

CS I • 12.5 • The Parts List • paper day

Friday, October 23, 2026 • paper packet

Name _____

Period _____

Today is on paper. No computers. Read each section, then answer its items on your **bubble sheet**.

Every item has one best answer, A to E.

Fill each bubble completely in pencil or dark pen. Do not write on the bubble sheet anywhere else. You may write on this packet.

Section 1 (Items 1–15, about 30 minutes) • Section 2 (Items 16–33, about 45 minutes) • Section 3 (Items 34–40, about 15 minutes)

Section 1 • Board Question, I Do and table talk

about 30 minutes • Items 1–15

Board Question: A student types a question into a web page and an answer appears. How many separate parts did that take? Hold your answer in your head. You will meet this question three times today.

The Parts of an AI Tool

This section follows one question from a web page to an answer and names each part that the question passes through.

Following One Question

An AI tool that a person reaches through a web page is built from several parts that pass work along in order. The example is the Name That Element page of MuggsAI. On that page, a student describes something on a screen, such as a box that pops up over a game, and the tool replies with the name of that element.

First, the student types the description into a box on the page and presses a button. The browser then sends a request to the class site's server. A request is a message that names a server and the resource it asks for, and it can carry data such as the text from a form. Next, the class site's server adds its own instructions to the student's text and sends a second request to Mistral's server, which runs the model. The model has two parts: a large file of numbers called parameters and a smaller program called a runtime. To run, the parameters are loaded into memory, usually the memory on a GPU, and the runtime uses them to predict the answer one token at a time. Finally, the answer travels back as a response, from Mistral's server to the class site's server and then to the browser, which shows it on the page. Figure 1 shows the parts of this chain in order, with the two servers drawn as one box.

The Interface

The **interface** is the part of a tool that a person sees and touches, which for a web tool is the page in the browser. On the Name That Element page, the interface includes the typing box, the button and the area where the answer appears. MDN describes a user interface as anything that helps a person use a machine, and it lists a web page and an input form as examples. For example, a student who changes the color of the button has changed the interface. The server is part of the tool and not part of the interface. A student

never sees the class site's server or Mistral's server, even though both do work on every question. Several MuggsAI pages send their requests to the same server and the same model, and each page still has its own interface.

The System Prompt

A **system prompt** is a set of instructions that the builder of a tool writes ahead of time and sends to the model with every request. Mistral's documentation describes the system message as an optional message that sets the behavior and context of the assistant. It also says that the system prompt is typically managed by the developer of the tool. In MuggsAI, the server places a system message in front of the student's text each time it sends that text to the model. The Name That Element system prompt tells the model to give names from the class Elements Catalog and not to write code.

What the user types is a prompt, not the system prompt. The student's text travels in a separate message, and that message has the role "user" in the request. The user usually never sees the system prompt, although some tools show it. MuggsOfPrompts, for example, shows its system prompt on the page as read-only text. Because the system prompt shapes how the model responds, two tools that use the same model can behave differently.

Components and the Specification

A **component** is one part of a system that has one job and can be named and replaced. The interface is a component, because its job is to collect the question and show the answer. The server is a component, because its job is to receive the request, add the system prompt and pass the work along. The model is a component whose job is to predict the answer, and the memory and GPU are the hardware it needs to do that. "The AI" is not one component. It is made of at least four: the interface, the server, the system prompt and the model.

Each component can be changed without rebuilding the others. For example, a builder can rewrite the system prompt and leave the interface and the server unchanged. A specification for a tool describes each component: what it is, what it receives and what it sends on.

Summary

A question typed into a web tool passes through an interface, a request, a server, a system prompt, a model running in memory on a GPU, and a response. Each of these is a component with one job. A specification for a tool names each component and describes its job.

Sources: MDN Web Docs, *Client-server overview* (2026); MDN Web Docs, *UI* (2025); Mistral AI, *Chat completions and Prompting* (n.d.); Hugging Face, *Optimizing LLMs for Speed and Memory* (n.d.); ggml-org, *llama.cpp* (n.d.); MuggsAI and MuggsOfPrompts request paths, class site source code (2026).

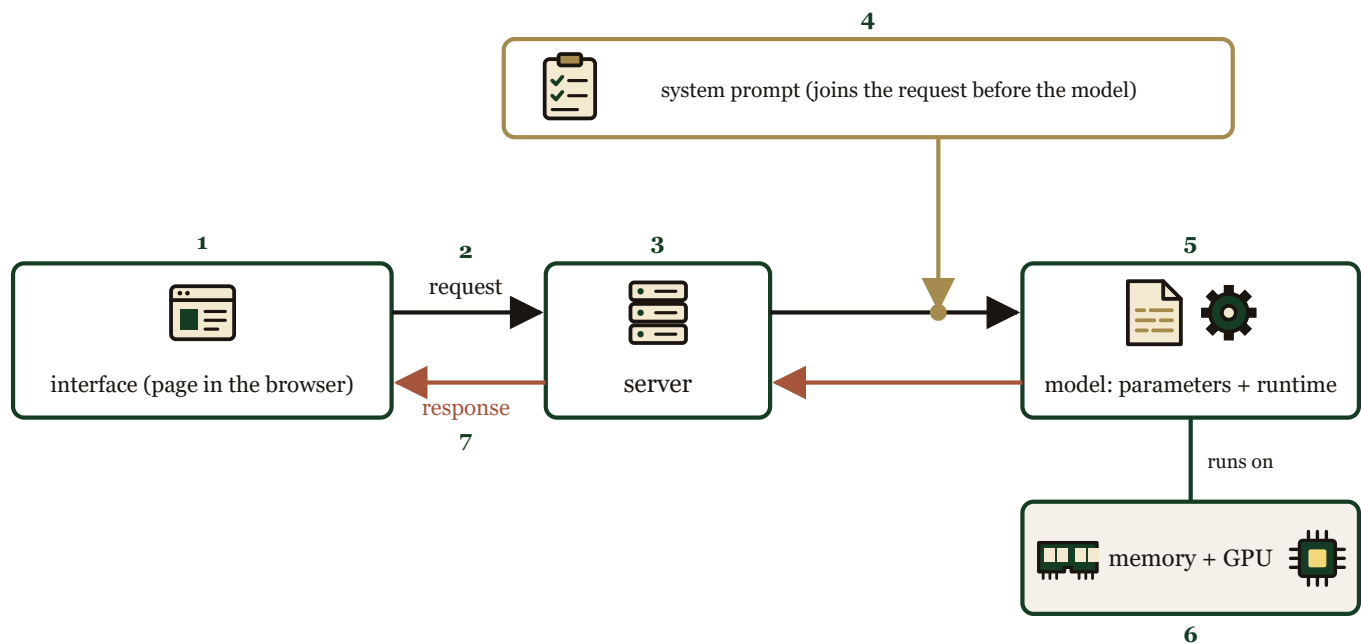


Figure 1. The seven parts between a question typed on a web page and the answer that appears, numbered in the order the work passes through them.

1. A student types a question into a web page and an answer appears. Which list names the parts in the order the work passes through them in Figure 1?
 - A. interface, server, request, model, system prompt, memory + GPU, response
 - B. request, interface, server, model, system prompt, response, memory + GPU
 - C. interface, request, server, system prompt, model, memory + GPU, response
 - D. interface, request, system prompt, server, model, response, memory + GPU
 - E. interface, request, server, model, system prompt, memory + GPU, response
2. How does the passage define a request?
 - A. the answer that the model sends back to the page
 - B. the instructions that the builder writes ahead of time
 - C. a message that names a server and the resource it asks for, and it can carry data such as the text from a form
 - D. the large file of numbers that the runtime uses
 - E. the page in the browser where the student types
3. In the Name That Element example, how many requests carry the student's question on its way to the model, and who sends each one?
 - A. two: the browser sends one to the class site's server, then that server sends one to Mistral's server
 - B. one, from the browser straight to Mistral's server
 - C. two: the browser sends one to the class site's server and another to Mistral's server
 - D. three: one each from the browser, the class site's server and the model
 - E. one, from the class site's server back to the browser

4. In Figure 1, which number is the response, and which way does its arrow point?
- A. 2, from the interface toward the server
 - B. 7, from the model back through the server to the interface
 - C. 7, from the interface toward the model
 - D. 6, from the model down to memory + GPU
 - E. 1, from the server toward the interface
5. On the Name That Element page, which of these can the student see and touch? I. the typing box. II. the button. III. the class site's server. IV. Mistral's server. V. the area where the answer appears.
- A. I and II only
 - B. I, II, III and V only
 - C. III and IV only
 - D. all five
 - E. I, II and V only
6. Which change alters only the interface of the Name That Element page?
- A. moving the answer area so it sits below the typing box
 - B. rewriting the instructions the server adds to every request
 - C. switching the page to a different Mistral model
 - D. loading the parameters into a different GPU
 - E. having the server send each request to a second server
7. A student says, "The server is part of the interface, because it does work on every question." Which reply fits the passage?
- A. Disagree. The server is part of the tool, but the student never sees it, so it is not part of the interface.
 - B. Agree. Anything that does work on every question is part of the interface.
 - C. Agree. The class site's server shows the typing box and the button.
 - D. Disagree. The server is part of the model, because it runs on a GPU.
 - E. Disagree. The server is not part of the tool at all.
8. Several MuggsAI pages send their requests to the same server and the same model, yet each page behaves differently. Which explanation does the passage support?
- A. Each page loads its own set of parameters into the GPU.
 - B. The server sends each page's requests to a different GPU.
 - C. Each page's builder wrote a different system prompt that travels with its requests.
 - D. Students type longer questions on some pages than on others.
 - E. The response takes a different path back on each page.

- 9.** At table talk, a student reads Statement 1: "The system prompt is the question the user types." Which reply is accurate and uses the passage correctly?
- A.** Agree. The user's text is sent to the model with every request.
 - B.** Disagree. The user types the system prompt, but only once, when the page first loads.
 - C.** Agree. The system prompt and the user's text travel together as one message.
 - D.** Disagree. The system prompt is stored inside the model's parameters.
 - E.** Disagree. The user's text is a prompt in a message with the role "user," and the builder writes the system prompt ahead of time.
- 10.** In a MuggsAI request, which part travels in the message with the role "user"?
- A.** the system prompt
 - B.** the list from the class Elements Catalog
 - C.** the response from the model
 - D.** the student's text
 - E.** the parameters of the model
- 11.** What does the Name That Element system prompt tell the model to do?
- A.** answer any question that the student types
 - B.** write the code for each element the student describes
 - C.** ask the student a quiz question before giving a name
 - D.** give names from the class Elements Catalog and not write code
 - E.** show the system prompt on the page as read-only text
- 12.** Which statement about the model matches the passage?
- A.** The model is one program that searches the internet for each answer.
 - B.** The runtime is the large file of numbers, and the parameters are the smaller program.
 - C.** The parameters stay on a hard drive, and the runtime reads the whole answer from it at once.
 - D.** The model writes the whole answer in one step on the class site's server.
 - E.** Its parameters are loaded into memory, usually on a GPU, and its runtime uses them to predict the answer one token at a time.
- 13.** A builder rewrites the system prompt of a tool. According to the passage, which other parts must be rebuilt?
- A.** the interface only
 - B.** the interface and the server
 - C.** the model's parameters
 - D.** none of them, because each component can be changed without rebuilding the others
 - E.** every part of the tool

14. A student says, "The AI gave me the answer." What is the shortest list that the passage accepts as the parts that make up "the AI"?
- A. the web page and the AI
 - B. the interface, the server, the system prompt and the model
 - C. the server and the model
 - D. the interface and the response
 - E. the model by itself
15. Table A answers the Board Question with seven parts, as in Figure 1. Table B answers eight, because it splits the server into the class site's server and Mistral's server. Which judgment fits the passage and the table talk directions?
- A. Both can be right, because the count depends on how finely the parts are divided, and Figure 1 draws the two servers as one box.
 - B. Only Table A is right, because Figure 1 shows seven parts.
 - C. Only Table B is right, because there really are two servers.
 - D. Neither is right, because the passage says the answer is four.
 - E. Neither is right, because the request and the response are not parts.

Section 2 • We Do classwork

about 45 minutes • Items 16–33

Seven Components, in Order

This reading lists the components of a web tool that answers questions with a language model, in the order the work passes through them.

The Seven Components

A person opens the tool's page, types a question and reads the answer on the same page. Between the question and the answer, the work passes through seven components, in this order. The **interface** is the page in the browser, where a person types a question and reads the answer. The **request** is the message that the browser sends to the server, and it carries the person's question. The **server** receives the request, adds the system prompt and sends the work on to the model. The **system prompt** is the set of instructions that the tool's builder writes ahead of time, and it joins the request just before the model. The **model** has two parts, its parameters and its runtime: the parameters are a large file of numbers, and the runtime is the program that uses them to predict the answer. The **hardware** is the memory that holds the parameters and the GPU that does the calculations. The **response** is the answer, which travels back from the model through the server to the interface.

What a Specification Is

A specification is a written description of each component: what it is, what it receives, what it does and what it sends on. This is the idea behind spec-driven development, where the specification is the part of the work that lasts and the code is built from it. Using the seven names above, in the same order, lets every specification be read the same way.

Sources: MDN Web Docs, *Client-server overview* (2026); Mistral AI, *Prompting* (n.d.); Hugging Face, *Optimizing LLMs for Speed and Memory* (n.d.); ggml-org, *llama.cpp* (n.d.); MuggsAI request path, class site source code (2026).

Figure 1 is in Section 1. Use it with Reading 2.

- 16.** In Reading 2's order, which component comes first and which comes last?
- A.** first the request, last the response
 - B.** first the interface, last the response
 - C.** first the interface, last the hardware
 - D.** first the server, last the interface
 - E.** first the system prompt, last the model
- 17.** Which pair matches a component to its job in Reading 2?
- A.** interface: where a person types a question and reads the answer
 - B.** interface: adds the system prompt to the request
 - C.** server: the page where a person types a question
 - D.** response: carries the person's question to the server
 - E.** request: the answer that travels back to the page
- 18.** A student types a question and presses the button. What does the request carry, and where does it go first?
- A.** the parameters, to the GPU
 - B.** the system prompt, to the interface
 - C.** the answer, to the browser
 - D.** the person's question, straight to the model
 - E.** the person's question, to the server
- 19.** Which list gives the server's jobs from Reading 2, complete and in order?
- A.** adds the system prompt, receives the request, sends the answer to the interface
 - B.** receives the request, runs the parameters, sends the response
 - C.** shows the answer, adds the system prompt, sends the work to the model
 - D.** receives the question, writes the system prompt at that moment, predicts the answer
 - E.** receives the request, adds the system prompt, sends the work on to the model
- 20.** Which statements about the system prompt are accurate? I. The builder writes it ahead of time. II. The person writes it at the moment of the question. III. It joins the request just before the model. IV. It is part of the model's parameters.
- A.** II and III
 - B.** I and IV
 - C.** II and IV
 - D.** I and III
 - E.** I, III and IV

- 21.** In Figure 1, the system prompt drops its instructions into an arrow. Which arrow, and at what point?
- A.** the response arrow, just before the interface
 - B.** the request arrow, just before the model
 - C.** the request arrow, just after the interface
 - D.** the response arrow, just after the model
 - E.** no arrow, because it sits inside the model
- 22.** Which matching agrees with Reading 2? (P = parameters, R = runtime, M = memory, G = GPU)
- A.** P: the program that predicts. R: the file of numbers. M: does the calculations. G: holds the parameters.
 - B.** P: the file of numbers. R: the program that predicts. M: does the calculations. G: holds the parameters.
 - C.** P: a large file of numbers. R: the program that uses them to predict. M: holds the parameters. G: does the calculations.
 - D.** P: the instructions written ahead of time. R: the program that predicts. M: holds the parameters. G: does the calculations.
 - E.** P: the file of numbers. R: the server. M: holds the parameters. G: does the calculations.
- 23.** Which path does the response travel?
- A.** from the interface through the server to the model
 - B.** from the model straight to the interface
 - C.** from the model through the server to the interface
 - D.** from the server through the model to the interface
 - E.** from the system prompt through the model to the server
- 24.** Which pairs are in Reading 2's order, earlier to later? I. request, server. II. model, system prompt. III. response, request. IV. server, system prompt.
- A.** I only
 - B.** II and III
 - C.** I, II and IV
 - D.** all four
 - E.** I and IV
- 25.** Reading 2 says a specification describes four things about each component. Which list is complete?
- A.** what it is, what it costs, who built it and what color it is
 - B.** what it receives, what it does, what it sends on and its code
 - C.** its name, its order, its picture and its source
 - D.** what it is, what it does, its code and its server
 - E.** what it is, what it receives, what it does and what it sends on

- 26.** Why does a specification keep the system prompt separate from the person's question?
- A.** Both change every time the tool is used, so they must be tracked apart.
 - B.** The system prompt is longer, so it needs its own page.
 - C.** The question goes to a different model than the system prompt.
 - D.** The builder writes the system prompt once and it travels with every request, while the question changes each time.
 - E.** The system prompt is secret, so it cannot appear in a specification.
- 27.** MuggsOfPrompts shows its system prompt on the page as read-only text. Which statement is accurate?
- A.** Because students can see it, it becomes part of the user's prompt.
 - B.** It is still the builder's instructions sent with every request. Showing it does not change its job.
 - C.** Because it is on the page, it is now the interface instead of a system prompt.
 - D.** It is sent only once, when the page first loads.
 - E.** It is part of the response, because it appears on the screen.
- 28.** A student plans a vocabulary tool. The server adds this instruction: "Ask one quiz question at a time and never give the answer first." The student now wants the tool to explain words instead of quizzing. Which component should change?
- A.** the system prompt
 - B.** the interface
 - C.** the request
 - D.** the hardware
 - E.** the response
- 29.** Which component is the page where a person types a question and reads the answer?
- A.** the request
 - B.** the server
 - C.** the runtime
 - D.** the interface
 - E.** the hardware
- 30.** A student writes, "I understand the runtime least." Which question is about the runtime, as Reading 2 defines it?
- A.** Where are the instructions I write ahead of time stored?
 - B.** How does the page show the answer?
 - C.** How does the message get from the browser to the server?
 - D.** How does the program use the file of numbers to predict the answer?
 - E.** How much memory holds the file of numbers?

- 31.** In spec-driven development, which part of the work lasts, according to Reading 2?
- A. the specification, and the code is built from it
 - B. the code, because the specification is thrown away once the code runs
 - C. the system prompt, because it travels with every request
 - D. the interface, because it is the part a person sees
 - E. the response, because it is what the person reads
- 32.** Why does Reading 2 say to use the seven names in the same order?
- A. so the tools all behave the same way
 - B. so every specification can be read the same way
 - C. so the server can read the specification
 - D. so every tool uses the same system prompt
 - E. so the model knows which component comes first
- 33.** A student's specification for a web tool says what the server receives and what it sends on, and nothing else. Which two things does Reading 2 say the specification is missing?
- A. who built it and when
 - B. the system prompt and the model
 - C. the request and the response
 - D. the memory and the GPU
 - E. what the server is and what it does

Section 3 • Exit ticket

about 15 minutes • Items 34–40

Today's terms: interface • system prompt • component. Board Question: A student types a question into a web page and an answer appears. How many separate parts did that take?

- 34.** At the start of class, a student answered the Board Question, "Two. The web page and the AI." By the end, the student wrote, "Seven: the interface, the request, the server, the system prompt, the model, the hardware and the response." Which evidence and source best explain the change?
- A. Figure 1 shows the web page and the AI as two boxes.
 - B. The passage says "the AI" is at least four components, and Reading 2 adds the request, the hardware and the response.
 - C. Reading 2 says the system prompt is part of the model.
 - D. The passage says MuggsOfPrompts shows its system prompt on the page.
 - E. The passage says Mistral's server runs the model, which adds one more part.

- 35.** Which statements describe the system prompt, and not the prompt the user types? I. The builder writes it ahead of time. II. It travels in a message with the role "user." III. It goes to the model with every request. IV. The user usually never sees it. V. It changes with every question.
- A.** I and II
 - B.** II and V
 - C.** III and V
 - D.** I, III and IV
 - E.** I, II, III and IV
- 36.** Which choice names two components from Reading 2 and gives each one its correct job?
- A.** server: the page where a person types. Request: the answer that comes back.
 - B.** response: carries the question to the server. Model: holds the parameters.
 - C.** interface: the page where a person types and reads. System prompt: instructions the builder writes ahead of time.
 - D.** hardware: instructions written ahead of time. Interface: predicts the answer.
 - E.** request: adds the system prompt. Server: the file of numbers.
- 37.** A pizza shop's website has a chat box that only answers questions about the menu. Which choice names the interface and what the builder most likely put in the system prompt?
- A.** interface: the shop's server. System prompt: the customer's question.
 - B.** interface: the model. System prompt: the menu's prices.
 - C.** interface: the chat box on the web page. System prompt: "Answer only questions about the menu."
 - D.** interface: the chat box. System prompt: the customer's question.
 - E.** interface: the GPU. System prompt: "Answer only menu questions."
- 38.** A student answers the Board Question: "Six: the interface, the request, the server, the model, the hardware and the response." Which component from Reading 2's list is missing?
- A.** the system prompt
 - B.** the interface
 - C.** the request
 - D.** the response
 - E.** the hardware
- 39.** A student's specification lists six components and puts "memory and GPU" inside the model. Which change matches Reading 2?
- A.** Leave it, because the hardware is one of the model's two parts.
 - B.** Move memory and GPU into the server, where the request arrives.
 - C.** List the hardware as its own component, right after the model, as the memory that holds the parameters and the GPU that does the calculations.
 - D.** Drop the hardware, because a specification only describes software.
 - E.** List memory and GPU as two separate parts of the interface.

40. Which answer to the Board Question would the table talk directions accept?

- A.** "One: the AI."
- B.** "Eight: the interface, the request, the class site's server, Mistral's server, the system prompt, the model, memory + GPU and the response."
- C.** "Two: the web page and the AI."
- D.** "Three: the interface, the AI and the internet."
- E.** "Five: the interface, the request, the server, the model and Google."