

# Cross-Platform Plugin Development with Nx

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# Agenda

**What is Nx?**

**Capacitor Plugins**

# What is Nx?

# What is Nx?

- **Smart, Extensible Build Framework**
- **Monorepos**
- **Nx CLI**
- **Integrates with Modern Tooling**

# Nx is Smart





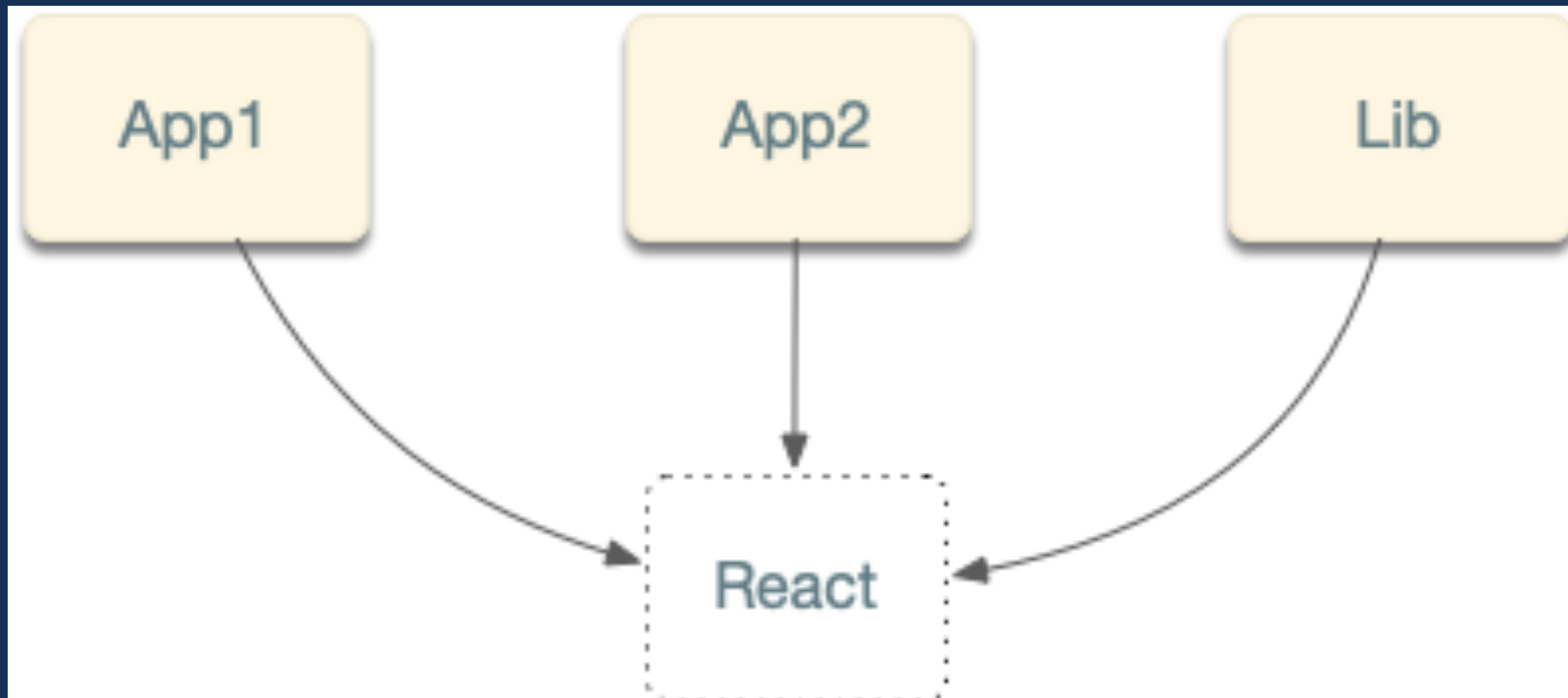


# Nx is Smart

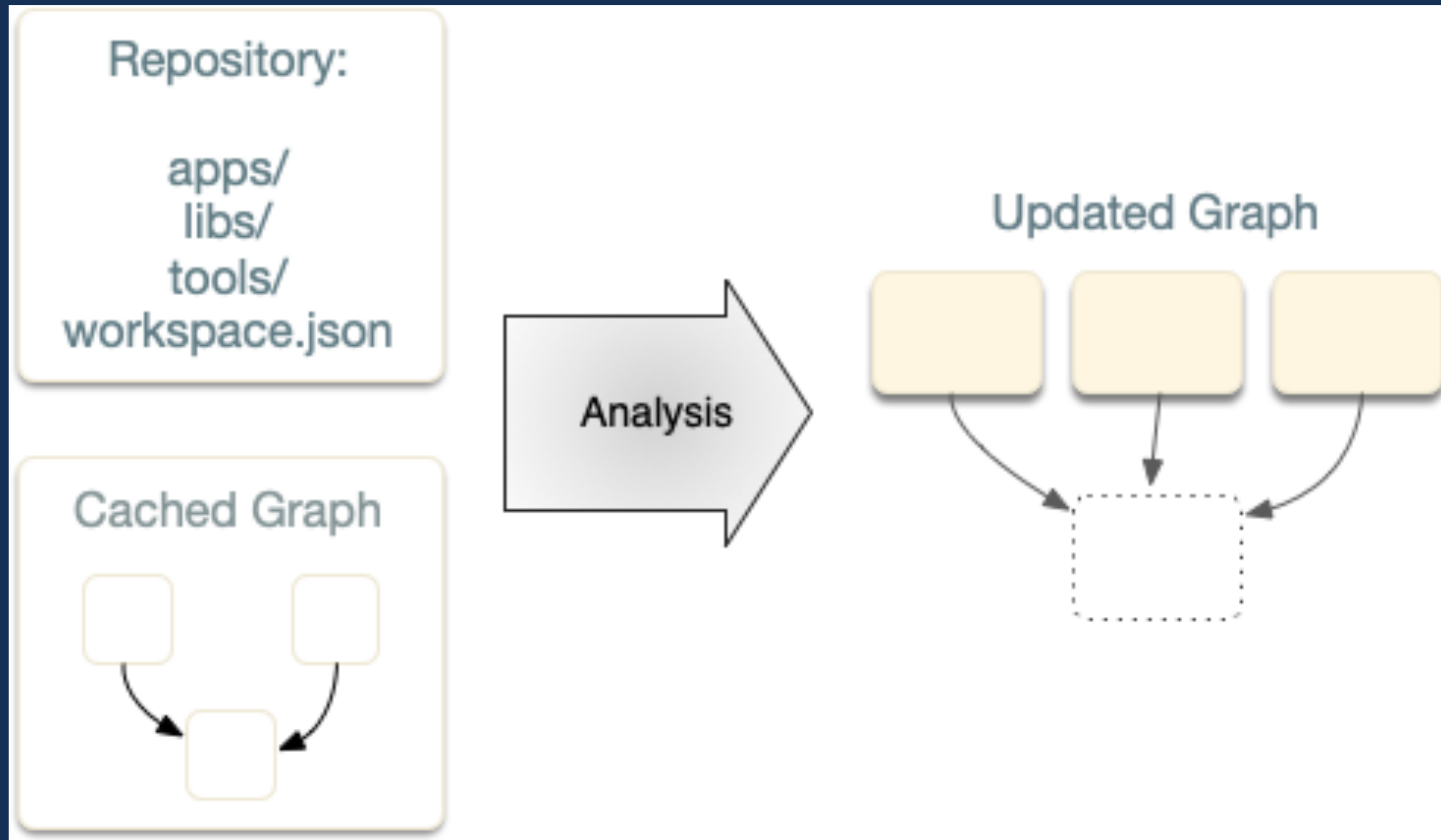
- **Project Graph**
- **Task Graph**
- **Metadata-driven**
- **Affected Commands**
- **Code generation**
- **Caching**



# Project Graph

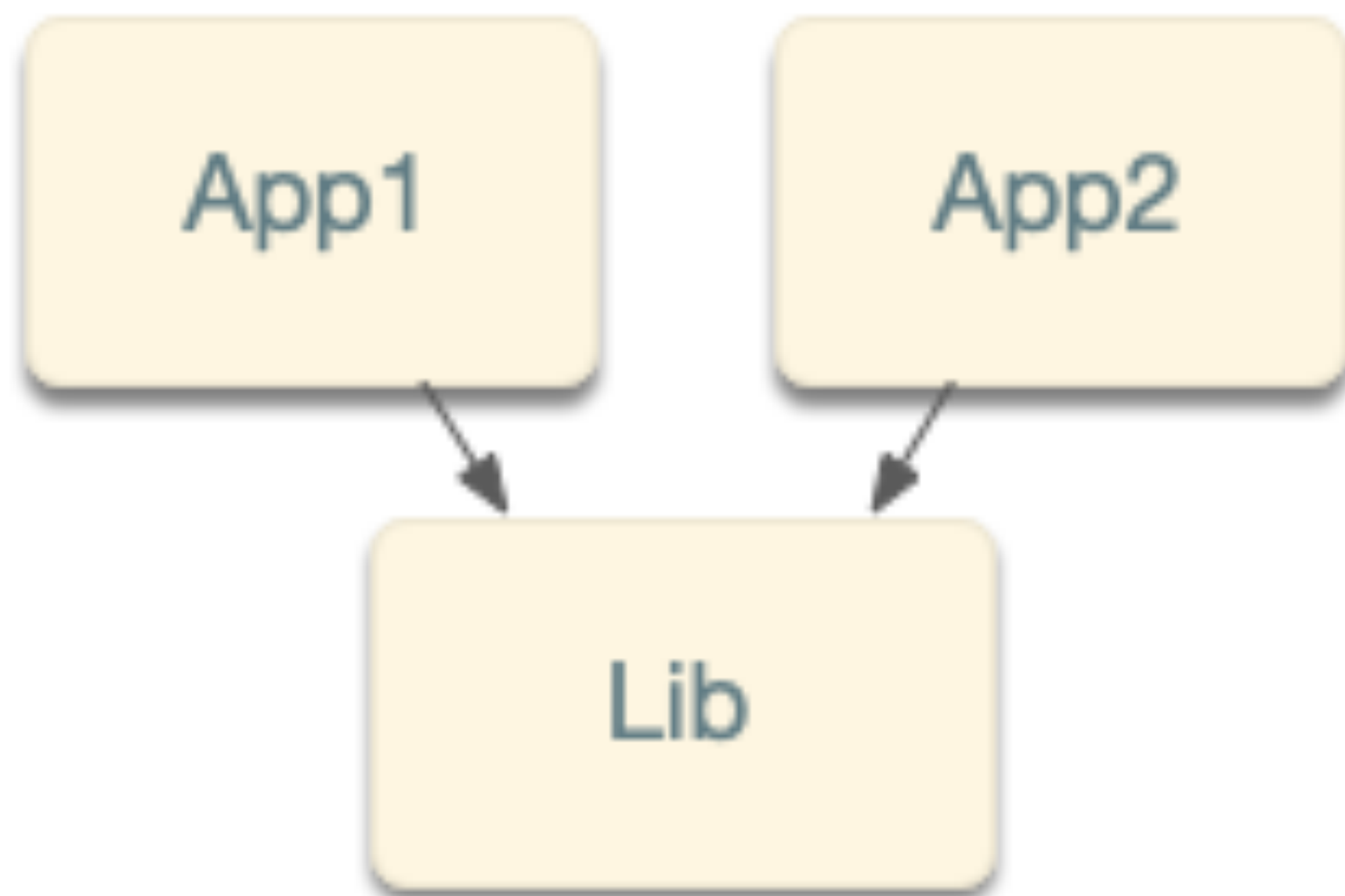


# Project Graph



# Task Graph

Project Graph



Task Graph for:

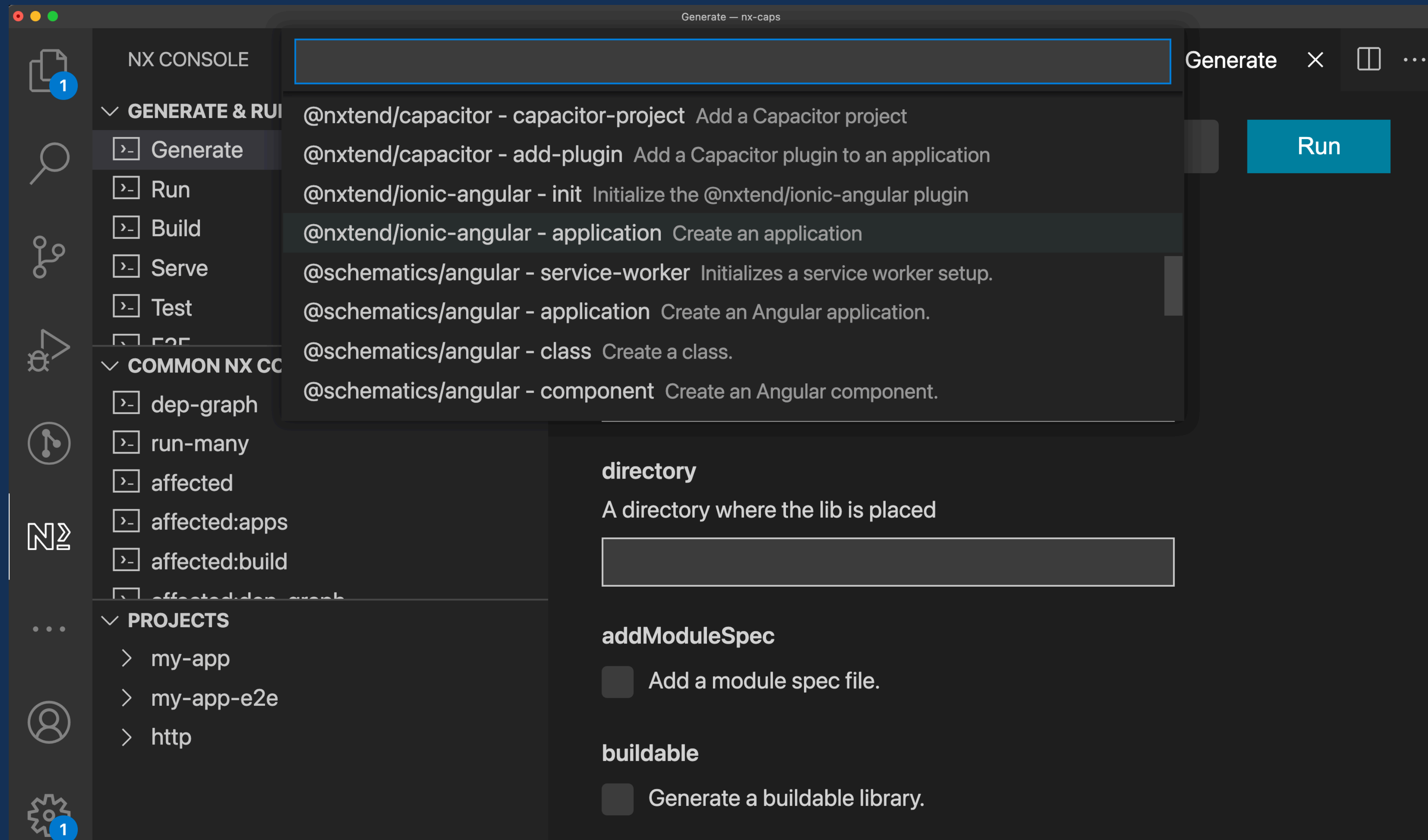
`nx run-many --target=test --projects=app1,app2,lib`



# Metadata-driven

```
{
  "$schema": "http://json-schema.org/schema",
  "cli": "nx",
  "$id": "NxCapacitorApp",
  "title": "Create a Capacitor Application",
  "type": "object",
  "properties": {
    "name": {
      "description": "The name of the application.",
      "type": "string",
      "$default": {
        "$source": "argv",
        "index": 0
      },
    },
    "x-prompt": "What name would you like to use for the application?",
    "pattern": "^[a-zA-Z].*$"
  }
}
```

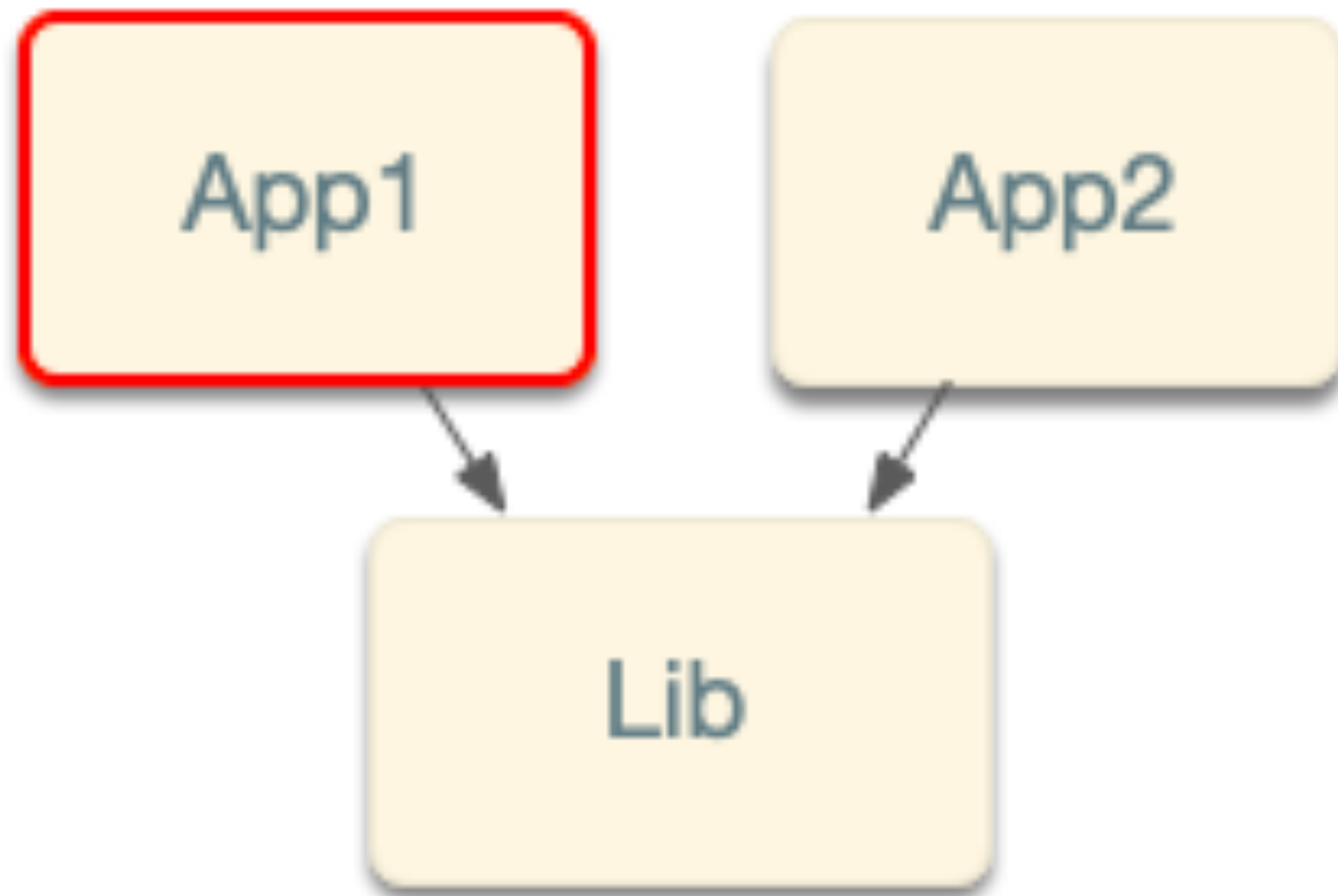
# Metadata-driven



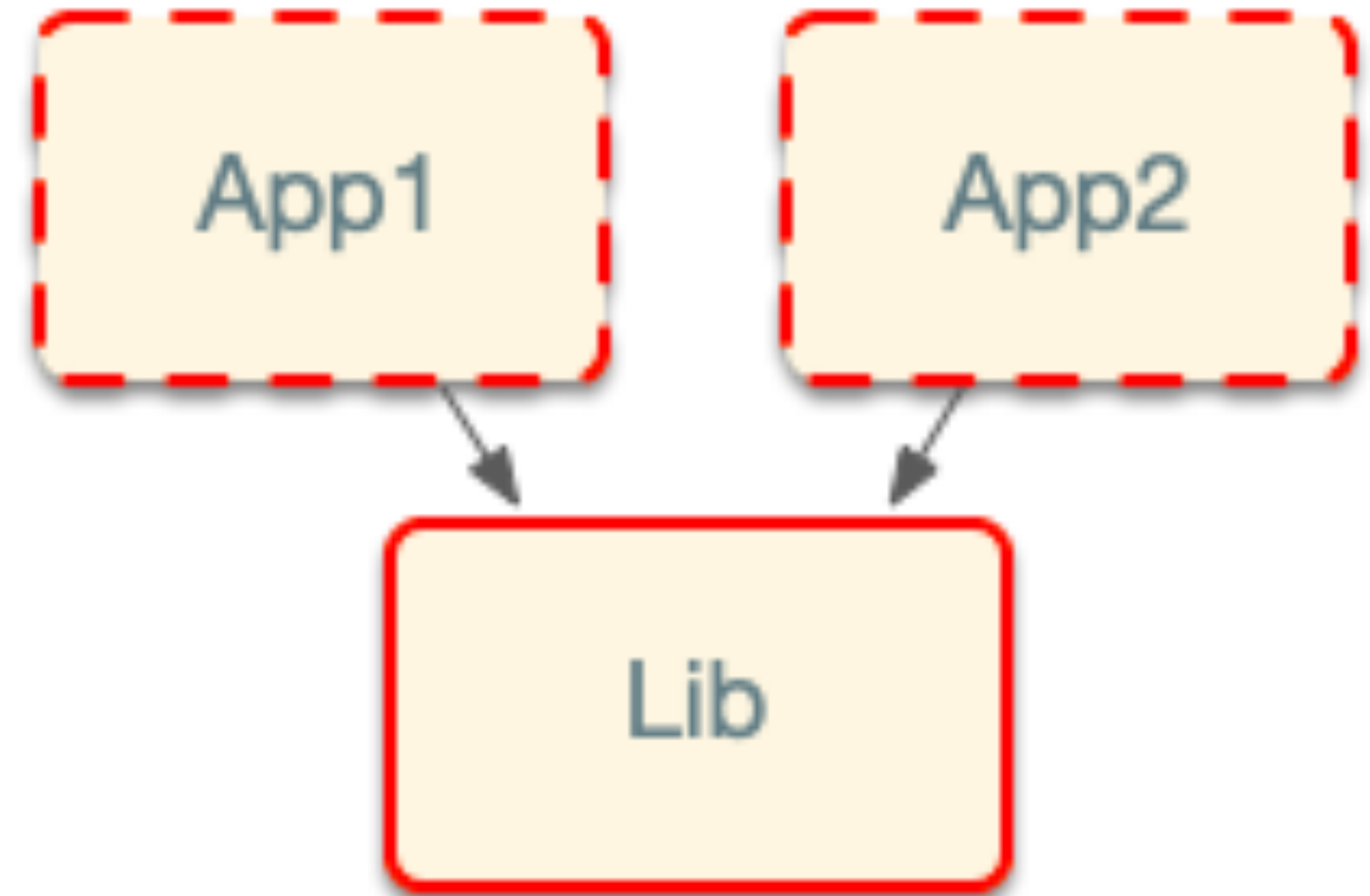


# Affected Commands

Changing app1 can only  
affect app1



Changing lib can affect lib,  
app1, app2



# Common Commands

- **nx generate**
- **nx serve**
- **nx build**
- **nx test**
- **nx dep-graph**
- **nx affected**

# Build Framework

- **React**
- **Angular**
- **Node**
- **Next.js**
- **And more**

# Nx is Extensible

- **Plugins**

# Nx Plugins

- **npm packages**
- **Generators**
- **Executors**



# Generators

- Automation
- Vanilla JavaScript
- Create/Update
- Modify configuration
- Delete
- Applications, libraries, components ...

**nx generate my-app**

# Executors



# Executors

- **Define actions**
- **Serve**
- **Build**
- **Test**
- **Lint**
- **Applications, libraries ...**



**nx serve my-app**

# Nxtend

A collection of third-party Nx plugins

Get Started

## Develop Cross-Platform Applications in a Monorepo

The Ionic and Capacitor plugins enable developers to build cross-platform applications in an Nx workspace.

## Integrate Firebase

Utilize Firebase to develop applications in an Nx workspace.

## Easily Update Dependencies

Nxtend plugin migrations will automatically update dependencies installed by the plugins used.

[nxtend.dev](https://nxtend.dev)

```
npx create-nx-workspace myorg —preset=empty
```

```
yarn add @nxtend/ionic-react --dev
```

```
yarn add @nxtend/ionic-angular --dev
```



**nx generate @nxtend/ionic-angular:init**

**nx generate @nxtend/ionic-angular:app my-app**

# Modern Tooling



# Computation Caching

```
brandons-mbp-2:myorg robertsbt$ nx test blog
```

```
> nx run blog:test
```

```
PASS blog apps/blog/src/app/app.spec.tsx
```

```
App
```

```
✓ should render successfully (29 ms)
```

```
✓ should have a greeting as the title (17 ms)
```

```
Test Suites: 1 passed, 1 total
```

```
Tests: 2 passed, 2 total
```

```
Snapshots: 0 total
```

```
Time: 1.389 s, estimated 2 s
```

```
Ran all test suites.
```

```
brandons-mbp-2:myorg robertsbt$
```



```
[brandons-mbp-2:myorg robertsbt$ nx test blog
```

```
> nx run blog:test
```

```
> NX NOTE Cached Output:
```

```
PASS blog apps/blog/src/app/app.spec.tsx
```

```
App
```

```
✓ should render successfully (29 ms)
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Time: 1.389 s, estimated 2 s
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```
Ran all test suites.
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```
brandons-mbp-2:myorg robertsbt$
```

# Capacitor

- **Cross-platform Native Runtime for Web Apps**
- **Web Native applications**
- **Successor to Cordova**



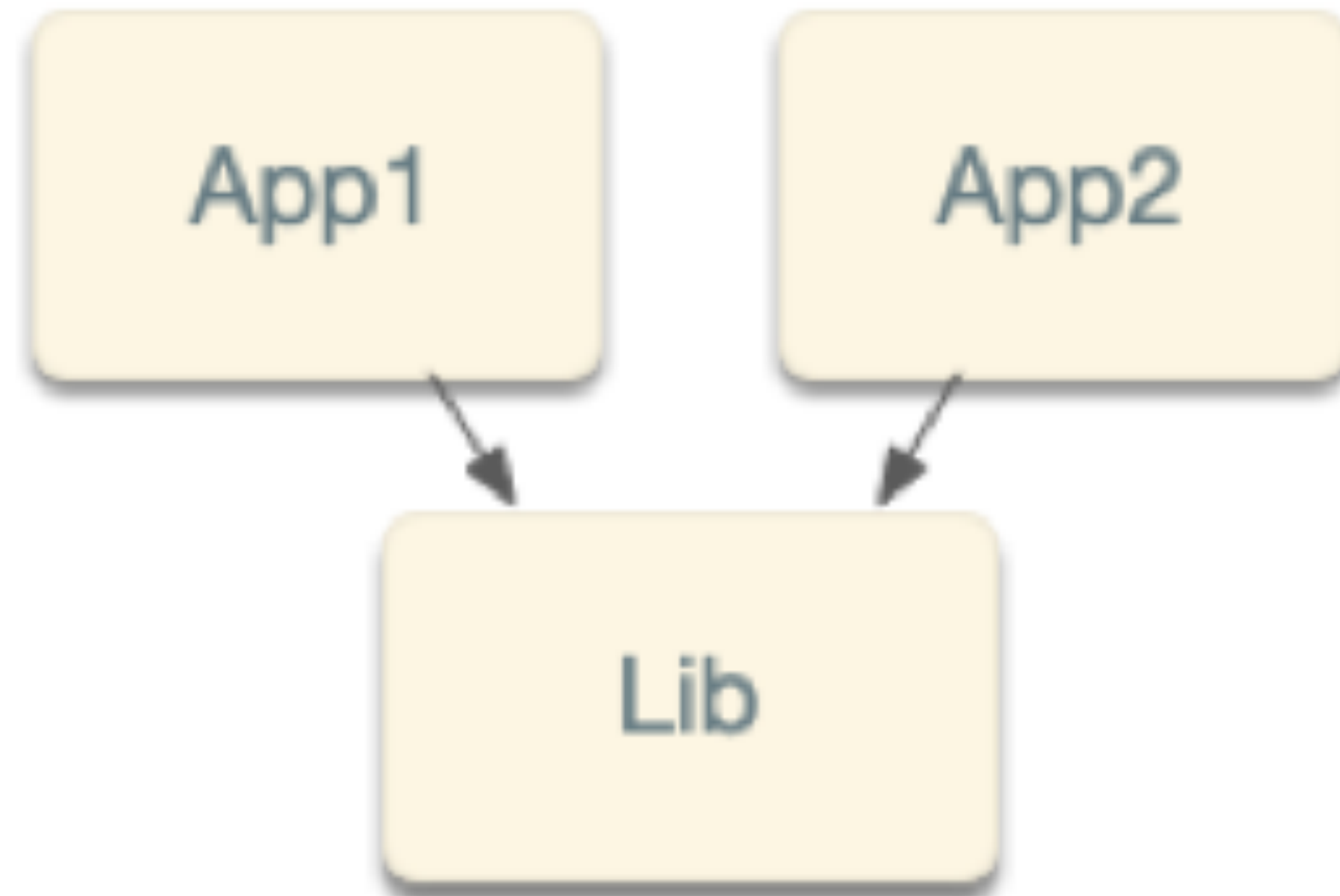
# Capacitor Plugins

- **Enable JavaScript to interface directly interface with Native APIs**
- **Official Plugins**
- **Community Plugins**

# Development Workflow

- Initialize a new repo
- Develop plugin
- Publish/link plugin

# Build Together



# Nx + Capacitor Plugins

- **Monorepo**
- **Single-version policy**
- **Consistent build tooling**
- **Build apps and plugins alongside each other**
- **Code sharing**

# Demo

# Recap

- **Nx**
- **Capacitor Plugins**
- **Monorepos**

# Thank You



**Brandon Roberts**

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[github.com/brandonroberts/nx-capacitor-plugins](https://github.com/brandonroberts/nx-capacitor-plugins)

[nx.dev](https://nx.dev)