第 16 章Chapter 16案例研究：繆斯/有紀律的腦力激盪Case Study: MUSE/Disciplined Brainstorming

在本章中，我將使用一個虛構的應用程式 MUSE 來演示強大的「書結」設計腦力激盪方法的實際應用，該方法應該是任何從事 AI 專案使用者體驗的設計師工具帶中必不可少的工具。

In this chapter, I will use a fictional app, MUSE, to demonstrate a practical application of the powerful “ bookending ” design brainstorming method that should be an essential tool in the toolbelt of any designer working on UX for AI projects.

這種方法源自 Leah Buley 的優秀著作《The User Experience Team of One》（1）。在她的書中，莉亞描述了一種稱為「紀律性腦力激盪」的方法。Bookending 是她最初方法的延伸，適用於 AI 的 UX 設計工作。

This method originates from Leah Buley ’ s excellent book, The User Experience Team of One (1). In her book, Leah described a method called “ disciplined brainstorming. ” Bookending is an extension of her original methodology adapted for UX design work on AI.

該方法的目的簡單而深刻：快速集思廣益各種實用的設計方法——如有必要，可以單獨使用，但作為小型、專注的老虎團隊的一部分要好得多。書擋是指一種特殊的腦力激盪方法：沿著給定的設計方向或主題提出一個想法，盡可能舒適地進行，然後在“ 書擋 ”勾勒出你的解決方案。

The purpose of the method is simple, yet profound: to quickly brainstorm various practical design approaches—alone if necessary, but much better as part of a small, focused tiger team. Bookending refers to a particular brainstorming approach: taking an idea along a given design direction or theme, as far as it can comfortably go, and then sketching out your solution at the “ bookend. ”

然後你停下來。樞。選擇不同的方向或主題，並以同樣的方式追求新方法，就像貓可能會擊打毛茸茸的玩具一樣：只輕輕觸摸，沒有爪子，始終保持它移動。

Then you stop. Pivot. Pick a different direction or theme and pursue the new approach in the same way, like a cat might bat a fluffy toy: light touches only, no claws, always keep it moving.

將給定的設計方向視為一排特定類別的書籍會有所幫助，而您的想法就像一本新書安裝在該行的最後，將主題進一步擴展——因此稱為書擋。

It helps to think of a given design direction as a row of books of a particular category, and your idea would be like a new book fitted at the very end of the row, extending the theme just a tad further—hence the term bookend.

讓我們看看這在實踐中是如何運作的。

Let’s see how this works in practice.

假裝您正在設計一款名為 MUSE（簡稱“ Machine-Backponned Sidekick Engrosser ”）的新 AI 助手寫作應用程序，因為讓我們面對現實吧，我們都需要一點寫作幫助。時不時地。

Pretend you are designing a new AI assistant writing app called MUSE (which is short, naturally for “ Machine-Underpinned Sidekick Engrosser ”) because, let’s face it, we all need a little help writing. From time to time.

設計理念 #1

Design Idea #1

第一個設計方向可能是使用側面板 Copilot，我之前在第 7 章「SaaS Copilot 設計的 UX 最佳實踐」中介紹過。這種設計可能採用「存在」在 Word 文件側邊面板中的人工智慧助理的形式。在側邊面板中工作時，使用者可能會看到一些初步想法，輸入一些新提示，獲得 AI 回應，並有一個按鈕將回應插入到他們的文件中。瞧！我們有了第一個設計方向！讓我們來畫一下（見圖 16.1）。

The first design direction might be to use a side-panel Copilot, which I covered previously in Chapter 7, “ UX Best Practices for SaaS Copilot Design. ” This design might take the form of an AI assistant that “ lives ” in the side panel of a Word document. Working within the side panel, the user might be presented with some initial ideas, type in some new prompts, get AI responses, and have a button to insert the response into their document. Voil à ! We have our first design direction! Let’s sketch it (see Figure 16.1).

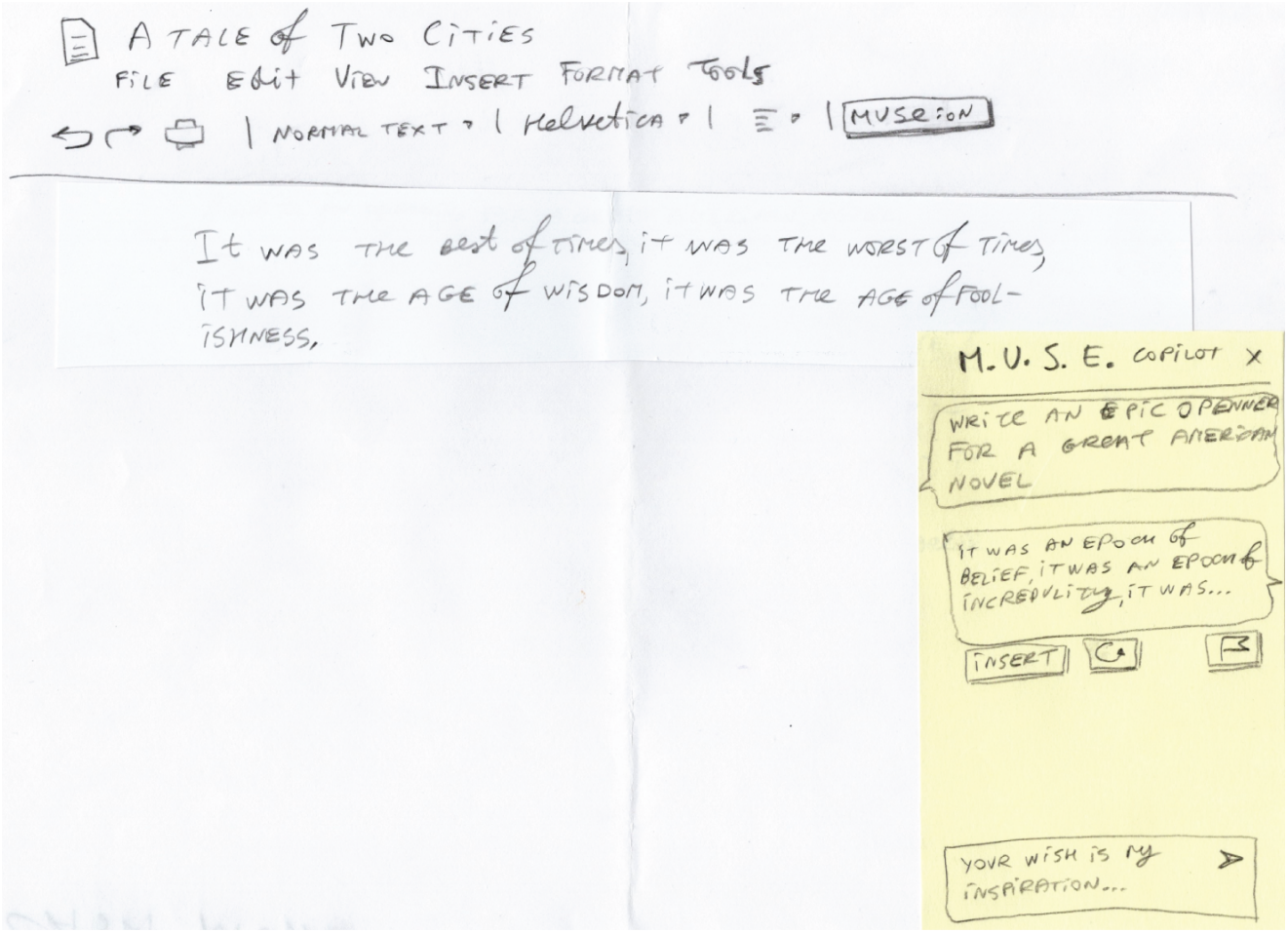

圖 16.1 MUSE 設計理念 #1，靈感來自側面板 Copilot

Figure 16.1 MUSE Design Idea #1, inspired by side-panel Copilot

便條

NOTE

你怎麼知道你什麼時候已經把這個想法「走到盡頭」了？這是高度主觀的，取決於受眾，但在任何腦力激盪討論中，即使是你與自己進行的討論，也會有一段時間你不再涵蓋新領域。你會發現每一個建議都重新追溯已經覆蓋的地面，或者崩潰到你已經繪製的想法。正如安東尼・德・聖艾修佰里雄辯地說的那樣，這個想法是完美的，“不是在沒有什麼可添加的情況下，而是在沒有什麼可刪除的情況下。在前面的範例中，如果您建議將面板從左到右或移動到螢幕底部，或開始選擇按鈕顏色和按鈕文字，那麼是時候繼續前進了。這就是書尾技巧的意義所在——它刻意避免錨定於單一想法，優雅地退出到不同的設計方向，就像跳到另一個書架重新開始一樣。

How do you know when you’ve taken the idea “as far as it goes”? This is highly subjective and depends on the audience, but in any brainstorming discussion, even one you are having with yourself, there comes a point where you are no longer covering new ground. You find every suggestion re-tracing the ground already covered or collapsing to the idea you have already drawn. As Antoine de Saint-Exupéry so eloquently said, the idea is perfect, “not when there is nothing more to add, but when there is nothing more to take away.” In the earlier example, if you are suggesting things like moving the panel left to right or to the bottom of the screen, or starting to pick button colors and button text, it’s time to move on. This is what the bookending technique is all about—it deliberately avoids anchoring on a single idea by having a graceful exit to a different design direction, like jumping to another shelf of books to start over.

設計理念 #2

Design Idea #2

現在對於第二個方向，您可以選擇不同的流行 AI 設計模式，例如 GitHub Copilot 使用的模式。在這種設計範式中，使用者使用註釋將 AI 提示直接放置在程式的文字中。AI 尋找評論，解釋請求，然後將輸出直接插入評論下方。這似乎是一個有趣且與我們之前的想法不同的設計方向：而不是側面板（我們讓它在屏幕上移動.....咳咳），我們可以將人工智慧直接嵌入到我們的寫作編輯器中，以實現更自然的互動。這種設計（見圖 16.2）也非常適合人們通常的寫作方式，通常會給自己留下一些小的「待辦事項」提醒，可以作為人工智慧的提示。

Now for the second direction, you might pick a different popular AI design pattern like the one used by the GitHub Copilot. In this design paradigm, the user places AI prompts directly in the program’s text, using comments. AI looks for comments, interprets the request, and then inserts the output directly below the comment. That seems like an interesting and different design direction from our previous idea: Instead of the side panel (that we left moving all around the screen ⋯ ahem), we can embed the AI directly into our writing editor for a much more natural interaction. This design (see Figure 16.2) also fits beautifully into how people normally write, often leaving themselves little “to-do” reminders that can serve as a prompt for AI.

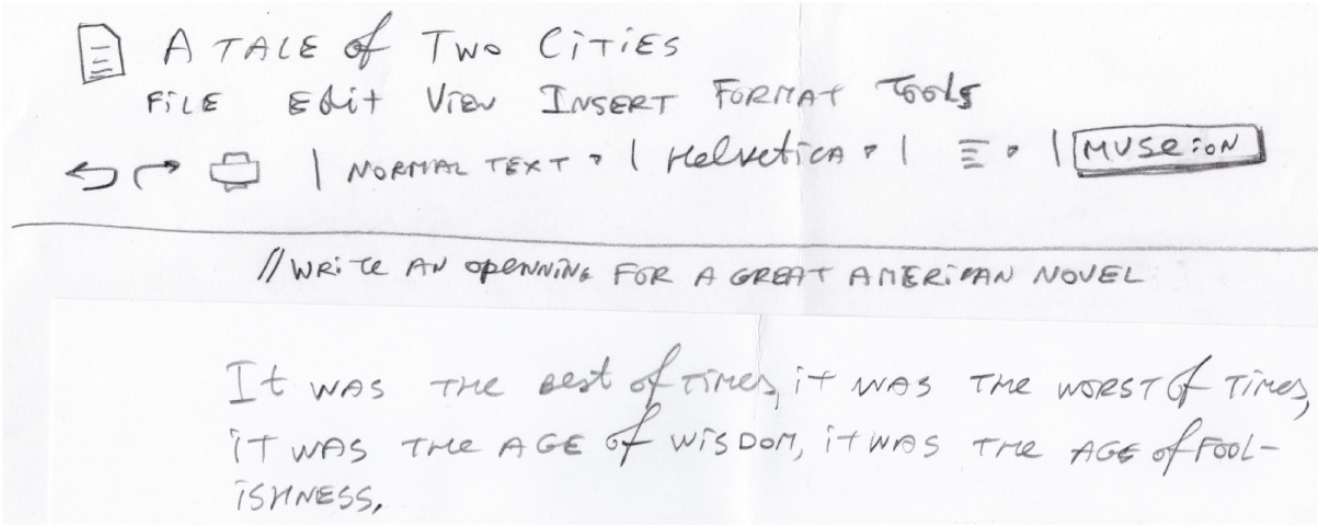

圖 16.2 MUSE 設計理念 #2，靈感來自 GitHub Copilot

Figure 16.2 MUSE Design Idea #2, inspired by GitHub Copilot

這個想法的變體可能會幫助客戶應對寫作障礙。當作者在打字過程中暫停時，人工智慧可以閱讀螢幕上已有的文字並預測接下來會發生什麼。等等，我們剛剛找到了另一個設計方向嗎？

A variation of this idea might help customers deal with writer’s block. When the writer pauses in the act of typing, the AI can read the text that is already on the screen and predict what comes next. Wait, did we just find yet another design direction?

設計理念 #3

Design Idea #3

讓我們勾勒出新的「寫入器區塊自動建議 UI」的外觀（圖 16.3）。

Let’s sketch how that new “writer’s block autosuggest UI” might look (Figure 16.3).

這個設計方向具有巨大的優勢，可以直接從前面的作品中學習，並根據該特定使用者在敘述中的特定頁面上選擇的特定人工智慧建議，使用 ML 技術微調建議。

This design direction has the huge advantage of learning directly from the previous pieces and fine-tuning the suggestions with ML techniques based on which particular AI suggestions this specific user would pick at a particular page in the narrative.

例如，格雷格得心應手的寫作助手可能會建議參考一個俄羅斯寓言，但達莉亞的助手可能會判斷一個寓言會分散注意力且沒有必要，並建議一個道德參考或現實生活中的例子。想像一下，一個真正理解你的助手 AI，就像電影《她》（2） 中的 AI 一樣。（法學碩士，你完成了我！當然，當我們開始規劃我們潛在的擬人化人工智慧人格時，我們知道我們現在已經將這個想法帶到了床墊上（咳咳，到了書擋），所以是時候再次繼續前進了。

For example, Greg’s handy writing assistant might suggest a Russian fable to reference, but Daria’s assistant might judge that a fable would be distracting and unnecessary and suggest a moral reference or a real-life example instead. Imagine an assistant AI that genuinely understands you, like the AI in the movie Her (2). (LLM, you complete me!) Of course, when we are starting to plan our potential anthropomorphized AI personalities, we know we’ve now taken this idea to the mattresses (ahem, to the bookend), so it’s time, once again, to move on.

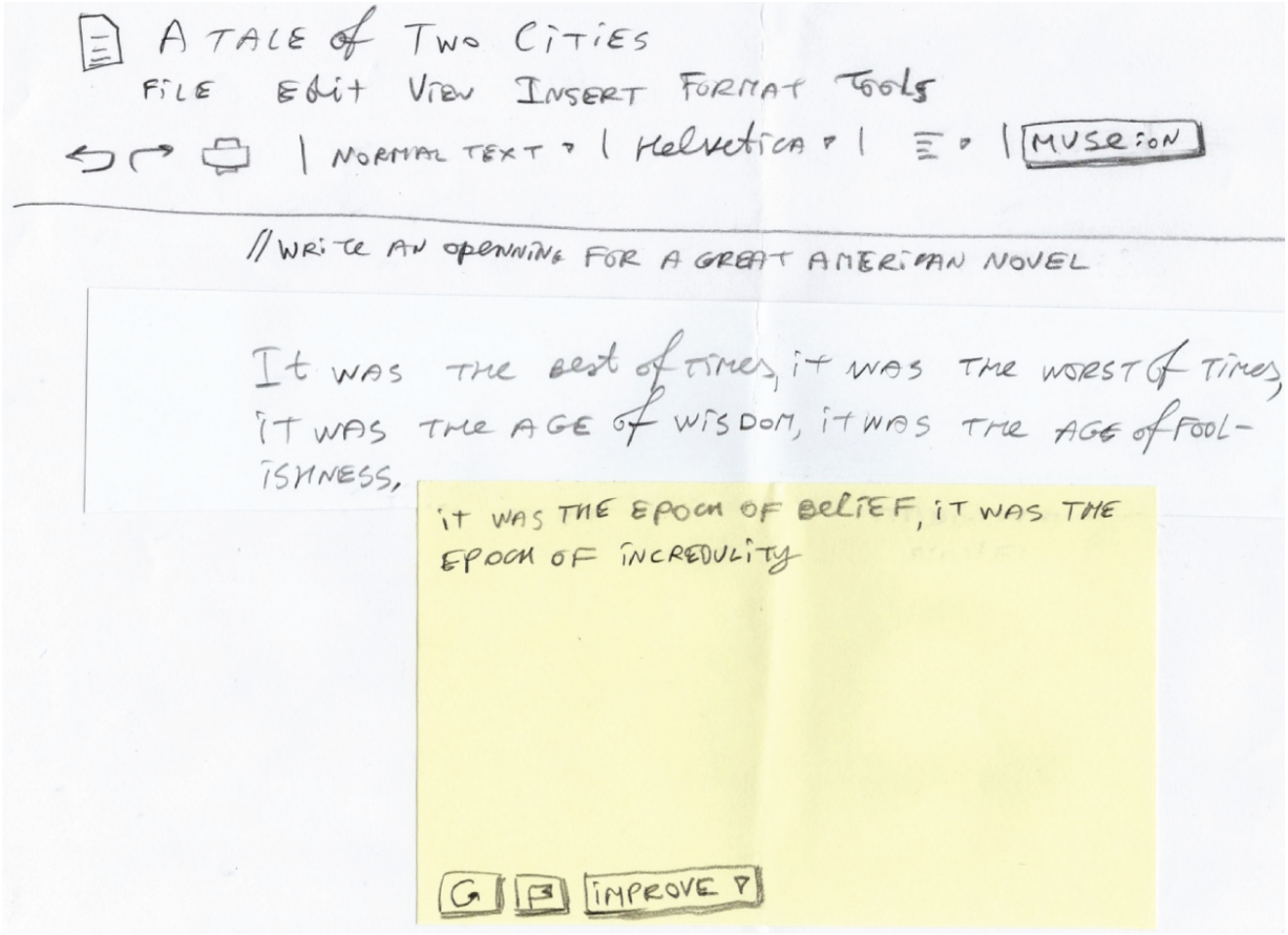

圖 16.3 MUSE 設計理念 #3 在使用者暫停打字時開始建議

Figure 16.3 MUSE Design Idea #3 starts suggesting when user pauses typing

設計理念 #4

Design Idea #4

現在我們還沒有介紹的一件事是人工智慧的專用 UI，例如 ChatGPT。如果你從這個設計方向開始思考，你很快就會意識到你可能需要一些簡單的寫作提示才能開始（見圖 16.4）。

Now one thing we have not covered yet is a dedicated UI for AI, like ChatGPT. If you start your thinking in this design direction, you will quickly realize that you might need to have a few simple writing prompts to start (see Figure 16.4).

ChatGPT 和 Google Notebook 最近都推出了畫布功能，您可以在其中寫出整本書（請參閱第 12 章「AI 優先應用程式的現代資訊架構」）。然而，我們可以藉用 Scrivener 的一個想法來在畫布設計模式上加入一個轉折點——將一本大型小說分解成一堆簡短的片段。我們的 MUSE LLM 可能會幫助編寫片段並提供 UI 來幫助組織和管理它們。但在我們轉向這個新的設計方向之前，沿著一排標有「ChatGPT」的書籍還有什麼收穫嗎？不？好吧，那麼。

ChatGPT and Google Notebook have both recently introduced canvas features where you can write out the entire book (see Chapter 12, “ Modern Information Architecture for AI-First Applications ”). However, we can add a twist on the canvas design pattern by borrowing an idea from Scrivener—breaking up a large novel into a bunch of short snippets. Our MUSE LLM might help write the snippets and provide the UI to help organize and manage them. But before we pivot to this new design direction, is there anything else to be gained from looking along the row of books labeled “ ChatGPT ”? No? All right, then.

是時候轉向了！

Time to pivot!

設計理念 #5

Design Idea #5

圖 16.5 顯示了 Scrivener（大型重要小說作家的專用工具）如何管理帶有“ 片段 ”的卡片（作者稍後使用 Scrivener 界面將其組合成完整敘述的簡短文本和對話）。

Figure 16.5 shows how Scrivener (a specialized tool for writers of big important novels) manages cards with “ snippets ” (short pieces of text and dialogue that the writer later assembles into a complete narrative using the Scrivener interface).

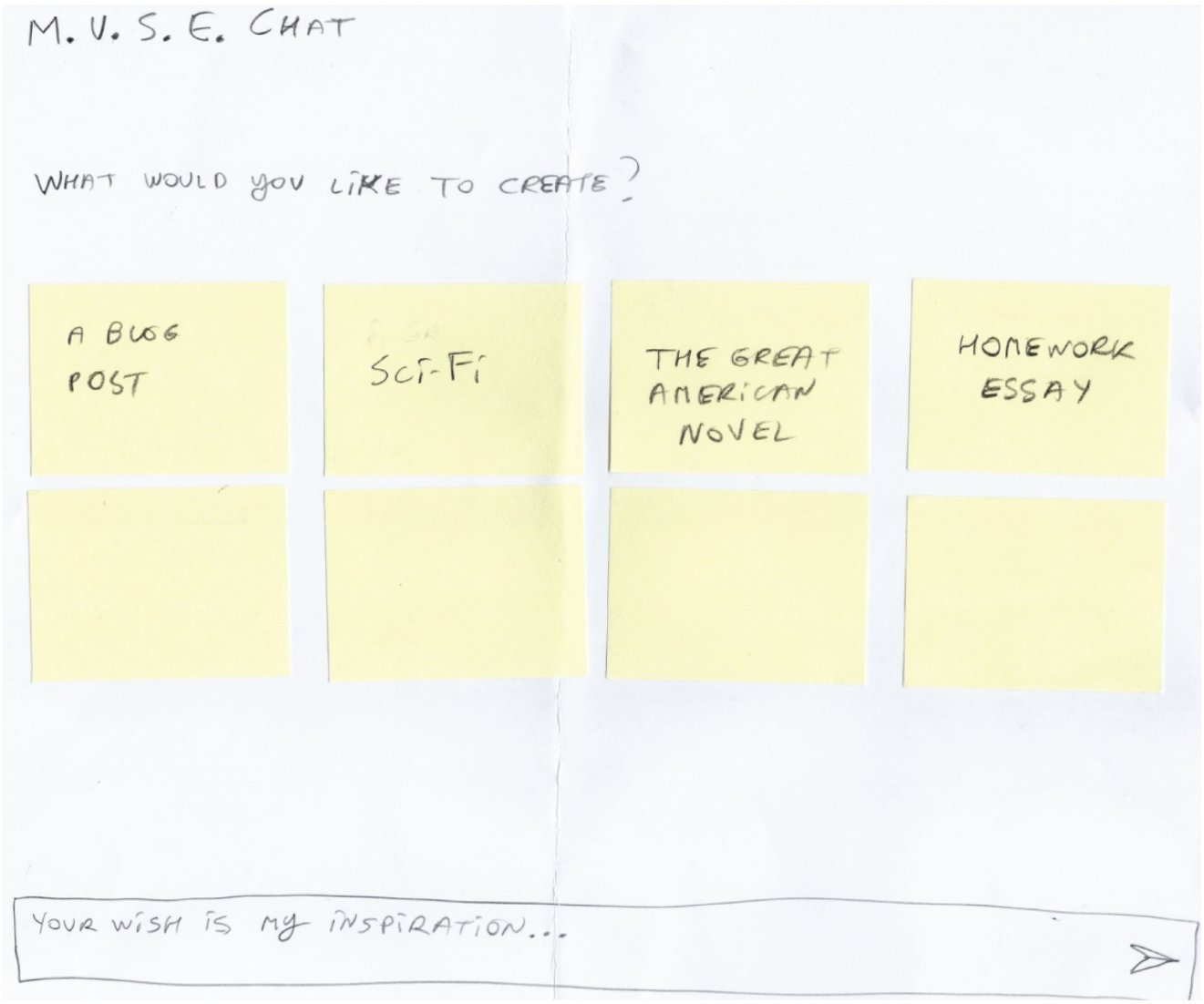

圖 16.4 MUSE 設計理念 #4 甚至在用戶開始輸入之前就提供了想法

Figure 16.4 MUSE Design Idea #4 provides ideas even before the user starts typing

您可以在圖 16.6 中看到，UI 巧妙地將每個「故事」定位為牌組中的一張牌，這些牌一起成為一本書。碰巧的是，這是與人工智慧寫作助理結合用於大型專案的完美範式。我們可以讓使用者在每張卡片上寫一個 AI 提示作為標題;然後，人工智慧可以將輸出寫入卡片內，並在下方以按鈕或標籤的形式自動提供改進建議，有點像 Grammarly GO。

You can see in Figure 16.6 that the UI cleverly positions each “ story ” as a card in the deck that together becomes a book. It just so happens that this is a perfect paradigm to combine with an AI writing assistant for larger projects. We can have the user write an AI prompt as a title on each card; then, AI can write the output inside the card and give auto suggestions for improvements right below as buttons or tags, kind of like Grammarly GO.

現在讓我們嘗試一下這個設計（見圖 16.7）。

Let ’ s give this design a shot now (see Figure 16.7).

當您準備好組裝機器中的幽靈編寫的傑作時，人工智慧可以對故事的整體流程提出額外的建議，創建新的卡片來填補敘事中的漏洞。我們可以將那些 AI 建議卡變成紫色。何？因為我們可以！現在，正如你所看到的，我們又開始討論顏色了，所以是時候調整一下了.....

When you ’ re ready to assemble your ghost-in-the-machine-written masterpiece, the AI can make additional suggestions to the story ’ s overall flow, creating new cards that fill the holes in the narrative. We can make those AI suggestion cards purple. Why? Because we can! And now, as you can see, we are down to the colors again, so it ’ s time to pivot …

但是等等，你明白了嗎？

But Wait, Did You Catch That?

最後一個想法 #5 實際上是原創和新穎的——甚至可能獲得專利！我們透過從現有產品中獲取一堆想法並重新格式化它們以利用 AI
的優勢來創建它，例如填寫一個簡短的片段來繼續故事的下一步——這是現代 LLM
擅長的。

That last idea, #5, is actually something original and novel—and might even be patentable! We created it by taking a bunch of ideas from the existing products and reformatting them to take advantage of AI ’ s strengths, like filling in a short snippet to continue the next step of the story—something modern LLMs excel at.

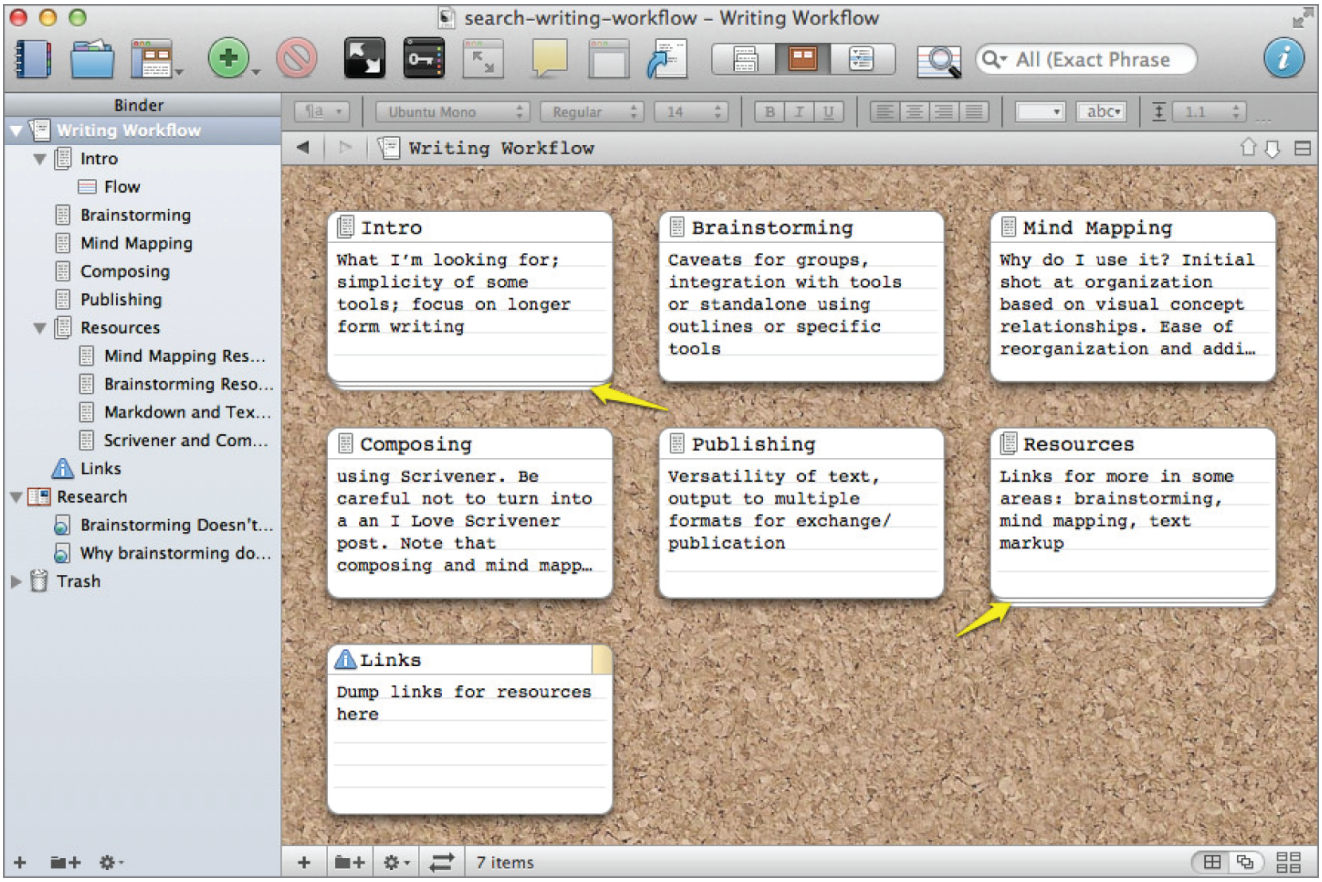

圖 16.5 Scrivener 卡管理介面

Figure 16.5 Scrivener Card Management Interface

資料來源：Chris Lott / flickr / CC BY 2.0

Source: Chris Lott / flickr / CC BY 2.0

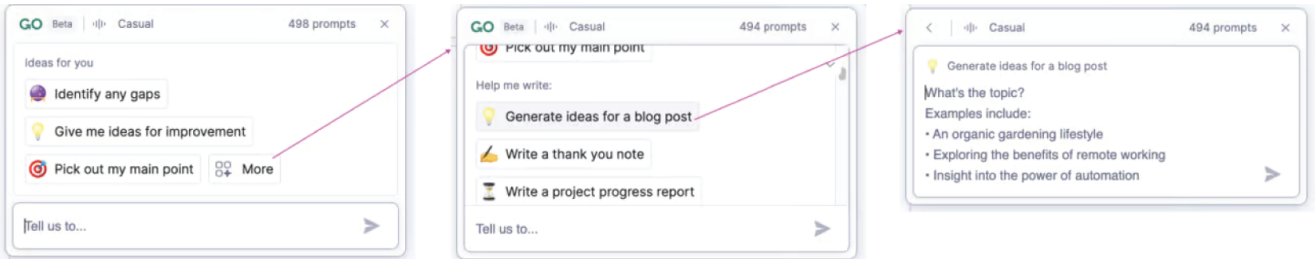

圖 16.6 Grammarly GO 提供了一長串初始建議，並使用戶可以輕鬆參與

Figure 16.6 Grammarly GO offers a long list of initial suggestions and makes it easy for users to engage

資料來源：Grammarly Inc / https://www.grammarly.com/ai / last accessed on February 05, 2025

Source: Grammarly Inc / https://www.grammarly.com/ai / last accessed on February 05, 2025

這就是書尾和有紀律的腦力激盪方法的力量。我們只需要畫出四個設計草圖，就偶然發現了一些新奇有趣的東西。我希望您在自己的設計工作中使用這種方法，並透過發揮您的想像力為人工智慧驅動的產品設計新穎的使用者體驗而獲得滿足感和好處。

This is the power of the bookending and disciplined brainstorming method. We ’ ve only needed to sketch four designs before we stumbled upon something novel and interesting. I hope that you use this method in your own design work and reap the satisfaction and benefits of leveraging your imagination designing novel UX for AI-driven products.

我想知道你的下一個偉大設計想法會是什麼？

What will your next great design idea be, I wonder?

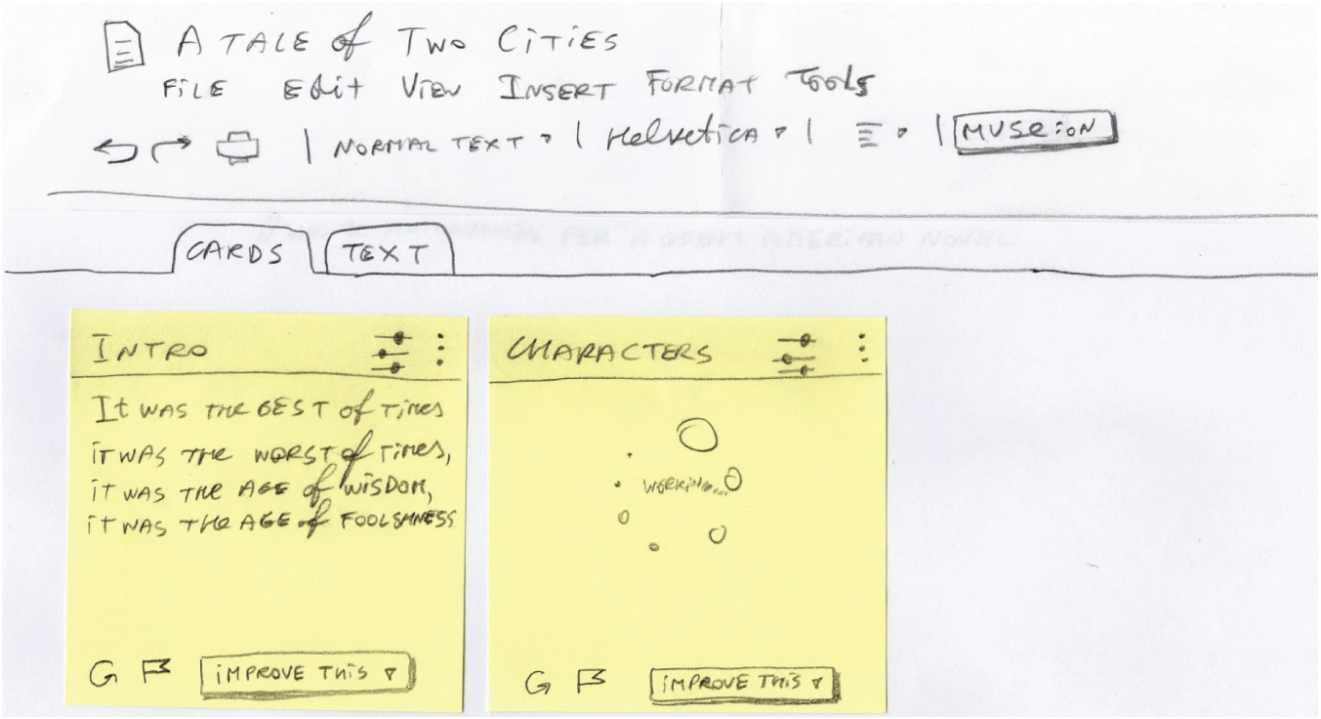

圖 16.7 MUSE 設計理念 #5，靈感來自 Scrivener 和 Grammarly GO

Figure 16.7 MUSE Design Idea #5, inspired by Scrivener and Grammarly GO

設計練習：使用書擋創建您的新穎設計

Design Exercise: Create Your Novel Designs Using Bookending

如果你選擇接受的話，你的任務是嘗試書尾/紀律性腦力激盪方法，為你自己的人工智慧驅動專案想出一些新穎有趣的設計，正好趕上我將在接下來的幾章中描述的 RITE

用戶測試。

Your mission, should you choose to accept it, is to try out the bookending/disciplined brainstorming method to come up with some novel and interesting designs for your own AI-driven project, just in time for the RITE user testing I will describe in the next few chapters.

以下是一些入門想法：

Here are some ideas to get started:

- 考慮哪些類似的產品和介面可用於激發您的設計靈感。問題是否以幾種不同的方式解決？Consider what similar products and interfaces can be used to inspire your designs. Is the problem solved in several different ways?

- 集思廣益，討論各個品牌將如何處理這個問題——蘋果、Facebook 和亞馬遜將如何解決這個問題？Brainstorm about how various brands would handle the problem—how would Apple, Facebook, and Amazon solve this problem?

- 想想神話人物解決同樣的問題。這是我的“首選”套裝，但請隨意選擇自己的套裝：鋼鐵人三項和賈維斯、來自遙遠星系的外星人、來自 Hyperion 的 AI（3）、星際爭霸戰技術、星際大戰機器人、蒸汽朋克和來自 Bobiverse 的鮑勃（4）。Think about mythical characters solving the same problem. Here’s my “go to” set, but feel free to pick your own: Ironman and Jarvis, aliens from the distant galaxies, AI from Hyperion (3), Star Trek technology, Star Wars robots, Steampunk, and Bob from Bobiverse (4).

- 考慮不同於通常網頁和行動裝置的產品和 UI 模式。如果您的產品是玩具狗怎麼辦？售貨亭？穿戴式裝置？命令列？（感謝 Luke Wroblewski（5）的這個想法，它讓我多次克服癥結——這真是天才！Consider product and UI modalities different from the usual web and mobile. What if your product was a toy dog? A kiosk? A wearable device? A command line? (Thanks to Luke Wroblewski (5) for that idea; it got me past a sticking point so many times—it’s genius!)

- 不要被卡住。快速勾勒出想法並讓它們不斷出現（請記住，你是一隻貓，輕輕地敲打一個想法的毛茸茸玩具——讓它以新的和創造性的方式前進，繼續玩耍，繼續發明！Don’t get stuck. Sketch ideas quickly and keep them coming (remember, you are a cat lightly batting a fluffy toy of an idea—keep it moving in new and creative ways, keep playing, keep inventing!)

- 通過回收紙質原型的一部分來加快您的腦力激盪。使用強制回應和彈出式面板的便箋，如本章案例研究所示。當您陷入困境並開始考慮顏色和標籤時，請用手機拍攝原型照片，然後繼續下一個書擋。Speed up your brainstorming by recycling parts of the paper prototype. Use sticky notes for modals and flyout panels as demonstrated in the case study in this chapter. When you get stuck and start thinking about colors and labels, snap a photo of your prototype with your phone and move on to the next bookend.

書尾腦力激盪比聽起來容易得多，也更具挑戰性。就像許多 UX 和合氣道一樣，這些東西很複雜，但並不複雜。畢竟，要實現新事物，您不必重新發明輪子——您只需要以稍微不同的方式或不同的問題應用它。關鍵當然是練習，所以讓我們這樣做吧！

Bookending brainstorming is both much easier and much more challenging than it sounds. As in so much of UX and Aikido, this stuff is sophisticated, but not complicated. After all, to achieve something new, you don’t have to reinvent the wheel—you just need to apply it in a slightly different way or to a different problem. The key, of course, is practice, so let’s do this!

設計練習範例：生命時鐘的新穎設計理念

Design Exercise Example: Novel Design Ideas for Life Clock

我有一個坦白：在整本書中，我們一直在使用書尾方法來創建各種練習。我們只是使用我們在整本書中介紹的各種設計模式來播種我們的思維，然後從那裡開始（副駕駛、搜索、DOI 排序、“ 眼肉 ”、預測、形狀異常等）。如果您需要一些靈感，請查看第 7-14 章的設計練習範例，以查看我們使用每章中描述的設計模式作為靈感來提出的生命時鐘/生命副駕駛的各種設計。

I have a confession to make: Throughout this book, we’ve been using the Bookending method to create various exercises. We’ve simply been using the various design patterns we’ve been introducing throughout the book to seed our thinking and then going from there (Copilot, Search, DOI Sort, “ Eye Meat, ” Forecasting, Shape Anomaly, etc.). If you need some inspiration, review the design exercise examples for Chapters 7 – 14 to see the various designs for the Life Clock/Life Copilot that we’ve been coming up with using the design patterns described in each chapter as inspiration.

不幸的是，除非你這樣做，否則這些東西都不起作用。我可以向您展示 AI 設計 UX 領域的所有奇蹟，但除非你用鉛筆寫在紙上，否則這些都不會對你的生活產生任何影響。所以，請幫自己一個忙：現在就拿起一支鉛筆，看看你能在 10

分鐘內想出多少個設計。目前，該記錄是 12 年在里斯本的 UXLx 研討會上 10 分鐘內完成 2024 個設計。你認為你能打敗它嗎？試試看吧！

Unfortunately, none of this stuff works unless you do it. I can show you all the wonders of the UX for AI design universe, but unless you put pencil to paper none of this will make any difference in your life. So please, do yourself a favor: pick up a pencil right now and see how many designs you can come up with in 10 minutes. The record currently stands at 12 designs in 10 minutes at our UXLx workshop in Lisbon in 2024. Think you can beat that? Give it a try!

參考

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