Testing Flutter Applications
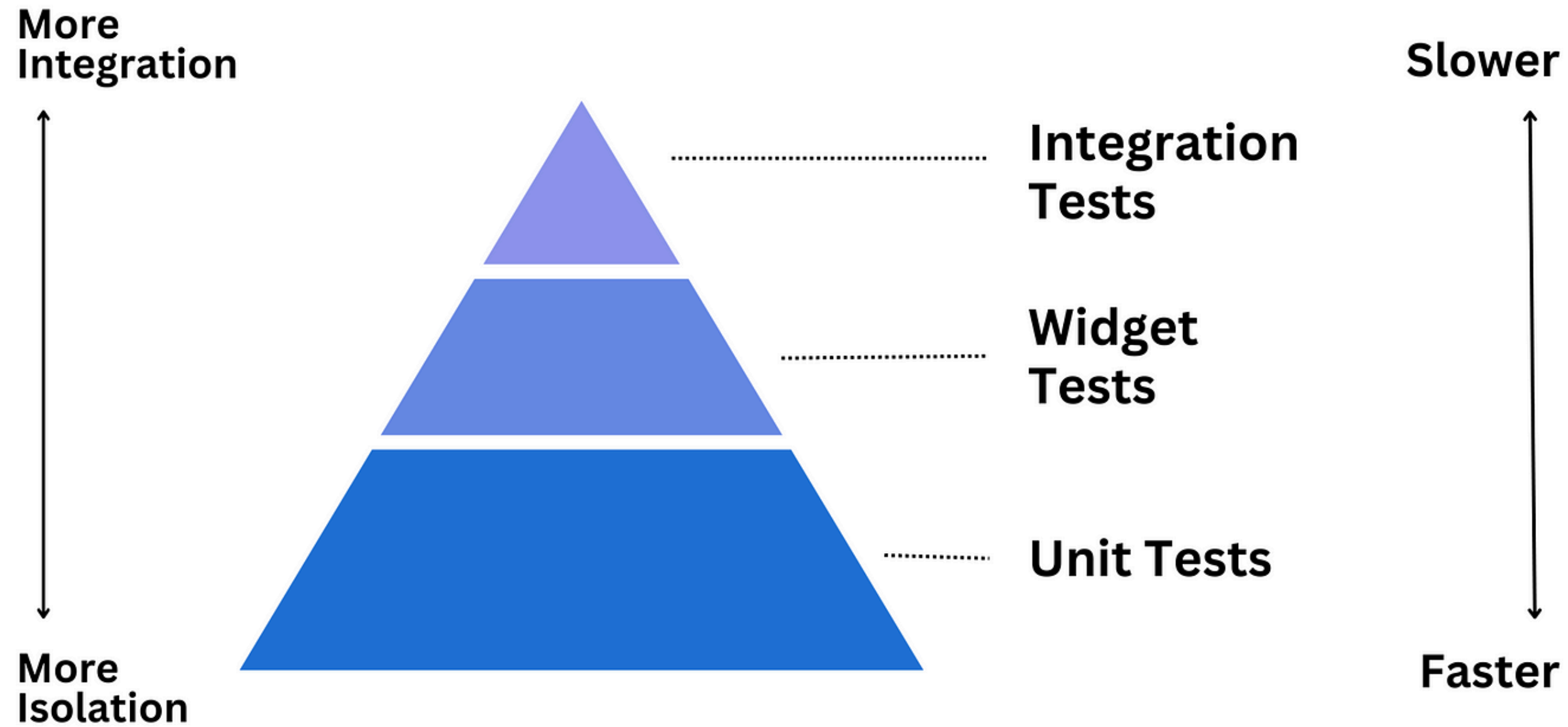

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WORKSHOP OBJECTIVES

- Understand the fundamentals of unit testing.

- Learn how to set up and write effective tests for your Flutter apps.

- Gain confidence in debugging and maintaining test code.

- Bonus: Robot testing using Firebase Test Labs

Why is Unit Testing Important?.

- **Reliability:** Ensure your code works as expected.

- **Maintainability:** Catch bugs early before they impact the app.

- **Scalability:** Safely refactor and enhance your codebase over time.

- **Confidence:** Deliver high-quality apps without fear of breaking existing features

Flutter testing pyramid

Types of Testing in Flutter

Unit Testing
- Focuses on testing individual functions or classes in isolation.

```dart
/// Function under test
int sum(int a, int b) {
  return a + b;
}

/// unit test
test("it adds two numbers together", () {
  int result = sum(20, 40);
  expect(result, 60);
});
```

Continue...

Types of Testing in Flutter

Widget Testing

- Verifies the UI behavior of individual widgets.

- **Example:** A loading indicator is diplayed while we are fetching data.
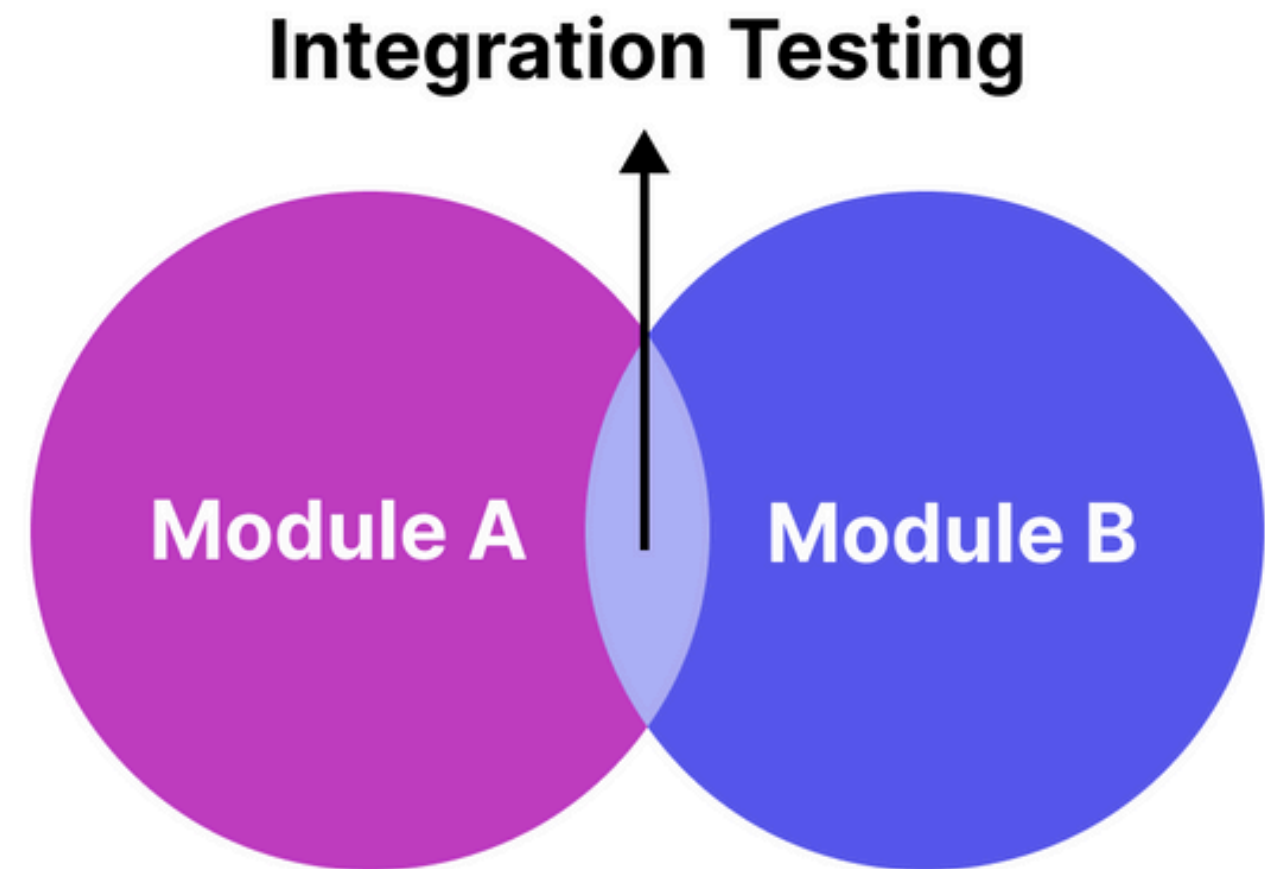
```
1  testWidgets(
2      "loading indicator is displayed while waiting for articles",
3      (WidgetTester tester) async {
4          arrangeNewsServiceReturns3ArticlesAfter2SecondWait();
5
6          await tester.pumpWidget(createWidgetUnderTest());
7          await tester.pump(const Duration(milliseconds: 500));
8
9          expect(find.byKey(const Key('progress-indicator')), findsOneWidget);
10
11         await tester.pumpAndSettle();
12     },
13 );
```

Types of Testing in Flutter

Integration Testing

- Tests the app as a whole, including user flows and backend interactions.

- **Example:** Ensuring login functionality works end-to-end.

Integration Testing

Module A

Module B

PROJECT DEMONSTRATION

Demo Of Unit Testing

Unit Testing
- Focuses on testing individual functions or classes in isolation.
- Example: In this step we will show case you the real time example in the Following structutre : **GETX and BLOC**

QNA Session

I will randomly ask questions for unit testing from the particpants.

OR

Particpants can query their question and also can particate to give answers

Demo Of Widget Testing

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Demo Of Integration Testing

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Bonus Point….

Robot Testing Using Firebase Testlab

Final Q&A

THANK YOU FOR ATTENDING!