

AI Engineer - Code Homework Test

Time: 150 - 240 minutes recommended.

- Please use GPT OpenAI model, DON'T need to provide API KEY. We will use our own key.
- Provide the source code in a GitHub repository. If you cannot push to Github you can zip the source code file with .git
- Include a **README** file with instructions on how to set up and run the application.
- We advise **spending at least 150 - 240 minutes on the test** – if you want to spend more or less time on it, that's completely up to you.

Our **scoring** will be determined in 4 criterias:

- Readability
 - Maintainability
 - Extensibility
 - Logic
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The Assignment: "Support Ticket Triage Agent"

Scenario

Build an AI agent that triages incoming customer support tickets. The agent should:

1. **Classify** ticket urgency (critical/high/medium/low)
2. **Extract** key information (product, issue type, customer sentiment)
3. **Search a knowledge base** – find relevant FAQ/docs to help answer
4. **Decide** next action: auto-respond, route to specialist, or escalate to human
5. Use at least **2 tools** (e.g., check customer history, lookup knowledge base)

What to deliver

1. **Don't need to build a Chat UI on it, it can be a terminal console or API.**
2. **Working code** – Agent that processes sample tickets
3. **System prompt** – The instructions driving the agent
4. **Tool definitions** – Schema + implementation (can be mocked)
5. **Brief write-up (1 page max):**
 - Architecture decisions and why
 - What could go wrong and how you'd handle it

- How you'd evaluate this agent in production

Sample tickets provided

1) Customer info: Free plan (upgrade attempted), 4 months on free tier, first time contacting support

Message 1 (3 hours ago):

"My payment failed when I tried to upgrade to Pro. Can you **check** what's **wrong?**"

Message 2 (2 hours ago):

"I tried again with a different card. Now I see TWO pending charges but my account still shows Free plan??"

Message 3 (1 hour ago):

"Okay this is getting ridiculous. Just checked my bank app - I have THREE charges of \$29.99 now. None of them refunded. And I STILL don't have Pro access."

Message 4 (just now):

"HELLO?? **Is** anyone there??? I need this **fixed** NOW. I have a presentation **in** 2 hours **and** I need the Pro **export** features. **If** these charges aren't reversed by end of day I'm disputing all **of** them **with** my bank."

2) Customer info: Enterprise plan, Thailand region, 45 seats, 8 months customer, first critical issue

Message 1 (2 hours ago):

"ระบบเข้าไม่ได้ครับ ขึ้น error 500"

(Thai: Can't access the system, showing error 500)

Message 2 (1.5 hours ago):

"ลองหลายเครื่องแล้ว ทั้ง Chrome, Safari, Firefox ผลเหมือนกันหมด เพื่อนร่วมงานก็เข้าไม่ได้เหมือนกัน"

(Thai: Tried multiple machines - Chrome, Safari, Firefox - same result.
Coworkers also can't access)

Message 3 (45 mins ago):

"ตอนนี้ลูกค้าโวยเข้ามาเยอะมาก เรามี demo กับลูกค้ารายใหญ่บ่ายนี้ ถ้าระบบไม่กลับมา deal นี้อาจจะหลุด"

(Thai: Customers are flooding in with complaints now. We have a demo with a major client this afternoon. If the system doesn't come back, we might lose this deal)

Message 4 (just now):

"เช็ค status.company.com แล้ว บอกว่า all systems operational แต่เราใช้งานไม่ได้จริงๆ ช่วยเช็คให้หน่อยได้ไหมครับ region Asia มีปัญหาหรือเปล่า?"

(Thai: Checked status.company.com - it says all systems operational, but we really can't use it. Can you please check? Is there an issue with the Asia region?)

3) Customer info: Pro plan, 5 months customer, active user (daily logins), no previous support tickets

Message 1 (2 days ago):

"Hey, just wondering if you support dark mode? No rush 😊"

Message 2 (1 day ago):

"Thanks for the reply! Oh nice, so it's in Settings > Appearance. Found it! But hmm I'm on Pro plan and I only see 'Light' and 'System Default' options. No dark mode toggle?"

Message 3 (1 day ago, 3 hours later):

"Okay so I switched to 'System Default' and my Mac is set to dark mode, but your app still shows light theme. Is this a bug or am I missing something?"

Message 4 (today):

"Also random question while I have you - is there a way to schedule dark mode? Like auto-switch at 6pm? Some apps have that. Would be cool if you guys added

it 🙄"