
Monorepo
The Silver Bullet for Software Development!?

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2. Why use monorepo?
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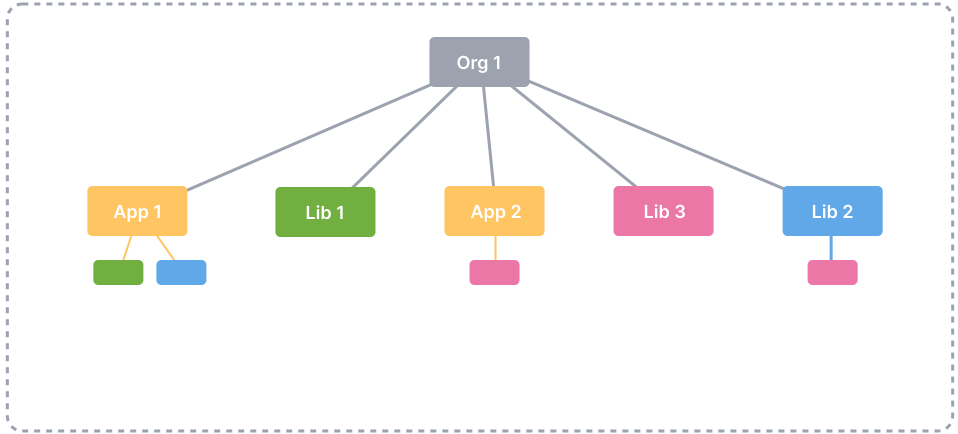
What's monorepo

A single repository containing multiple distinct projects, with well-defined relationships.

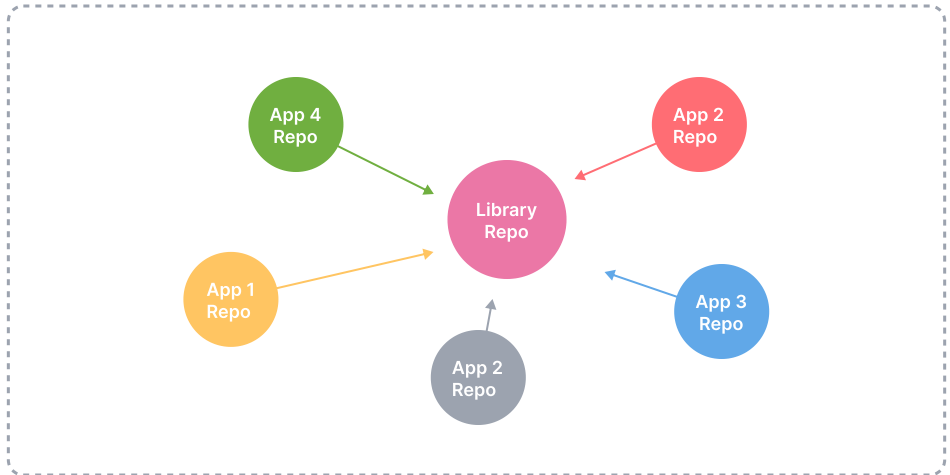
- Detecting affected projects/packages
- ability to run tasks in the correct order and in parallel
- Consistent tooling

reference: Misconceptions about Monorepos: Monorepo != Monolith

Monorepo



Polyrepo



Why use monorepo?

Pros:

- 共享程式碼與資源
- 簡化部署與維護
- 提高協作效率

Cons:

- 增加 Repository 複雜度

Why use polyrepo?

Pros:

- 專案單純易懂
- 技術選擇獨立
- 專案間相依定義明確：版號

Cons:

- 重工
- CI/CD 各專案各自設定，更動成本高

Nx

Next generation build system with first class monorepo support and powerful integrations.

- 提高開發效率
  - Project Generator
  - Task Executor
  - 根據需求可客制專案模板？
- 提高可維護性
  - 使用命名約定來提高代碼的可讀性
  - 使用 linters 和型別檢查來提高代碼質量
- 提高可測試性
  - Unit, Integration, E2E Tests
  - 自動化測試流程
  - 對依賴的專案重新測試

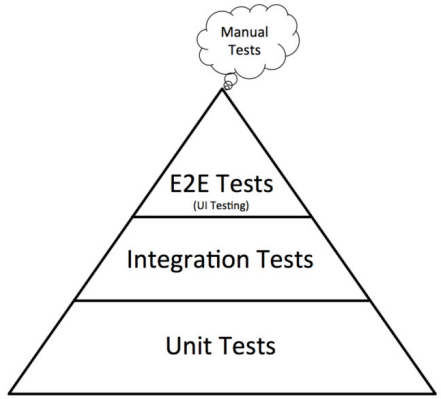
reference

Generators, Executors

Nx	Workspace	Devkit	Angular	Cypress
Detox	Esbuild	Eslint Plugin	Expo	Express
Jest	Js	Linter	Nest	Next
Node	Playwright	Plugin	React	React Native
Rollup	Rspack	Storybook	Vite	Web
Webpack				

1. Official
2. Communities
   - Local Generators(Expensive)
   - Local Executors(Expensive)
3. nx:run-commands

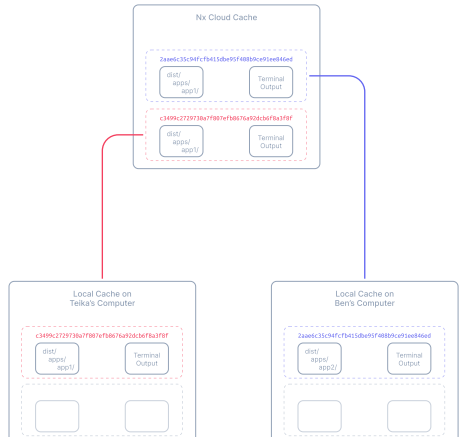
Testing



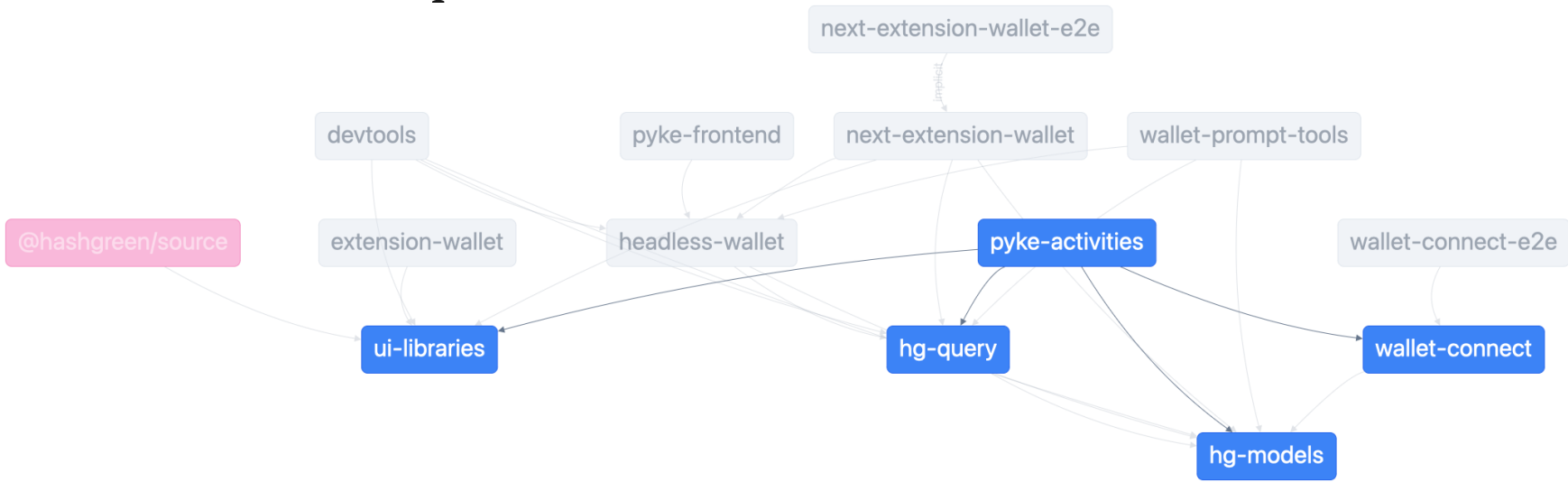
- Unit Tests：對 libraries
  - Jest
  - Vitest
- Integration Tests:
- E2E Tests: 對 apps
  - Playwright
  - Cypress

Caching

- Local Caching
  - 提升個人開發效率
- Remote Caching
  - 提升組織開發效率
  - 降低CI成本



frontend-monorepo



Libraries

hg-models	data classes
hg-query	data fetching e.g. Fetch API, SWR, RTK Query
headless-wallet	headless chia wallet
ui-libraries	utilities, hoogii, pyke

Apps

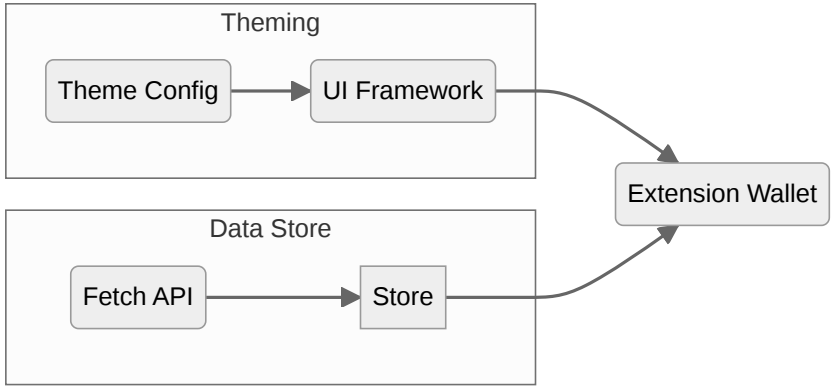
- pyke-activities
- wallet-prompt-tools
- devtools
- extension-wallet

Tests

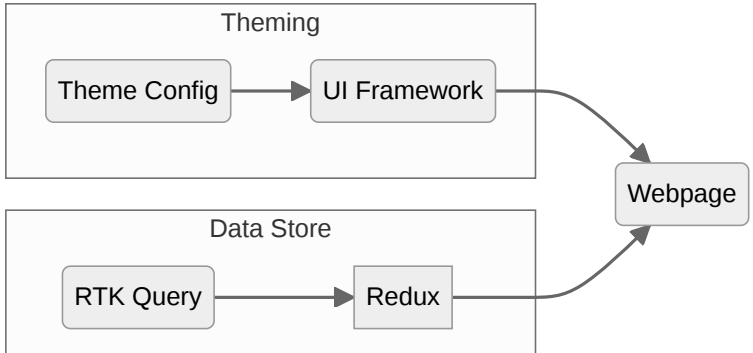
- pyke-frontend:
  - e2e test on stg
- wallet-connect-e2e:
  - integration tests for wallet-connect

Case Study - Pyke, Hoogii and Ivern - Before

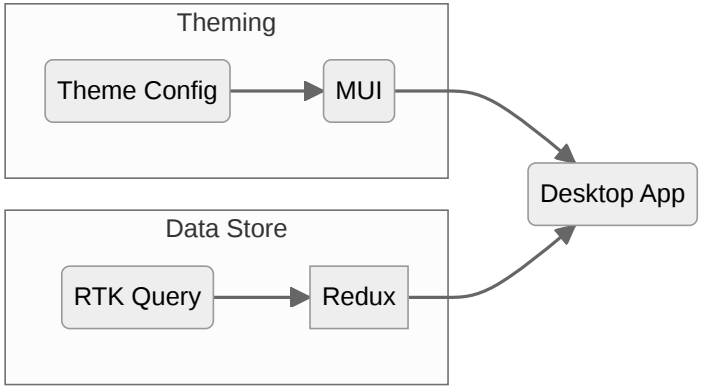
Hoogii



Pyke



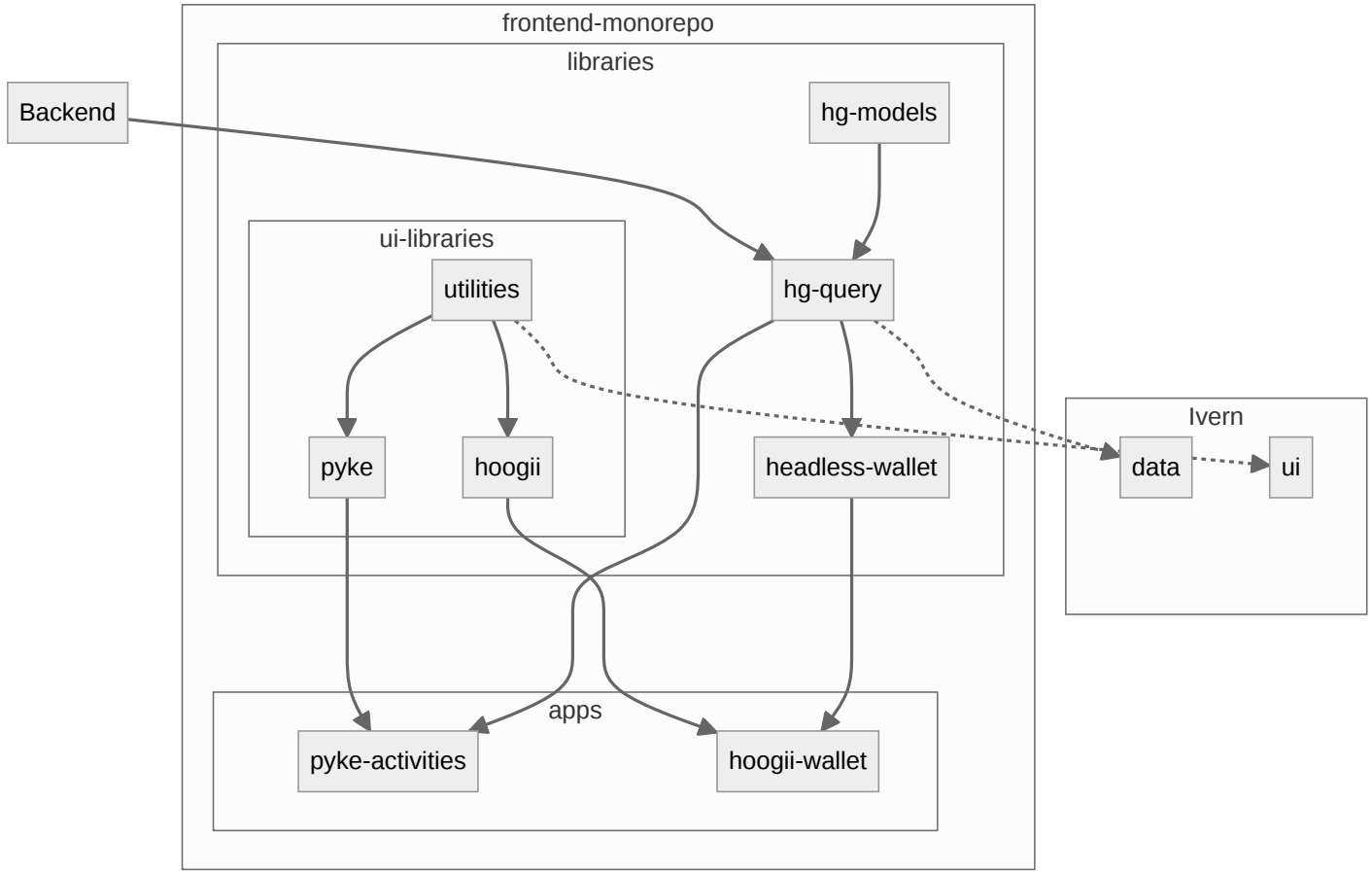
Ivern



共通項目

- Theming:
  - 色票、字型設定
  - 常用功能的 CSS classes
- Data Store:
  - 資料拿取的網址、傳輸的資料
  - 取得資料後的後處理

Case Study - Pyke, Hoogii and Ivern - After



Discussion

1. js/ts bundler 扮演專案間接合劑; ts compiler 做 bundlers 間的縫合; linters 作為其中的約束器

- Vite
- Webpack/Turbopack
- `tsconfig.base.json`: 設定全域模組引入
- `/.eslintrc.json`: 限制模組依賴

2. 程式碼歸屬、存取修改權限的限制
3. 版號控制、CI/CD 效率提升

- libries
  - workflow_dispatch
  - 改動偵測、利用 dependencies graph 達到有效率的自動化部屬
- apps
  - containerize
  - 結案、維運的專案的封存機制