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## 1. What is ChatGPT?

- ChatGPT is a large language model developed by OpenAI that uses GPT (Generative Pre-trained Transformer) to generate human-like text.
- Use Cases:
  - Answering questions
  - Writing articles, code, emails, etc.
  - Brainstorming ideas

- Translation and summarization
  - Debugging code and technical assistance
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## 2. How to Access ChatGPT

### 1. Web Interface (Easiest):

- Visit <https://chat.openai.com>
- Sign up/login to start using ChatGPT.

### 2. API Access (For Developers):

- Requires an OpenAI account and API key.
- Use the OpenAI API for custom integrations.

### 3. Mobile App (iOS/Android):

- Download from the App Store or Google Play.
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## 3. Basic Commands and Prompts

### 1. Ask Questions:

What is the capital of France?

### 2. Write Content:

Write a blog post about the benefits of meditation.

### 3. Translate Text:

Translate "Hello, how are you?" to French.

### 4. Summarize Text:

Summarize the following article: [paste text]

## 5. Generate Code:

Write a Python script to reverse a string.

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## 4. Key Features

- Memory (Pro Version): Remembers information across sessions (opt-in feature).
  - Multimodal (GPT-4): Supports text and image inputs.
  - Plugins: Extend functionality by connecting to external services.
  - Web Browsing (GPT-4): Access up-to-date information beyond training data.
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## 5. Crafting Effective Prompts

### Tips for Better Responses:

- Be Specific:  
Explain quantum physics in simple terms for a 10-year-old.
- Provide Context:  
Write a formal email requesting a meeting with a client.
- Break it Down:  
Step 1: Explain the basics of machine learning.  
Step 2: List common machine learning algorithms.
- Role Assignment:  
Act as a history professor and explain World War II causes.
- Iterative Refinement:  
Expand this text with more detail.  
Shorten the following paragraph.

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## 6. Code Examples

### Python (Fibonacci Generator):

```
def fibonacci(n):
    a, b = 0, 1
    for _ in range(n):
        print(a, end=' ')
        a, b = b, a + b
    fibonacci(10)
```

### HTML (Simple Web Page):

```
<!DOCTYPE html>
<html>
<head><title>My Web Page</title></head>
<body>
    <h1>Welcome to My Website</h1>
    <p>This is a simple HTML page.</p>
</body>
</html>
```

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## 7. Troubleshooting and Debugging

- Explain Errors:

I got this error in Python: `IndexError: list index out of range`.  
What does it mean?

- Code Debugging:

Debug the following JavaScript code: [paste code]

- Performance Optimization:

How can I optimize this SQL query for faster execution?

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## 8. Common Use Cases

- Content Creation: Blog posts, essays, emails, reports.
  - Coding Help: Write, debug, and explain code in various languages.
  - Learning Assistant: Get explanations on complex topics.
  - Productivity: Generate ideas, to-do lists, schedules.
  - Creative Writing: Poetry, stories, jokes, song lyrics.
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## 9. Limitations

- Training Cut-off: May lack information on events or topics after the model's knowledge cut-off date.
  - Accuracy: May generate incorrect or nonsensical answers. Always verify critical information.
  - Bias: Responses may reflect biases in the training data.
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## 10. Keyboard Shortcuts (Web Interface)

- Ctrl + Enter – Submit prompt.
  - Shift + Enter – Add a new line without submitting.
  - Up Arrow – Edit last prompt.
  - Tab – Autocomplete in code blocks.
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## 11. ChatGPT Pro (GPT-4 Access)

- GPT-4 Benefits:
  - More accurate and creative responses.
  - Handles complex prompts better.
  - Multimodal (image + text).

- Pricing:
    - Free (GPT-3.5)
    - Pro (GPT-4) - Subscription model.
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## 12. API Usage (For Developers)

`npm install openai`

Basic API Example (Node.js):

```
const { Configuration, OpenAIApi } = require("openai");

const configuration = new Configuration({
  apiKey: 'your-api-key',
});
const openai = new OpenAIApi(configuration);

async function run() {
  const response = await openai.createCompletion({
    model: "gpt-4",
    prompt: "Write a poem about space.",
    max_tokens: 100
  });
  console.log(response.data.choices[0].text);
}
run();
```

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## 13. Best Practices

- Iterate and Refine: Keep refining prompts for better responses.
- Ask Follow-ups: Continue the conversation to extract more information.
- Clarify Ambiguity: Rephrase or add context if the answer isn't precise.

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## 14. Advanced Techniques

- Chain of Thought (COT):

Solve this math problem step by step:  $2x + 5 = 15$

- Prompt Engineering:

Simulate a debate between AI and a scientist on climate change.

- Temperature Control:

Set temperature=0.2 for factual responses, 0.8 for creative writing.