Generative UI is Future

Wangzuo

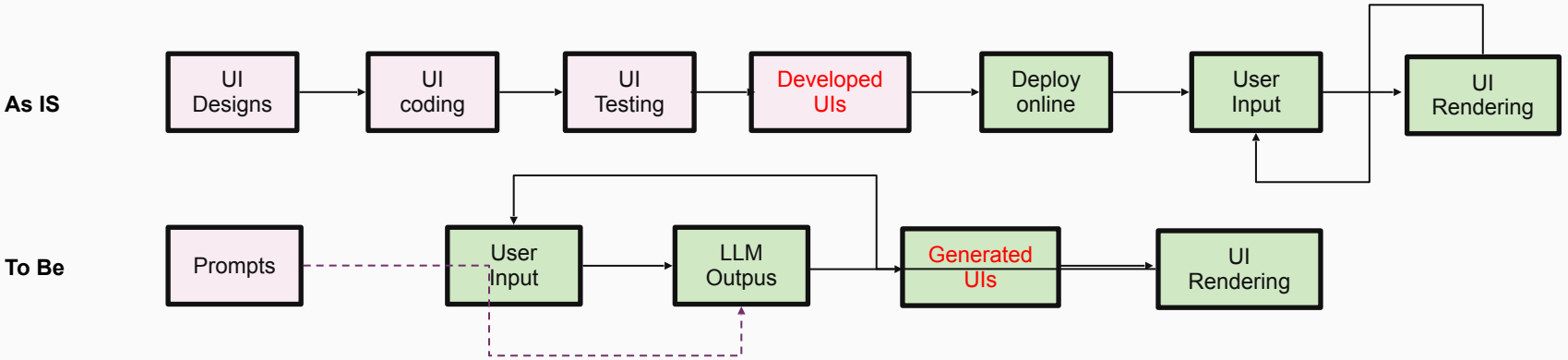
W3C AC meeting 2026
Hangzhou, China
20-22 April 2026

UI Will Be Generated Dynamically on Demand

static and enumerable user interfaces established based on agreement between PMs and users

⟹

dynamic and unpredictable user interfaces generated in real-time by LLM outputs



- Advantage:
  - > more efficient
  - > customized UI

- Disadvantage:
  - > quality
  - > token cost
  - > speed

Gen-UI Is A Cutting-Edge Field of Research

Markdown UI

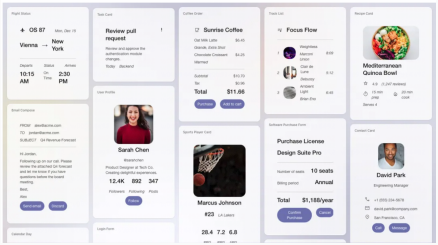
rich text rendering supports tables, flowcharts, and text hierarchy separation, but lacks interactivity

这是最常见的免费或低成本解决方案。您将 Obsidian 的本地库文件夹直接放在云存储服务的同步文件夹中。

云服务	推荐平台	优点	注意事项
iCloud Drive	macOS, iOS, iPadOS	与 Apple 生态系统深度整合，在 Apple 设备上表现最佳。	Windows 上可能不稳定，Android 上无法使用。
Google Drive	全平台 (Windows, macOS, Android, iOS)	跨平台兼容性好。	手机端同步可能需要等待。
OneDrive	全平台 (Windows, macOS, Android, iOS)	尤其适合 Windows 用户，与 Office 协作好。	
Dropbox	全平台 (Windows, macOS, Android, iOS)	同步速度通常较快，文件冲突处理机制成熟。	

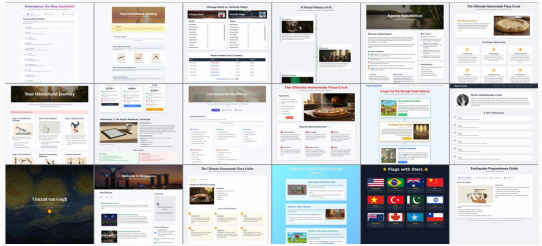
Template UI

By assembling pre-defined UI components, simple and reduces the demand on LLM capabilities, i.e A2UI



Direct Generative UI

Directly generates fine-grained UI description languages, such as HTML tags and CSS styles



Web is perfect platform for Generative UI:

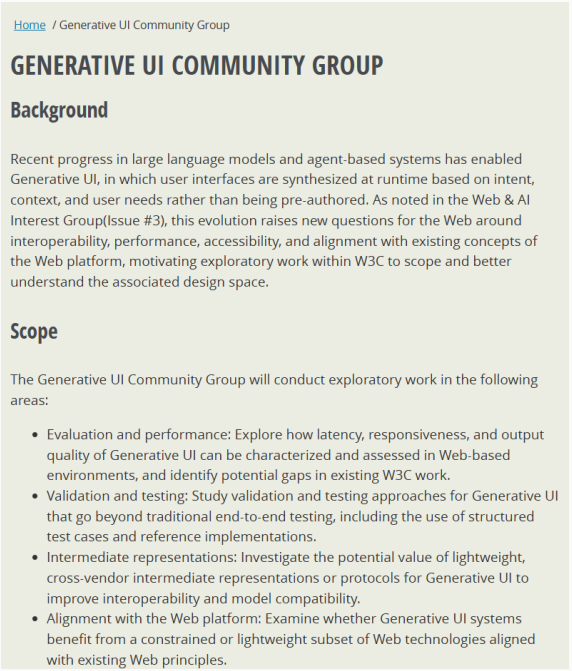
1. across-platform
2. LLM-friendly

Welcome to Generative UI CG

- Generative UI CG background
  - > Driven by shared interest, we have explored a wide range of generative UI topics in China including Alibaba，Ant Group，ByteDance, Baidu and Tencent etc.

https://github.com/w3c/webevolve-series/blob/main/2026/01-generative-ui/report.zh.md

- Core topics of interest to the CG
  - > **Generation quality**: How to evaluate the visual correctness and aesthetic appeal of generated UI interfaces
  - > **A subset of HTML Tags and CSS styles**: How to abstract a subset of HTML tags and CSS styles as web-based UI generation assets to balance token cost and generation quality



Home / Generative UI Community Group

GENERATIVE UI COMMUNITY GROUP

Background

Recent progress in large language models and agent-based systems has enabled Generative UI, in which user interfaces are synthesized at runtime based on intent, context, and user needs rather than being pre-authored. As noted in the Web & AI Interest Group(Issue #3), this evolution raises new questions for the Web around interoperability, performance, accessibility, and alignment with existing concepts of the Web platform, motivating exploratory work within W3C to scope and better understand the associated design space.

Scope

The Generative UI Community Group will conduct exploratory work in the following areas:

- Evaluation and performance: Explore how latency, responsiveness, and output quality of Generative UI can be characterized and assessed in Web-based environments, and identify potential gaps in existing W3C work.
- Validation and testing: Study validation and testing approaches for Generative UI that go beyond traditional end-to-end testing, including the use of structured test cases and reference implementations.
- Intermediate representations: Investigate the potential value of lightweight, cross-vendor intermediate representations or protocols for Generative UI to improve interoperability and model compatibility.
- Alignment with the Web platform: Examine whether Generative UI systems benefit from a constrained or lightweight subset of Web technologies aligned with existing Web principles.

https://www.w3.org/community/gen-ui/