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Flutter Maintainability

ทำความรู้จักกับการเขียน Test ให้กับ Flutter
เพื่อให้โค้ดของเรามีคุณภาพที่ดีอยู่เสมอ

About
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- How to Write E2e Test In Flutter
- How to Write Golden Test in Flutter
- Using CI with Flutter Projects

Unit Test in Dart

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Unit Testing (Dart)

```dart
class Counter {
  int value = 0;

  void increment() => value++;

  void decrement() => value--;
}

void main() {
  test('Counter value should be incremented', () {
    final counter = Counter();

    counter.increment();

    expect(counter.value, 1);
  });
}
```

```
$ flutter test test/counter_test.dart
```

Unit Testing (Flutter)

```dart
import 'package:flutter/material.dart';
import 'package:flutter_test/flutter_test.dart';

import 'package:test_mode/main.dart';

void main() {
  testWidgets('Counter increments smoke test', (WidgetTester tester) async {
    await tester.pumpWidget(const MyApp());

    expect(find.text('0'), findsOneWidget);
    expect(find.text('1'), findsNothing);

    await tester.tap(find.byIcon(Icons.add));
    await tester.pump();

    expect(find.text('0'), findsNothing);
    expect(find.text('1'), findsOneWidget);
  });
}
```

E2E Test in Flutter

E2E
(Integration Testing)

```dart
void main() {
  final binding = IntegrationTestWidgetsFlutterBinding.ensureInitialized()
      as IntegrationTestWidgetsFlutterBinding;

  testWidgets('screenshot', (WidgetTester tester) async {
    // Build the app.
    app.main();

    // This is required prior to taking the screenshot (Android only).
    await binding.convertFlutterSurfaceToImage();

    // Trigger a frame.
    await tester.pumpAndSettle();
    await binding.takeScreenshot('screenshot-1');
  });
}
```

```
$ flutter drive \
  --driver=test_driver/integration_test.dart \
  --target=integration_test/foo_test.dart
```

Golden Test (Snapshot test)


```
await expectLater(
  find.byType(MyApp),
  matchesGoldenFile('test_name.subtest.subfile.png'),
);


flutter test --update-goldens test/foo/bar_test.dart
flutter test test/foo/bar_test.dart
```

Demo
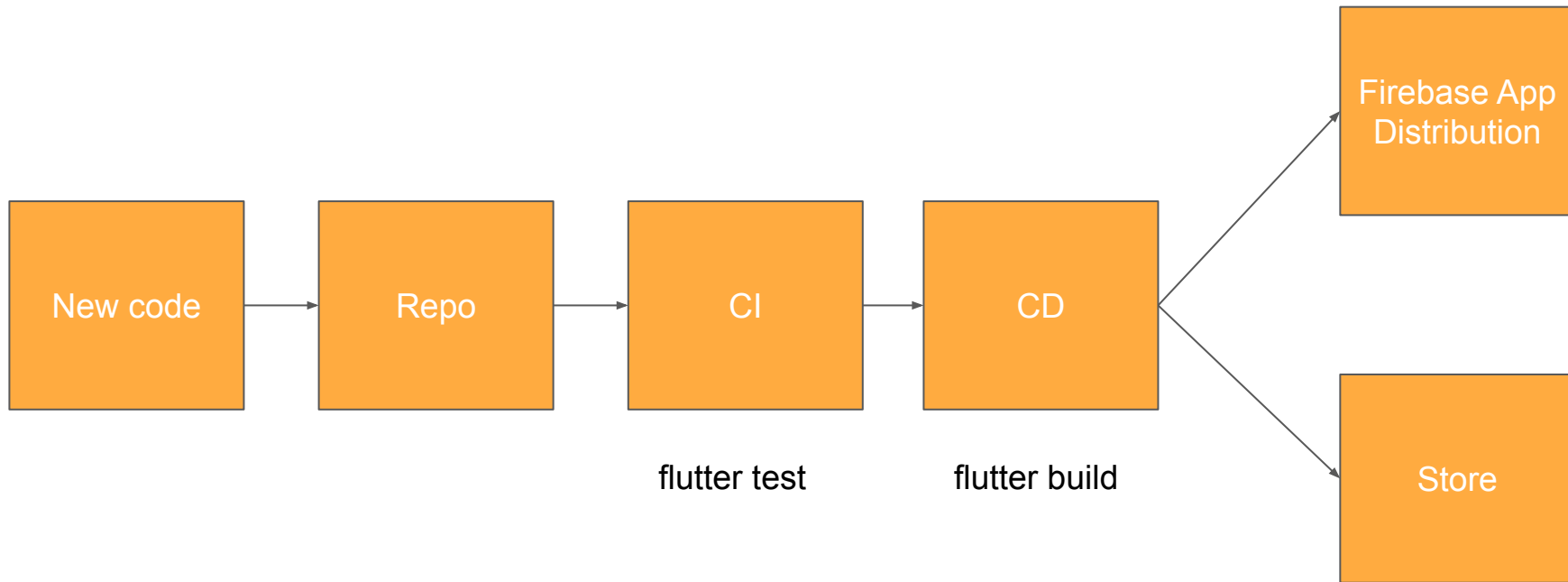
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CI/CD in Flutter

Mobile App CI/CD

New code → Repo → CI → CD

flutter test

flutter build

CD → Firebase App Distribution

CD → Store

CI/CD for mobile
that matches your needs

Select the type of project you are working with and get started now!

Flutter	Native Android	Native iOS	React Native
Cordova	Ionic	Unity	**NEW** Whitelabel

Edit codemagic.yaml

```yaml
1   workflows:
2     android-workflow:
3       name: Android Workflow
4       max_build_duration: 120
5       environment:
6         groups:
7           # Add the group environment variables in
8           - keystore_credentials # ←— (Includes FC
9             # FCI_KEYSTORE ←— Put your keystore fi
10            # FCI_KEYSTORE_PASSWORD ←— Put your ke
11            # FCI_KEY_PASSWORD ←— Put your keystor
12            # FCI_KEY_ALIAS ←— Put your keystore a
13          - google_play # ←— (Includes GCLOUD_SERV
14          - other
15        vars:
16          FCI_KEYSTORE_PATH: /tmp/keystore.keystore
17          PACKAGE_NAME: "io.codemagic.flutteryaml"
18          GOOGLE_PLAY_TRACK: "alpha" # ←— This mus
19        flutter: stable
20        xcode: latest
21        cocoapods: default
```

FlutterApp
github.com/codemagic-ci-cd/flutter

Start new build →

Workflow Editor   Webhooks   Scheduled builds   ⚙ Repository settings

Build for Platforms

☑ Android   ☑ iOS   ☑ Web   ☐ macOS   ☐ Linux   ☐ Windows

Run build on

 macOS M1 Standard VM
Apple M1 / 3.2Ghz Quad Core / 8GB
Supports Android, iOS, Web, macOS and running tests

Change instance

Build triggers   ⓘ ▶

Environment variables   ⓘ ▶

Dependecy caching   ⓘ ▶

Demo

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