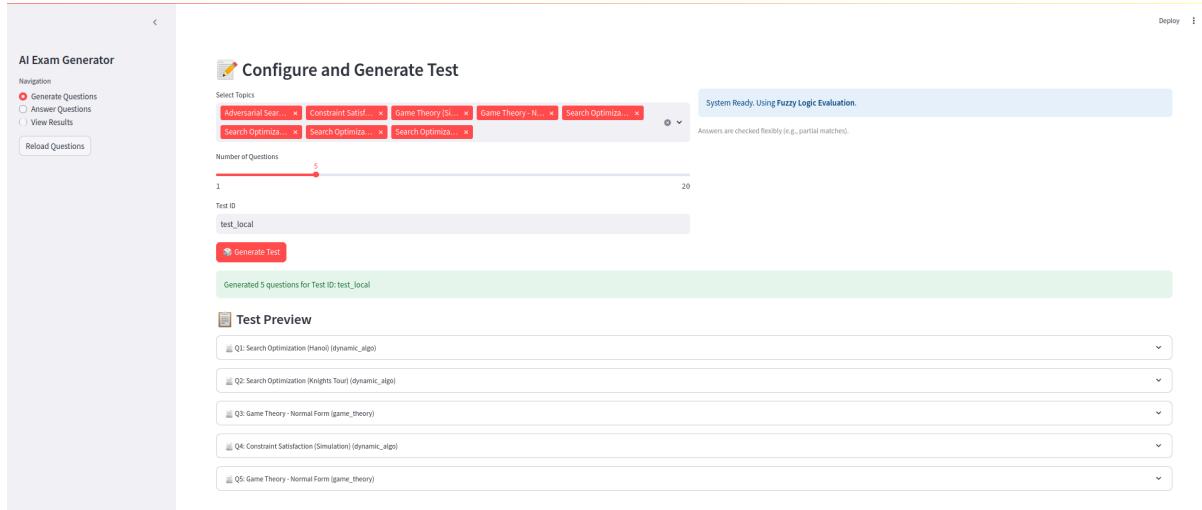


AI Exam Generator - User Manual

Welcome to the **AI Exam Generator** user manual. This application allows you to create custom Artificial Intelligence exams, answer theory and simulation questions, and receive instant feedback on your performance.

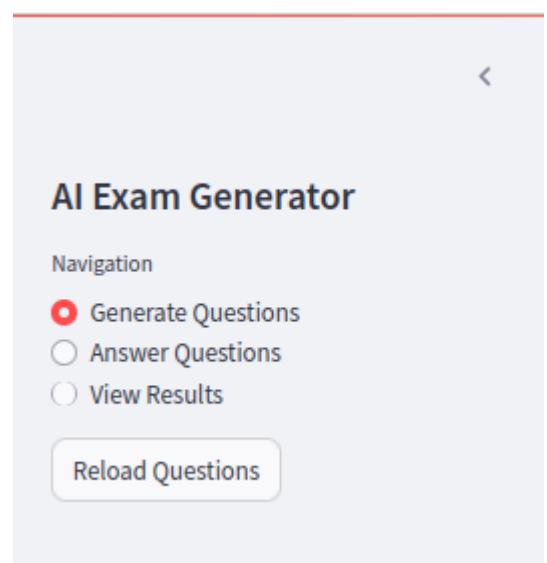
1. App Interface View



2. Navigation Menu (Sidebar)

On the left side of the screen, you will find the **Main Menu**. This sidebar allows you to navigate through the three main phases of the exam process.

- **Generate Questions:** The starting point. Here you configure and create your test.
- **Answer Questions:** Where you take the exam and submit your answers.
- **View Results:** Where you review your scores, AI feedback, and correct answers.
- **Reload Questions (Button):** Use this button to refresh the question database without restarting the app (useful if you modify the JSON file manually).



3. Generating an Exam (Tab: "Generate Questions")

This is the first screen you will see. Here you define the parameters for your test.

Test Configuration

- **Select Topics:** A multi-select dropdown menu. You can choose specific topics such as "Game Theory", "Search Optimization", or "Constraint Satisfaction". By default, all topics are selected.
- **Number of Questions:** A slider to choose how many questions you want in your exam (from 1 to 20).
- **Test ID:** A text field to give your session a unique name (e.g., "Practice_Exam_1"). This is useful for tracking your results later.
- **"Generate Test" Button:** Pressing it selects random questions from the database based on your filters.

Configure and Generate Test

Select Topics

Adversarial Sear... × Constraint Satisfi... × Game Theory (Si... × Game Theory - N... × Search Optimiza... ×
Search Optimiza... × Search Optimiza... × Search Optimiza... ×

Number of Questions

120

Test ID

Generate Test

Test Preview

Immediately after generating, a list of the selected questions will appear below the button.

- **Icons:**
 - Standard theory question.
 - Simulation question (runs C++ code in real-time).

* You can expand each question to read the problem statement before starting.

Generated 5 questions for Test ID: test_local

Test Preview

Q1: Game Theory - Normal Form (game_theory)
Payoff matrix:

	Player 2	L	R
Player 1	U	2,3	4,1
	D	3,2	1,4

Does a pure Nash equilibrium exist?
Expected: None (Best responses cycle)

Q2: Constraint Satisfaction (Simulation) (dynamic_algo)

Q3: Search Optimization (Knights Tour) (dynamic_algo)

Q4: Search Optimization (Hanoi) (dynamic_algo)

Q5: Search Optimization (Graph Coloring) (dynamic_algo)

4. Taking the Exam (Tab: "Answer Questions")

Once the test is generated, go to this tab to start answering.

Answer Area

The screen displays questions one by one.

- **Navigation:** Use the " Previous" and "Next " buttons to move between questions.
- **Question Text:** Displays the problem statement. Complex problems include formatted diagrams (like Minimax trees or Game Theory matrices).
- **Your Answer:** A large text box where you type your solution.
 - **Note:** The system uses **flexible evaluation**. You don't need to match the answer word-for-word. For example, if the answer is "Backtracking", the system accepts "I think it is Backtracking" or "The backtracking algorithm".

Save & Evaluate

- **Save & Evaluate** Button: It is crucial to press this button after answering each question.
 - When pressed, the AI evaluates your answer instantly.
 - You will see your **Score** in color (Green = Good, Orange = Fair, Red = Poor).
 - You will receive immediate **Feedback** explaining why your answer is correct or incorrect.

Take Exam

Question 1 of 5

Topic: Game Theory - Normal Form | Difficulty: medium

Payoff matrix:

		Player 2	
		L	R
Player 1	U	2, 3	4, 1
	D	3, 2	1, 4

Does a pure Nash equilibrium exist?

Your Answer

No

Save & Evaluate

Next

Score: 100%

- ✓ Exact Answer.

5. Reviewing Results (Tab: "View Results")

When you finish, go to this section to see a summary of your performance.

Metrics Dashboard

- **Average Score:** Your overall grade for the exam (0-100%).
- **Question Breakdown:** An expandable list of all test questions. Opening one reveals:
 - **Your Answer:** What you wrote.
 - **AI Feedback:** The detailed analysis from the system.
 - **Ideal Answer / Expected:** The official correct answer (or the result of the C++ simulation). This is perfect for studying and correcting mistakes.

The screenshot shows the Metrics Dashboard interface. At the top, it displays an average score of 100.0%. Below this, a specific question is detailed:

Q: Game Theory - Normal Form - 100%
Question: Payoff matrix:

		Player 2	
		L	R
Player 1	U	2,3	4,1
	D	3,2	1,4

Below the payoff matrix, there is a question: "Does a pure Nash equilibrium exist?". The user's response is "No".

AI Feedback:

- ✓ Exact Answer.

Ideal Answer: None

For Simulation Questions

Some questions (marked with "Simulation" or "Run...") require the system to execute real C++ code in the background (e.g., Traveling Salesperson, N-Queens, Graph Coloring).

- **Don't worry:** The app runs the code automatically when you generate the test.
- **Your task:** Simply read the problem statement (e.g., *"For an 8x8 board, which is the winner algorithm?"*) and answer based on your theoretical knowledge or what you infer from the simulation context.