

11. Comparing Three Calls

Three calls each process 1,000 tokens, but split them differently. Input is priced at 2 cents per 100 tokens; output at 8 cents per 100 tokens. Fill in the cost for each call, then rank them cheapest to most expensive.

Step 1: Fill the cost column

Call	Input tokens	Output tokens	Cost
A	800	200	$800/100 \times 2 + 200/100 \times 8 = 32 \text{ cents}$
B	500	500	$500/100 \times 2 + 500/100 \times 8 = 50 \text{ cents}$
C	200	800	$200/100 \times 2 + 800/100 \times 8 = 68 \text{ cents}$

Step 2: Rank cheapest to most expensive

$A (32 \text{ cents}) < B (50 \text{ cents}) < C (68 \text{ cents})$

Practice 1

Three calls each process 1,200 tokens, but split them differently. Input is priced at 2 cents per 100 tokens; output at 8 cents per 100 tokens. Fill in the cost for each call, then rank them cheapest to most expensive.

Step 1: Fill the cost column

Call	Input tokens	Output tokens	Cost
A	300	900	
B	900	300	
C	600	600	

Step 2: Rank cheapest to most expensive

11. Comparing Three Calls (continued)

Practice 2

Three calls each process 1,500 tokens, but split them differently. Input is priced at 2 cents per 100 tokens; output at 8 cents per 100 tokens. Fill in the cost for each call, then rank them cheapest to most expensive.

Step 1: Fill the cost column

Call	Input tokens	Output tokens	Cost
A	900	600	
B	300	1200	
C	1200	300	

Step 2: Rank cheapest to most expensive

12. The Average Call

An AI agent handled three sample calls of 400, 500, and 600 tokens. It will run 200 calls today. Using the average call size, estimate the total tokens for the day.

Step 1: Average the sample calls

$$(400 + 500 + 600)/3 = 1,500/3 = 500 \text{ tokens}$$

Step 2: Multiply the average by the day's calls

$$500 \times 200 = 100,000 \text{ tokens}$$

Practice 1

An AI agent handled three sample calls of 300, 600, and 900 tokens. It will run 100 calls today. Using the average call size, estimate the total tokens for the day.

Step 1: Average the sample calls

Step 2: Multiply the average by the day's calls

Practice 2

An AI agent handled four sample calls of 200, 400, 400, and 600 tokens. It will run 500 calls today. Using the average call size, estimate the total tokens for the day.

Step 1: Average the sample calls

Step 2: Multiply the average by the day's calls

13. The System Prompt

The model replied “bonjour” to the user's message “translate hello into french”. The tokens before the user message are the system prompt. Label each token S for system prompt, U for user message, or O for output.

Step 1: Label each token S, U, or O

S	S	S	S	S	S
you	are	a	friendly	translation	agent
U	U	U	U	O	
translate	hello	into	french	bonjour	

Step 2: Count the tokens of each kind

system prompt = 6 tokens · user message = 4 tokens · output = 1 token

Practice 1

The model replied “here is the fix” to the user's message “fix the login bug”. The tokens before the user message are the system prompt. Label each token S for system prompt, U for user message, or O for output.

Step 1: Label each token S, U, or O

you	are	a	careful	coding	assistant	fix
the	login	bug	here	is	the	fix

Step 2: Count the tokens of each kind

13. The System Prompt (continued)

Practice 2

The model replied “it is three pm now” to the user's message “what is the time”. The tokens before the user message are the system prompt. Label each token S for system prompt, U for user message, or O for output.

Step 1: Label each token S, U, or O

you	answer	only	in	short	polite	sentences
-----	--------	------	----	-------	--------	-----------

what	is	the	time	it	is	three
------	----	-----	------	----	----	-------

pm	now
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Step 2: Count the tokens of each kind

14. The System Prompt Tax

An AI agent's system prompt is 250 tokens. Over 10 calls, at 2 cents per 100 tokens, what do those system-prompt tokens cost?

Step 1: Total system-prompt tokens over all calls

$$250 \times 10 = 2,500 \text{ tokens}$$

Step 2: Price those tokens

$$2,500/100 \times 2 = 50 \text{ cents}$$

Practice 1

An AI agent's system prompt is 300 tokens. Over 20 calls, at 2 cents per 100 tokens, what do those system-prompt tokens cost?

Step 1: Total system-prompt tokens over all calls

Step 2: Price those tokens

Practice 2

An AI agent's system prompt is 400 tokens. Over 5 calls, at 3 cents per 100 tokens, what do those system-prompt tokens cost?

Step 1: Total system-prompt tokens over all calls

Step 2: Price those tokens

15. Calls in a Budget

An AI agent has a daily budget of 240 cents. Each call has 400 input tokens and 100 output tokens. Input is priced at 2 cents per 100 tokens; output at 8 cents per 100 tokens. How many calls can it make in a day?

Step 1: Cost per call

$$400/100 \times 2 + 100/100 \times 8 = 8 + 8 = 16 \text{ cents}$$

Step 2: Calls in the budget

$$240/16 = 15 \text{ calls}$$

Practice 1

An AI agent has a daily budget of 440 cents. Each call has 300 input tokens and 200 output tokens. Input is priced at 2 cents per 100 tokens; output at 8 cents per 100 tokens. How many calls can it make in a day?

Step 1: Cost per call

Step 2: Calls in the budget

Practice 2

An AI agent has a daily budget of 280 cents. Each call has 200 input tokens and 300 output tokens. Input is priced at 2 cents per 100 tokens; output at 8 cents per 100 tokens. How many calls can it make in a day?

Step 1: Cost per call

Step 2: Calls in the budget