



PDF STUDY MATERIAL • UNCODEMY

AI Agents Projects

Notes, roadmaps and practice material, curated by the Uncodemy trainer team.



uncodemy.com/ai-agents-projects-pdf





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Quick answer



Good agent projects use a narrow goal, a few real tools, clear limits and an evaluation set. Below are project ideas, the skills each one builds and how to show them properly in a portfolio.



Clear concepts

Short, plain-language explanations



Hands-on practice

Examples and exercises to try yourself



Job-focused prep

Questions and checklists for interviews

AI agent project ideas

Project	Tools the agent uses	Skills practised
Document Q&A assistant	Vector search over your PDFs	Embeddings, RAG, citations
Research assistant	Web or document search, note storage	Planning loop, summarising, source tracking
Customer-support triage agent	Ticket lookup, knowledge search	Classification, tool use, escalation rules
SQL assistant for analysts	Database schema, read-only query tool	Tool safety, validation, result checking
Meeting notes to action items	Transcript input, task list output	Structured output, evaluation
Code review helper	Repository diff reader	Context handling, limits, human approval

How to build any of them responsibly

1

Define one narrow goal and what success looks like.

2

Give the agent only the tools it needs, with read-only access first.

3

Set maximum steps and a cost limit.

4

Create 20 to 50 test tasks, including ones that should be refused.

5

Log tool calls and review failures.

6

Publish a README with the goal, design, results and limits.

What to show in a portfolio



The task and why it matters.



A short diagram of the agent loop and tools.



Evaluation results, including failures.



Safety choices: permissions, limits, approvals.

Common mistakes



Broad goals: 'an agent that does everything' fails.



No evaluation: you cannot say whether it works.



Unrestricted tools, especially write or delete access.



Hiding failures: honest limits are a strength.

How to use these PDFs



STEP 1

Read the roadmap

Start at the stage that matches your level.



STEP 2

Practise each topic

Try it yourself instead of only reading.



STEP 3

Revise key concepts

Use the tables before an interview or exam.



STEP 4

Move to the next stage

Go on when you can explain this one in your own words.

Your AI Agents Projects PDF set



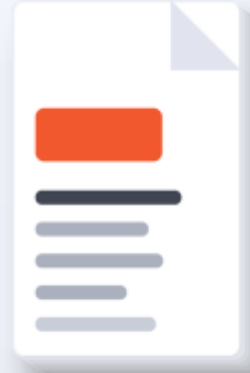
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Frequently asked questions



What are good AI agent projects for beginners?

A document Q&A assistant, a simple research assistant and a meeting-notes-to-action-items tool are good starters because the goals are narrow and results are easy to check.



How do I evaluate an AI agent project?

Build a set of test tasks with expected outcomes, include tasks that should be refused, run the agent on all of them and review failures by hand.



What tools can an AI agent use?

Any function you expose to it, such as search, a database query, a calculator or an API. Give each tool the minimum access it needs.

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