Mike Gerasymenko

Make your app modular

@

Test only what's changed

NB: Preliminary version 06.01.2023

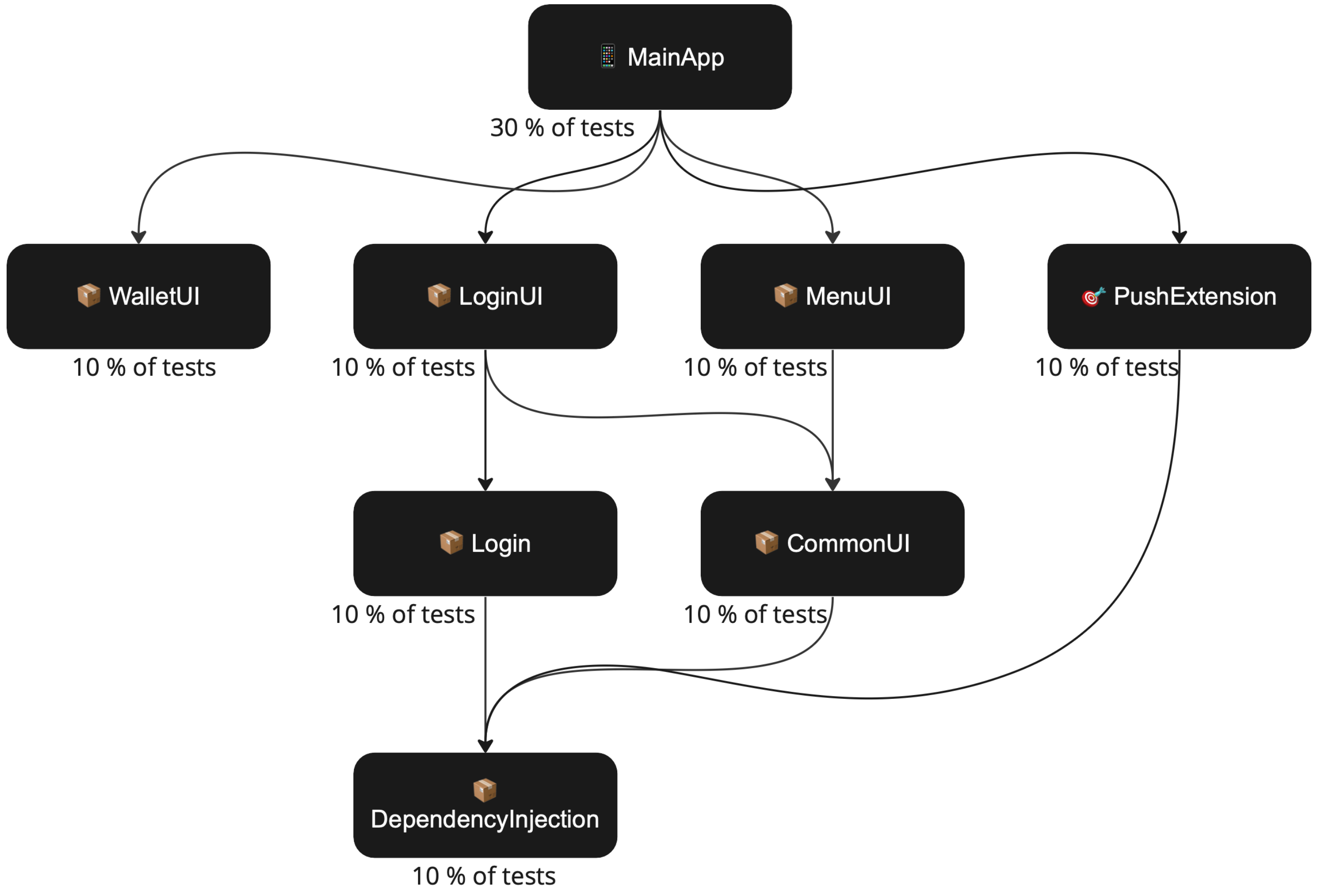
TODO: About slide

> “Insanity is doing the same thing over and over and expecting different results.”

Albert Einstein, probably

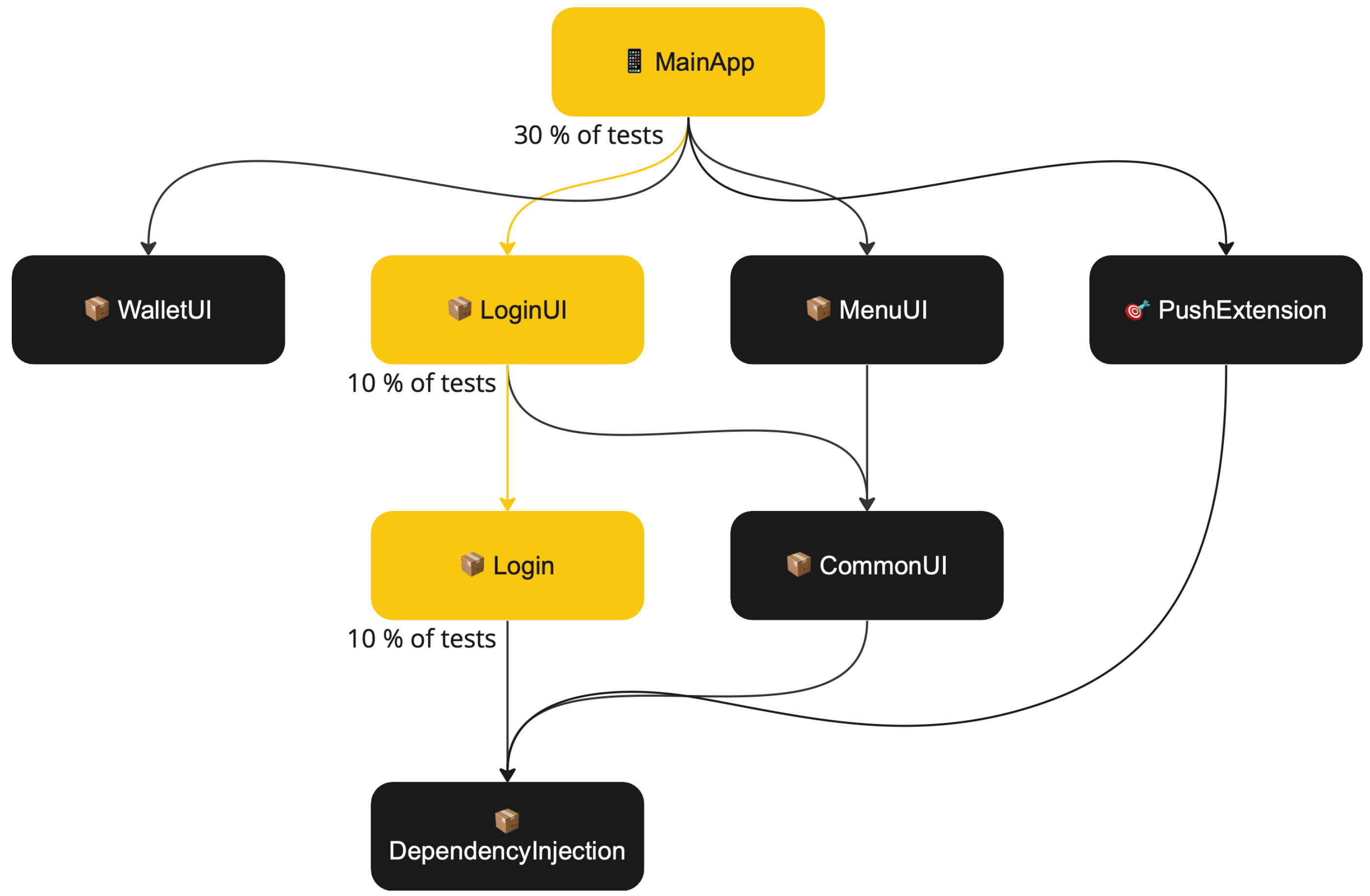
Modules

Imagine, we have the following dependencies structure



Change

If the 📦 *Login* module is changed, it would only affect the 📦 *LoginUI* and the 📱 *MainApp*.



Does it make sense to test all the modules, if we know only the 📦 *Login* module is changed?

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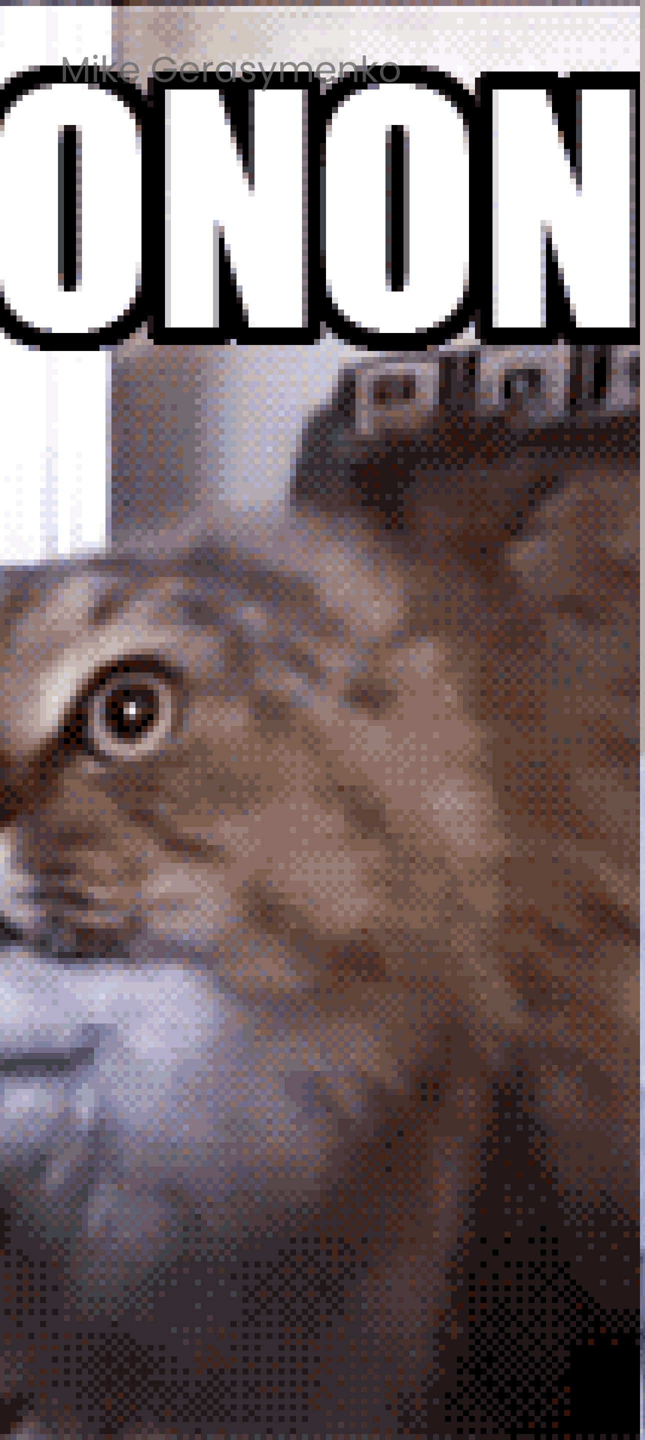
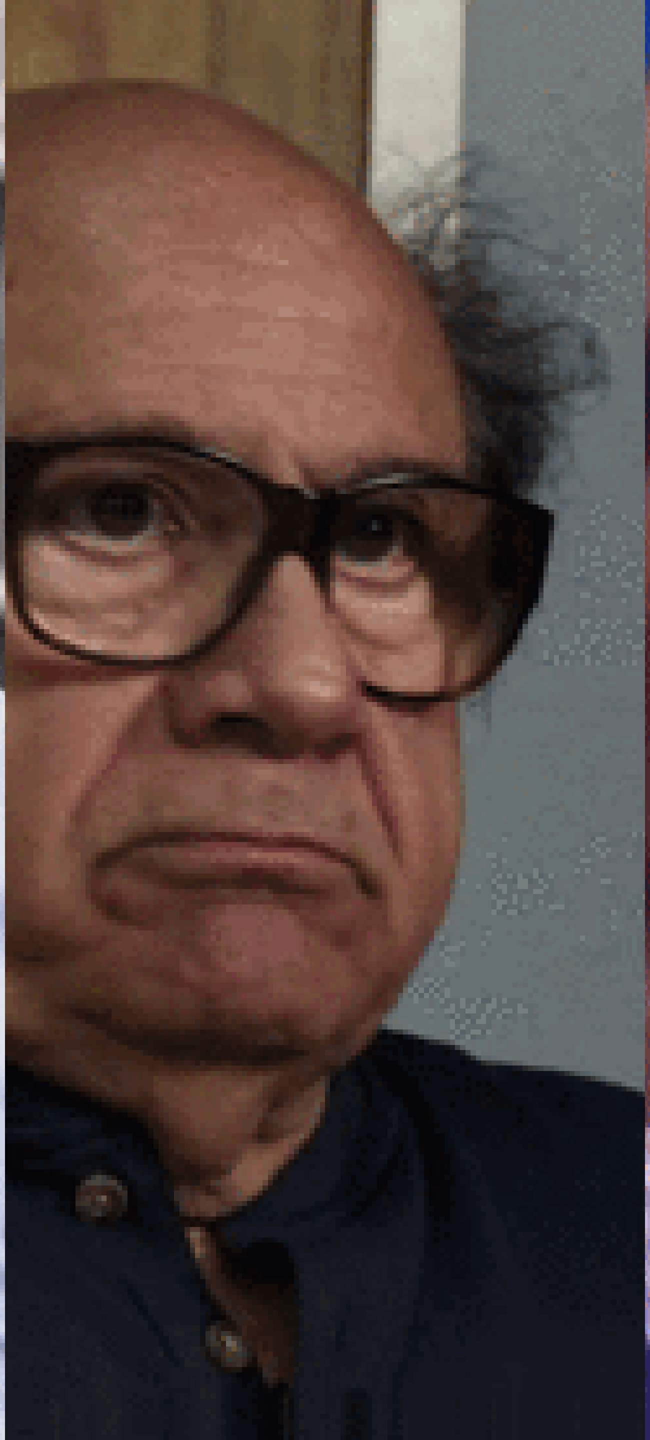
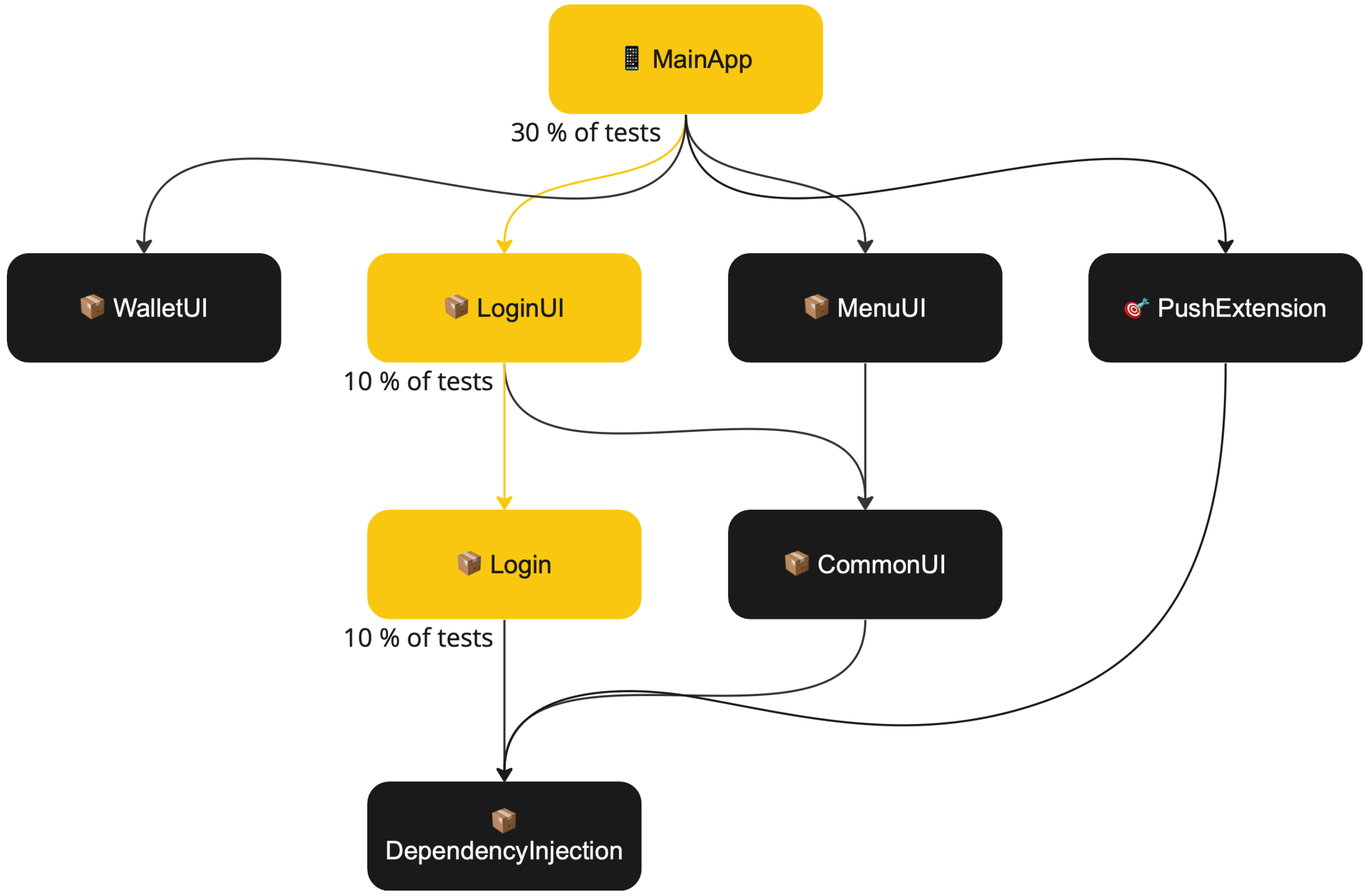




We can only run 50% of the tests and get the same results.



But how can we know?

1. Detecting what is changed

Well, Git allows us to find what files were touched in the changeset.

```
Root
├── Dependencies
│   └── Login
│       ├── ❗LoginAssembly.swift
│       └── ...
├── MyProject.xcodeproj
└── Sources
```

2. Build the dependency graph

Going from the project to its dependencies, to its dependencies, to dependencies of the dependencies, …

Can be achieved with *xcodeproj* gem or a similar library.

Dependencies between packages can be parsed with `swift package dump-package`.

BTW, This is the moment your Leetcode graph exercises would pay off

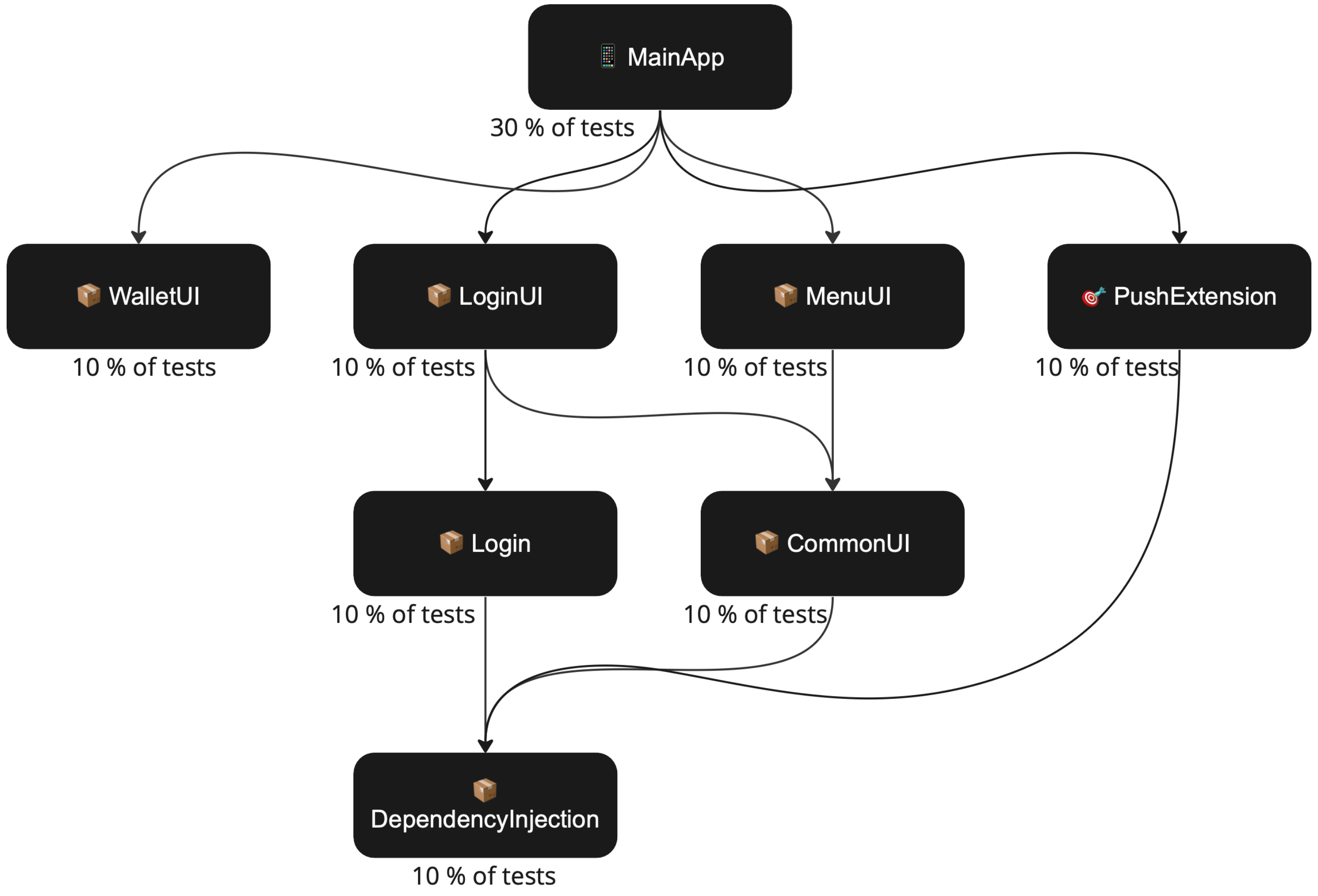
#SaintsAndSinners
BOUNCE

2.5. Save the list of files for each dependency

This is important, so we'll know which files affect which targets.

3. Traverse the graph

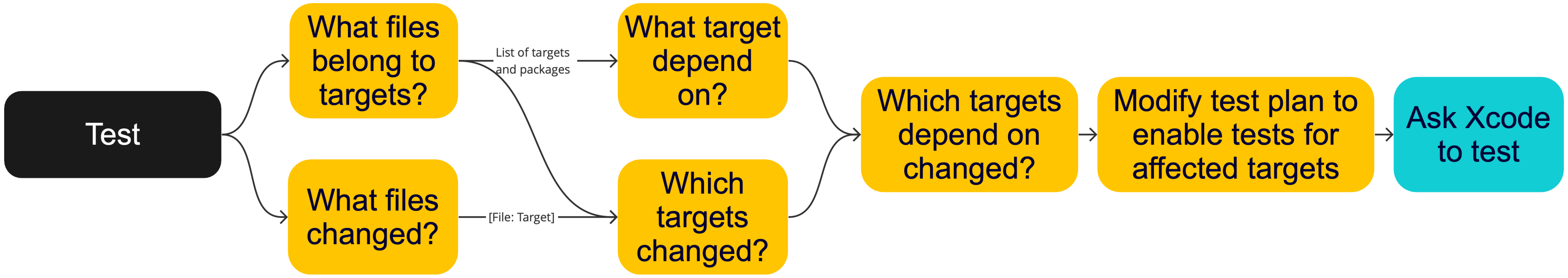
Go from every changed dependency all the way up, and save a set of dependencies you've touched.



4. Disable tests that can be skipped in the scheme / test plan

This is actually the hardest part. Dealing with obscure Xcode formats. But if we get that far, we will not be scared by 10-year-old XMLs.

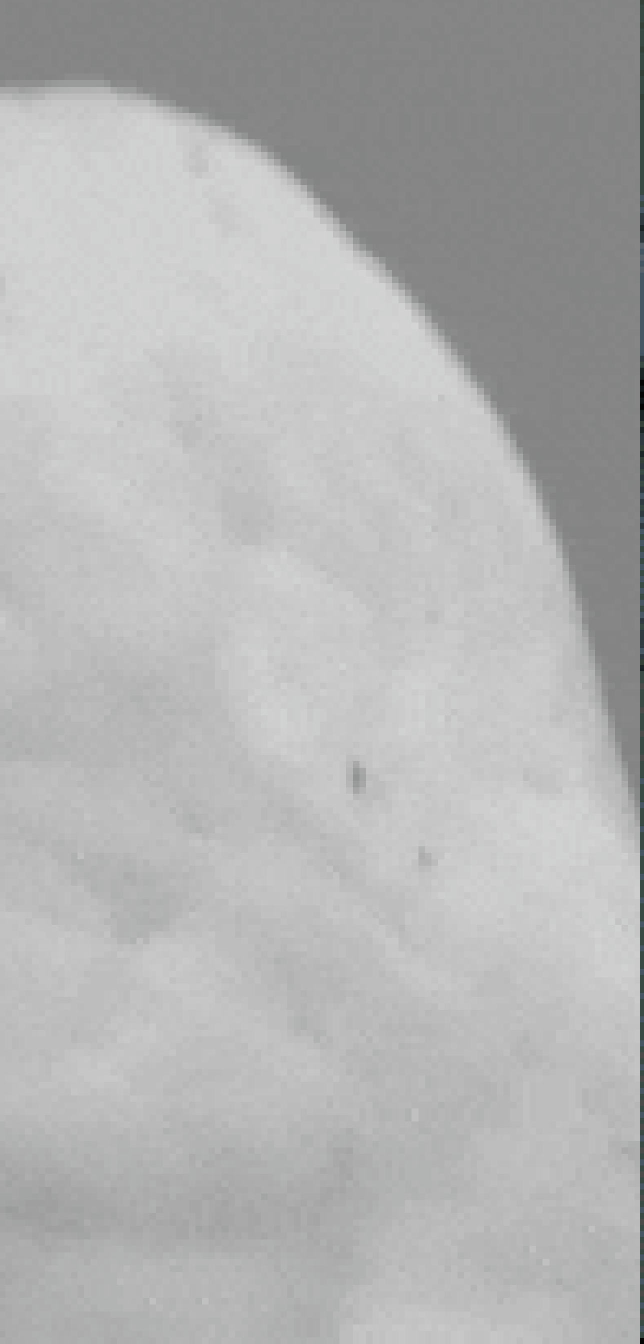
Overview


Test
What files belong to targets?
What files changed?
List of targets and packages
[File: Target]
What target depend on?
Which targets changed?
Which targets depend on changed?
Modify test plan to enable tests for affected targets
Ask Xcode to test

Sounds like fun, Mike

But I am not going to implement it now.

Luckily, we implemented it already.



Fastlane plugin test_changed

TODO: Github link

Syntax

Exactly the same syntax as test/scan fastlane commands.

What's next?

Questions