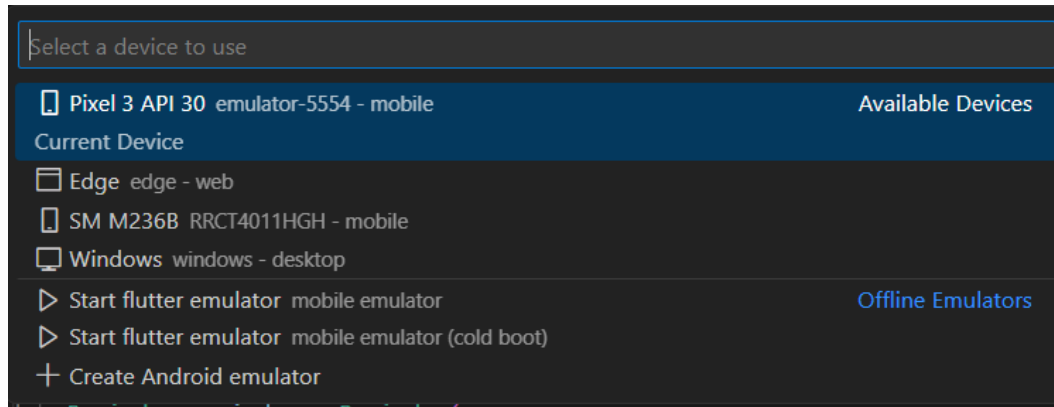


Nama : Annisa Divayu Andriyani  
NIM : 20200140136  
MK : Software Testing & Quality-Assurance

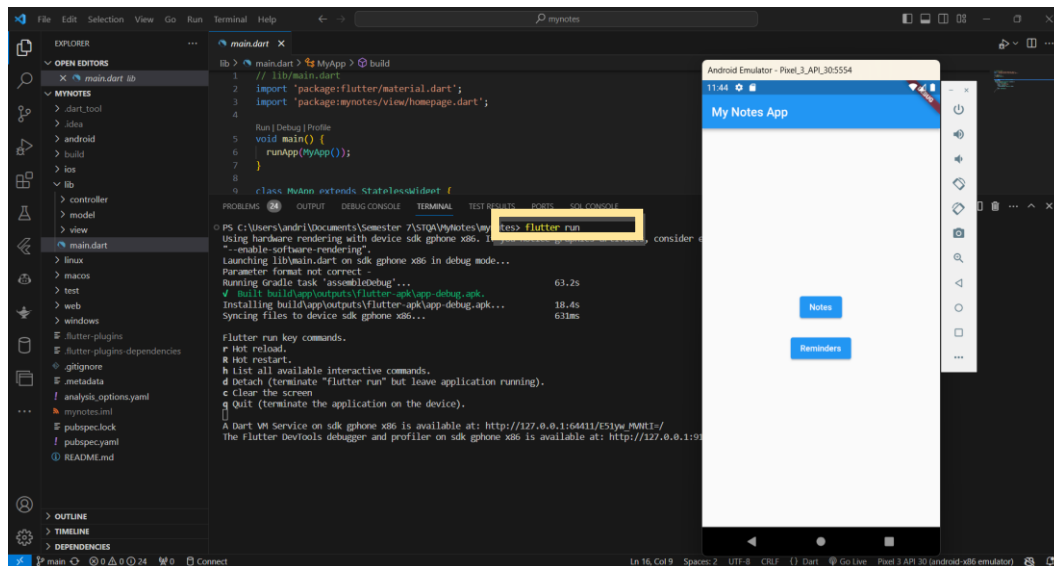
## UNIT TESTING APLIKASI MY NOTES

Link GitHub : <https://github.com/eunannana/mynotes.git>

- Untuk melakukan debugging dan testing, run terlebih dahulu aplikasi dengan memilih emulator

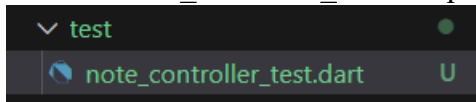


- Buka terminal lalu masukkan “flutter run” dan tunggu hingga aplikasi berjalan dengan baik



- Untuk melakukan debugging dan testing hentikan aplikasi terlebih dahulu dan mulai debugging dan testing

- Debugging dan flutter test note\_controller
  1. Buat file note\_controller\_test.dart pada folder test



2. Tulis code berikut

```

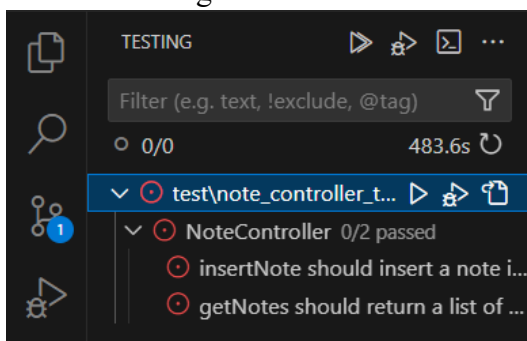
note_controller_test.dart U X
test > note_controller_test.dart > main
1 import 'package:flutter_test/flutter_test.dart';
2 import 'package:mynotes/controller/note_controller.dart';
3 import 'package:mynotes/model/note_model.dart';
4
5 void main() {
6   group('NoteController', () {
7     test('insertNote should insert a note into the database', () async {
8       // Arrange
9       final noteController = NoteController();
10      final note = Note(id: 1, title: 'Test Note', content: 'Test Content');
11      // Act
12      final result = await noteController.insertNote(note);
13      // Assert
14      expect(result, 1);
15    });
16    test('getNotes should return a list of notes from the database', () async {
17      // Arrange
18      final noteController = NoteController();
19
20      // Act
21      final notes = await noteController.getNotes();
22
23      // Assert
24      expect(notes, isList);
25    });
26  });
27 }
28

```

3. Untuk run code testing, pilih menu Testing pada side menu



4. Klik icon debug untuk memulai test code



5. Pada terminal baru, ketik “flutter test” untuk memastikan flutter test berjalan dengan baik

```

PS C:\Users\andri\Documents\Semester 7\STQAV\MyNotes\mynotes> flutter test
00:04 +0 -1: NoteController insertNote should insert a note into the database
Bad state: databasefactory not initialized
databasefactory is only initialized when using sqflite. When using `sqflite_common_ffi`
you must call `databasefactory = databasefactoryFfi;` before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
package:mynotes/controller/note_controller.dart 8:49 NoteController.insertNote
test/note_controller_test.dart 13:43 main.<fn>.<fn>

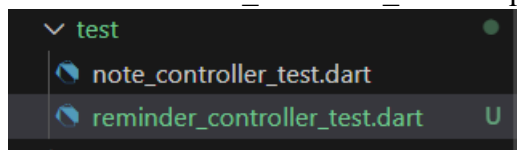
To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:\Users\andri\Documents\Semester 7\STQAV\MyNotes\mynotes/test/note_controller_test.dart
-p vm -plain-name "NoteController insertNote should insert a note into the database"
00:04 +0 -2: NoteController getNotes should return a list of notes from the database [E]
Bad state: databasefactory not initialized
databasefactory is only initialized when using sqflite. When using `sqflite_common_ffi`
you must call `databasefactory = databasefactoryFfi;` before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
package:mynotes/controller/note_controller.dart 13:49 NoteController.getNotes
test/note_controller_test.dart 24:42 main.<fn>.<fn>

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:\Users\andri\Documents\Semester 7\STQAV\MyNotes\mynotes/test/note_controller_test.dart
-p vm -plain-name "NoteController getNotes should return a list of notes from the database"
00:04 +0 -2: Some tests failed.
PS C:\Users\andri\Documents\Semester 7\STQAV\MyNotes\mynotes>

```

- Debugging dan flutter reminder\_controller test
  1. Buat file reminder\_controller\_test.dart pada folder test



2. Tulis code berikut

```

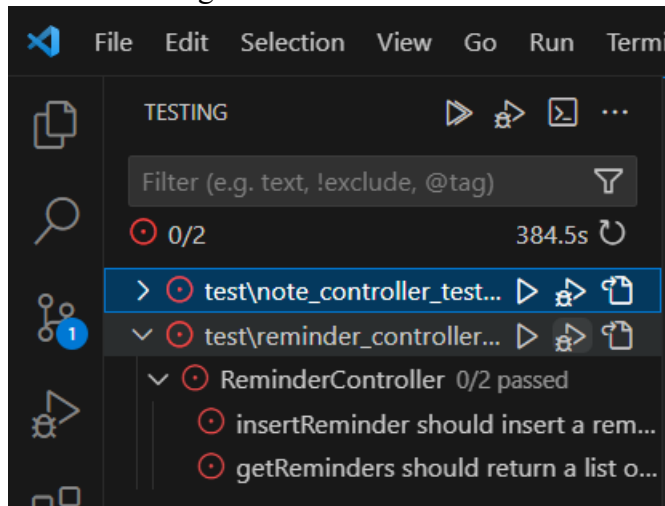
reminder_controller_test.dart U
test > reminder_controller_test.dart > main > group("ReminderController")
1 import 'package:flutter_test/flutter_test.dart';
2 import 'package:mynotes/controller/reminder_controller.dart';
3 import 'package:mynotes/model/reminder_model.dart';
4
5 void main() {
6   group('ReminderController', () {
7     test('insertReminder should insert a reminder into the database', () async {
8       // Arrange
9       final reminderController = ReminderController();
10      final reminder = Reminder(id: 1, title: 'Test Reminder', dateTime: '2023-11-16 10:00:00');
11
12      // Act
13      final result = await reminderController.insertReminder(reminder);
14
15      // Assert
16      expect(result, 1); // Assuming 1 is the expected ID for the inserted reminder
17    });
18
19    test('getReminders should return a list of reminders from the database', () async {
20      // Arrange
21      final reminderController = ReminderController();
22
23      // Act
24      final reminders = await reminderController.getReminders();
25
26      // Assert
27      expect(reminders, isList); // Ensure it returns a list
28    });
29  });
30

```

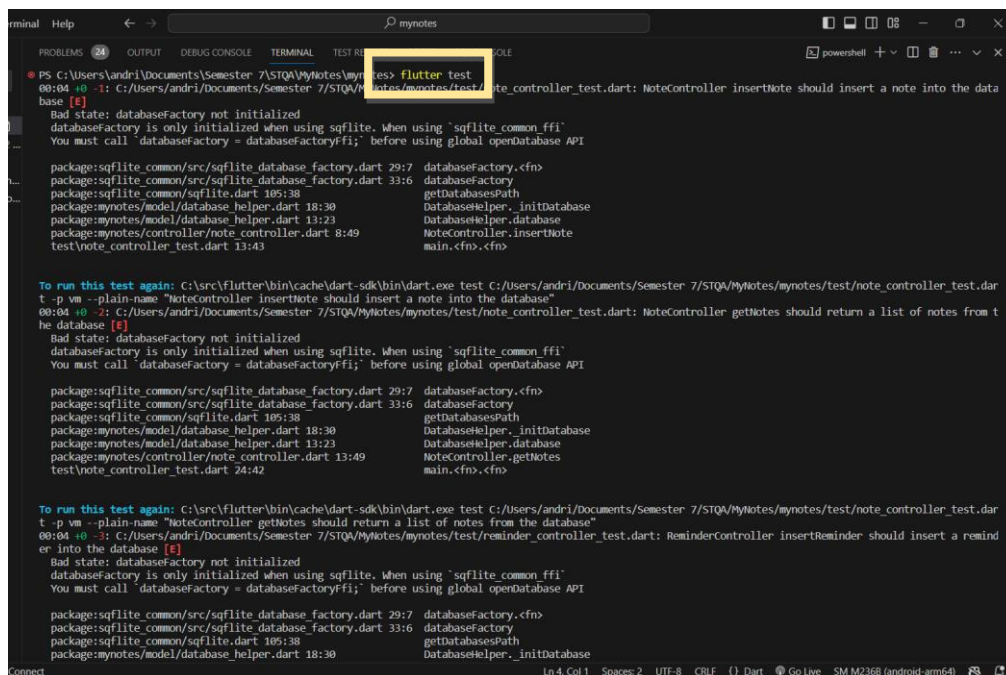
3. Untuk run code testing, pilih menu Testing pada side menu



4. Klik icon debug untuk memulai test code



5. Pada terminal baru, ketik “flutter test” untuk memastikan flutter test berjalan dengan baik



```

PROBLEMS 24 OUTPUT DEBUG CONSOLE TERMINAL TEST RESULTS PORTS SQL CONSOLE
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
package:mynotes/controller/note_controller.dart 13:49 NoteController.getNotes
test/note_controller_test.dart 24:42 main.<fn>.<fn>

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:/Users/andri/Documents/Semester 7/STQA/MyNotes/mynotes/test/note_controller_test.dart -p vm --plain-name "NoteController getNotes should return a list of notes from the database"
00:04 +0 -1: C:/Users/andri/Documents/Semester 7/STQA/MyNotes/mynotes/test/reminder_controller_test.dart: ReminderController insertReminder should insert a reminder into the database [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using 'sqflite_common_ffi'
You must call 'databaseFactory = databaseFactoryFfi;' before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
package:mynotes/controller/reminder_controller.dart 8:49 ReminderController.insertReminder
test/reminder_controller_test.dart 13:47 main.<fn>.<fn>

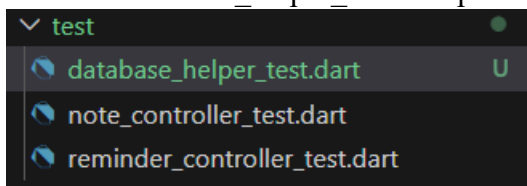
To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:/Users/andri/Documents/Semester 7/STQA/MyNotes/mynotes/test/reminder_controller_test.dart -p vm --plain-name "ReminderController insertReminder should insert a reminder into the database"
00:04 +0 -4: C:/Users/andri/Documents/Semester 7/STQA/MyNotes/mynotes/test/reminder_controller_test.dart: ReminderController getReminders should return a list of reminders from the database [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using 'sqflite_common_ffi'
You must call 'databaseFactory = databaseFactoryFfi;' before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
package:mynotes/controller/reminder_controller.dart 13:49 ReminderController.getReminders
test/reminder_controller_test.dart 23:50 main.<fn>.<fn>

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:/Users/andri/Documents/Semester 7/STQA/MyNotes/mynotes/test/reminder_controller_test.dart -p vm --plain-name "ReminderController getReminders should return a list of reminders from the database"
00:04 +0 -4: Some tests failed.
PS C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes>

```

- Debugging dan flutter database helper test
  1. Buat file database\_helper\_test.dart pada folder test



2. Tulis code berikut

```

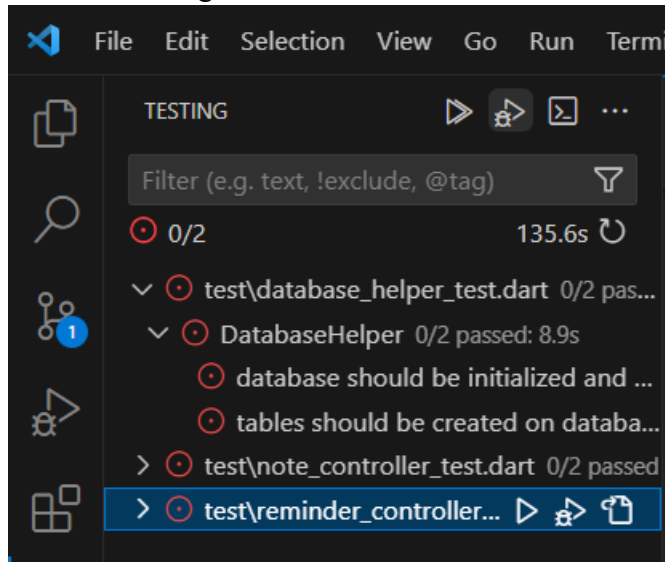
database_helper_test.dart 2, U X
test > database_helper_test.dart > main > group("DatabaseHelper")
1 import 'package:flutter_test/flutter_test.dart';
2 import 'package:mynotes/model/database_helper.dart';
3 import 'package:sqflite/sqflite.dart';
4 import 'package:path/path.dart';
5
6 void main() {
7   group('DatabaseHelper', () {
8     test('database should be initialized and not null', () async {
9       // Arrange
10      final dbHelper = DatabaseHelper.instance;
11      // Act
12      final database = await dbHelper.database;
13      // Assert
14      expect(database, isNotNull);
15    });
16
17    test('tables should be created on database creation', () async {
18      // Arrange
19      final dbHelper = DatabaseHelper.instance;
20      // Act
21      final database = await dbHelper.database;
22      // Get the list of tables
23      final tables = await database.query('sqlite_master', where: 'type = ?', whereArgs: ['table']);
24      // Assert
25      expect(tables, isList);
26      expect(tables.length, 2); // Assuming there are two tables: notes and reminders
27    });
28  });
29 }

```

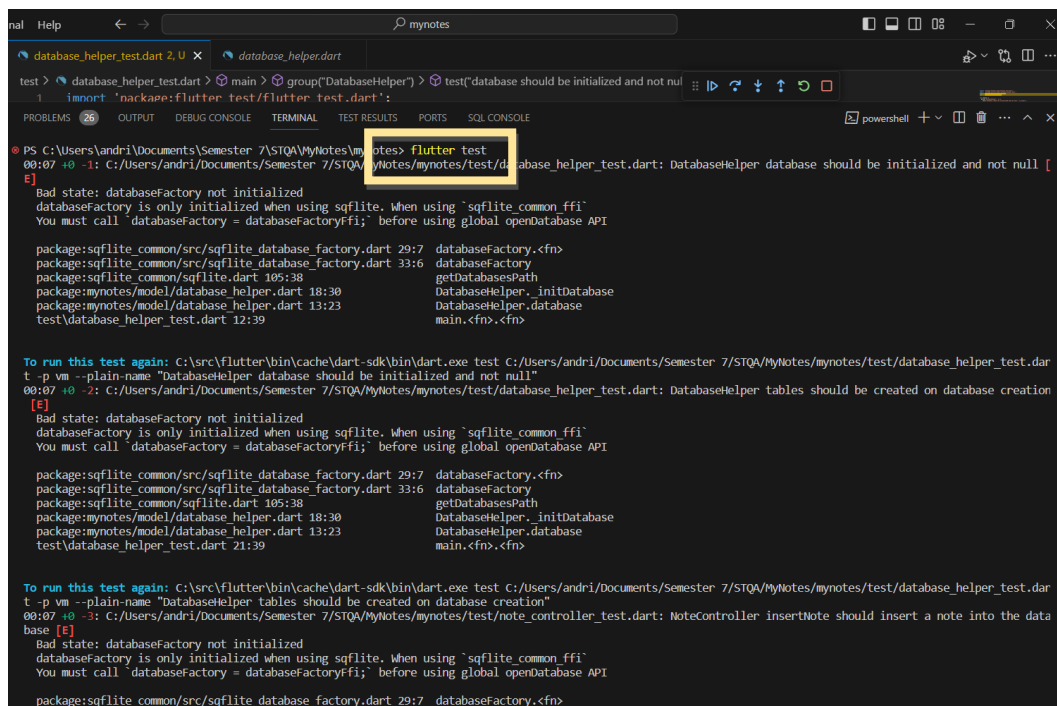
- Untuk run code testing, pilih menu Testing pada side menu



- Klik icon debug untuk memulai test code



- Pada terminal baru, ketik “flutter test” untuk memastikan flutter test berjalan dengan baik





```

To run this test again: C:\src\Flutter\bin\cache\dart-sdk\bin\dart.exe test C:/Users/andri/Documents/Semester 7/STQA/MyNotes/mynotes/test/note_controller_test.dar
t -p vm --plain-name "NoteController getNotes should return a list of notes from the database"
00:08 +0 -5: C:/Users/andri/Documents/Semester 7/STQA/MyNotes/mynotes/test/reminder_controller_test.dart: ReminderController insertReminder should insert a remind
er into the database [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using 'sqflite_common_ffi'
You must call 'databaseFactory = databaseFactoryFfi;' before using global openDatabase API

package:sqflite_common/src/sqflite database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
package:mynotes/controller/reminder_controller.dart 8:49 ReminderController.insertReminder
test/reminder_controller_test.dart 13:47 main.<fn>.<fn>

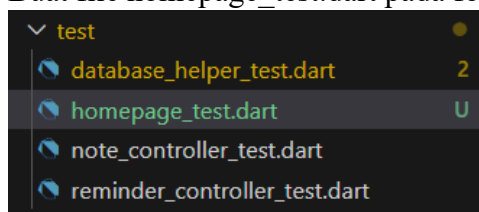
To run this test again: C:\src\Flutter\bin\cache\dart-sdk\bin\dart.exe test C:/Users/andri/Documents/Semester 7/STQA/MyNotes/mynotes/test/reminder_controller_test
.dart -p vm --plain-name "ReminderController insertReminder should insert a reminder into the database"
00:08 +0 -6: C:/Users/andri/Documents/Semester 7/STQA/MyNotes/mynotes/test/reminder_controller_test.dart: ReminderController getReminders should return a list of
reminders from the database [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using 'sqflite_common_ffi'
You must call 'databaseFactory = databaseFactoryFfi;' before using global openDatabase API

package:sqflite_common/src/sqflite database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
package:mynotes/controller/reminder_controller.dart 13:49 ReminderController.getReminders
test/reminder_controller_test.dart 23:50 main.<fn>.<fn>

To run this test again: C:\src\Flutter\bin\cache\dart-sdk\bin\dart.exe test C:/Users/andri/Documents/Semester 7/STQA/MyNotes/mynotes/test/reminder_controller_test
.dart -p vm --plain-name "ReminderController getReminders should return a list of reminders from the database"
00:09 +0 -6: Some tests failed.
PS C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes

```

- Debugging dan flutter homepage test
  1. Buat file homepage\_test.dart pada folder test



2. Tulis code berikut

```

homepage_test.dart U X
test > homepage_test.dart > ...
1 import 'package:flutter/material.dart';
2 import 'package:flutter_test/flutter_test.dart';
3 import 'package:mynotes/view/homepage.dart';
4 import 'package:mynotes/view/note_page.dart';
5 import 'package:mynotes/view/reminder_page.dart';
6
7 void main() {
8   testWidgets('HomePage should contain two ElevatedButtons', (WidgetTester tester) async {
9     // Build app and trigger a frame.
10    await tester.pumpWidget(MaterialApp(
11      home: HomePage(),
12    )); // MaterialApp
13
14    // Verify that the page contains two ElevatedButtons
15    expect(find.byType(ElevatedButton), findsNWidgets(2));
16  });
17
18   testWidgets('Tapping Notes button should navigate to NotePage', (WidgetTester tester) async {
19     // Build app and trigger a frame.
20    await tester.pumpWidget(MaterialApp(
21      home: HomePage(),
22    )); // MaterialApp
23
24    // Tap the 'Notes' button
25    await tester.tap(find.widgetWithText(ElevatedButton, 'Notes'));
26
27    // Wait for the Navigator to finish pushing a new route
28    await tester.pumpAndSettle();
29
30    // Verify that the NotePage is on the screen
31    expect(find.byType(NotePage), findsOneWidget);
32  });
33

```

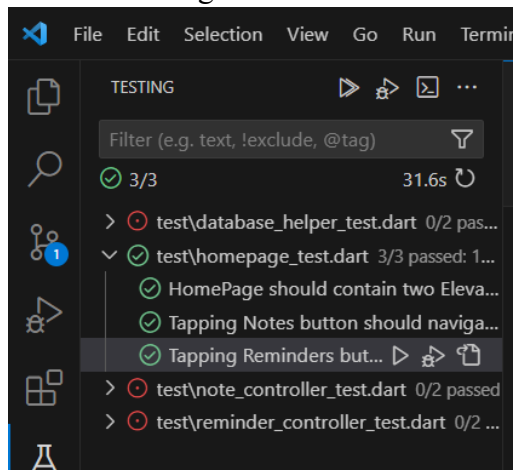
```
homepage_test.dart U x
st > homepage_test.dart > ...

Run | Debug
18 testWidgets('Tapping Notes button should navigate to NotePage', (WidgetTester tester) async {
19   // Build app and trigger a frame.
20   await tester.pumpWidget(MaterialApp(
21     home: HomePage(),
22   )); // MaterialApp
23
24   // Tap the 'Notes' button
25   await tester.tap(find.widgetWithText(ElevatedButton, 'Notes'));
26
27   // Wait for the Navigator to finish pushing a new route
28   await tester.pumpAndSettle();
29
30   // Verify that the NotePage is on the screen
31   expect(find.byType(NotePage), findsOneWidget);
32 });
33
Run | Debug
34 testWidgets('Tapping Reminders button should navigate to ReminderPage', (WidgetTester tester) async {
35   // Build app and trigger a frame.
36   await tester.pumpWidget(MaterialApp(
37     home: HomePage(),
38   )); // MaterialApp
39
40   // Tap the 'Reminders' button
41   await tester.tap(find.widgetWithText(ElevatedButton, 'Reminders'));
42
43   // Wait for the Navigator to finish pushing a new route
44   await tester.pumpAndSettle();
45
46   // Verify that the ReminderPage is on the screen
47   expect(find.byType(ReminderPage), findsOneWidget);
48 });
49 }
50
```

3. Untuk run code testing, pilih menu Testing pada side menu



4. Klik icon debug untuk memulai test code





5. Pada terminal baru, ketik “flutter test” untuk memastikan flutter test berjalan dengan baik

```
PS C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes> flutter test
00:08 +0 -1: C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\database_helper_test.dart: DatabaseHelper database should be initialized and not null [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using 'sqflite_common_ffi'
You must call 'databaseFactory = databaseFactoryFfi;' before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
test/database_helper_test.dart 12:39 main.<fn>.<fn>

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\database_helper_test.dart -p vm --plain-name "DatabaseHelper database should be initialized and not null"
00:09 +0 -2: C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\database_helper_test.dart: DatabaseHelper tables should be created on database creation [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using 'sqflite_common_ffi'
You must call 'databaseFactory = databaseFactoryFfi;' before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
test/database_helper_test.dart 21:39 main.<fn>.<fn>

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\database_helper_test.dart -p vm --plain-name "DatabaseHelper tables should be created on database creation"
00:10 +1 -3: C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\note_controller_test.dart: NoteController insertNote should insert a note into the database [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using 'sqflite_common_ffi'
You must call 'databaseFactory = databaseFactoryFfi;' before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
package:mynotes/controller/note_controller.dart 8:49 NoteController.insertNote

package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
package:mynotes/controller/note_controller.dart 13:49 NoteController.getNotes
test\note_controller_test.dart 24:42 main.<fn>.<fn>

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\note_controller_test.dart -p vm --plain-name "NoteController getNotes should return a list of notes from the database"
00:12 +1 -5: C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\reminder_controller_test.dart: ReminderController insertReminder should insert a reminder into the database [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using 'sqflite_common_ffi'
You must call 'databaseFactory = databaseFactoryFfi;' before using global openDatabase API

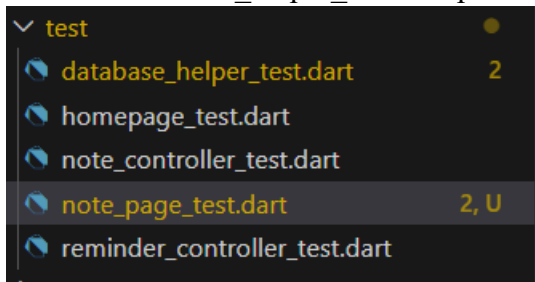
package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
package:mynotes/controller/reminder_controller.dart 8:49 ReminderController.insertReminder
test\reminder_controller_test.dart 13:47 main.<fn>.<fn>

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\reminder_controller_test.dart -p vm --plain-name "ReminderController insertReminder should insert a reminder into the database"
00:12 +1 -6: C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\reminder_controller_test.dart: ReminderController getReminders should return a list of reminders from the database [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using 'sqflite_common_ffi'
You must call 'databaseFactory = databaseFactoryFfi;' before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
package:mynotes/controller/reminder_controller.dart 13:49 ReminderController.getReminders
test\reminder_controller_test.dart 23:50 main.<fn>.<fn>

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\reminder_controller_test.dart -p vm --plain-name "ReminderController getReminders should return a list of reminders from the database"
00:12 +3 -6: Some tests failed.
PS C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes>
```

- Debugging dan flutter database helper test
6. Buat file database\_helper\_test.dart pada folder test



7. Tulis code berikut

```

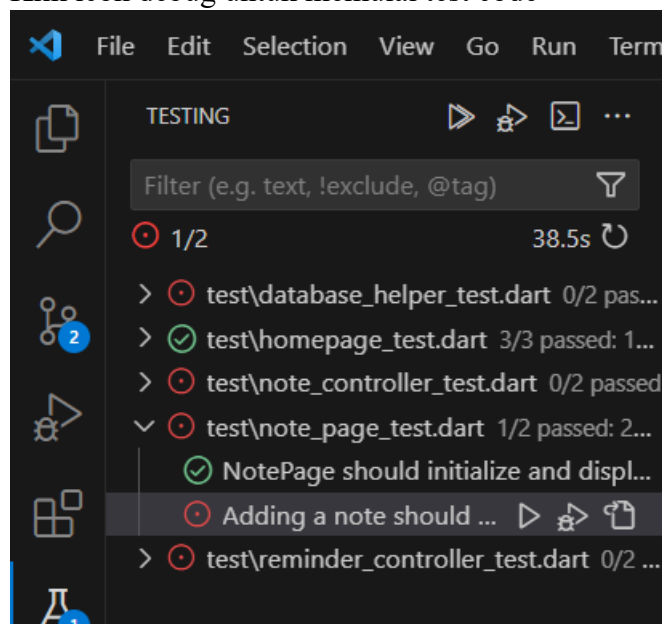
1 // test/note_page_test.dart
2 import 'package:flutter/material.dart';
3 import 'package:flutter_test/flutter_test.dart';
4 import 'package:mynotes/controller/note_controller.dart';
5 import 'package:mynotes/model/note_model.dart';
6 import 'package:mynotes/view/note_page.dart';
7
8 void main() {
9   // Build app and trigger a frame.
10   await tester.pumpWidget(MaterialApp(
11     home: NotePage(),
12   )); // MaterialApp
13   // Verify that the title and content TextFields are displayed.
14   expect(find.byType(TextField), findsNWidgets(2));
15   // Verify that the Add Note button is displayed.
16   expect(find.byType(ElevatedButton), findsOneWidget);
17 }
18
19 testWidgets('Adding a note should update the note list', (WidgetTester tester) async {
20   // Build app and trigger a frame.
21   await tester.pumpWidget(MaterialApp(
22     home: NotePage(),
23   )); // MaterialApp
24   // Enter title and content in TextFields
25   await tester.enterText(find.widgetWithText(TextField, 'Title'), 'Test Title');
26   await tester.enterText(find.widgetWithText(TextField, 'Content'), 'Test Content');
27   // Tap the Add Note button
28   await tester.tap(find.widgetWithText(ElevatedButton, 'Add Note'));
29   // Wait for the async operation to complete
30   await tester.pump();
31   // Verify that the note list is updated
32   expect(find.text('Test Title'), findsOneWidget);
33   expect(find.text('Test Content'), findsOneWidget);
34 }

```

8. Untuk run code testing, pilih menu Testing pada side menu



9. Klik icon debug untuk memulai test code



10. Pada terminal baru, ketik “flutter test” untuk memastikan flutter test berjalan dengan baik

```
PS C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes> flutter test
00:09 +0 -1: C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\database_helper_test.dart: DatabaseHelper database should be initialized and not null [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using 'sqflite common ffi'
you must call 'databaseFactory = databaseFactory.ffi;' before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
test/database_helper_test.dart 12:39 main.<fn>.<fn>

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\database_helper_test.dart -p vm --plain-name "DatabaseHelper database should be initialized and not null"
00:09 +0 -2: C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\database_helper_test.dart: DatabaseHelper tables should be created on database creation [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using 'sqflite common ffi'
you must call 'databaseFactory = databaseFactory.ffi;' before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
test/database_helper_test.dart 21:39 main.<fn>.<fn>

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\database_helper_test.dart -p vm --plain-name "DatabaseHelper tables should be created on database creation"
00:11 +0 -3: C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\note_controller_test.dart: NoteController insertNote should insert a note into the database [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using 'sqflite common ffi'
you must call 'databaseFactory = databaseFactory.ffi;' before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>

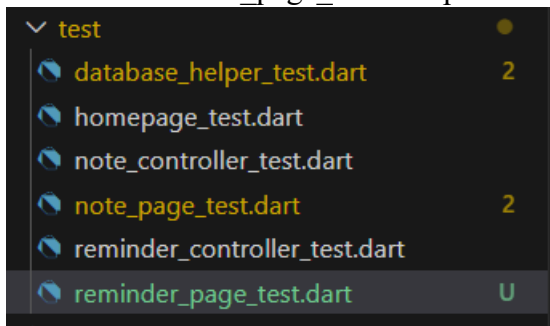
#10 BaseTapGestureRecognizer._checkUp (package:flutter/src/gestures/tap.dart:311:5)
#11 BaseTapGestureRecognizer.handlePrimaryPointer (package:flutter/src/gestures/tap.dart:244:7)
#12 PrimaryPointerGestureRecognizer.handleEvent (package:flutter/src/gestures/recognizer.dart:630:9)
#13 PointerRouter.dispatch (package:flutter/src/gestures/pointer_router.dart:98:12)
#14 PointerRouter._dispatchEventToRoutes.<anonymous closure> (package:flutter/src/gestures/pointer_router.dart:143:9)
#15 _LinkedHashMapMixin.forEach (dart:collection-patch/compact_hash.dart:625:13)
#16 PointerRouter._dispatchEventToRoutes (package:flutter/src/gestures/pointer_router.dart:141:18)
#17 PointerRouter.route (package:flutter/src/gestures/pointer_router.dart:127:7)
#18 GestureBinding.handleEvent (package:flutter/src/gestures/binding.dart:488:19)
#19 GestureBinding.dispatchEvent (package:flutter/src/gestures/binding.dart:468:22)
#20 RenderObjectBinding.dispatchEvent (package:flutter/src/rendering/binding.dart:333:11)
#21 GestureBinding.handlePointerEventImmediately (package:flutter/src/gestures/binding.dart:413:17)
#22 GestureBinding.handlePointerEvent (package:flutter/src/gestures/binding.dart:376:5)
#23 TestWidgetsFlutterBinding._handlePointerEventForSource.<anonymous closure> (package:flutter_test/src/binding.dart:626:42)
#24 TestWidgetsFlutterBinding._withPointerEventSource (package:flutter_test/src/binding.dart:636:11)
#25 TestWidgetsFlutterBinding._handlePointerEventForSource (package:flutter_test/src/binding.dart:626:5)
#26 WidgetTester.sendEventToBinding.<anonymous closure> (package:flutter_test/src/widget_tester.dart:848:15)
#27 TestAsyncUtils.guard (package:flutter_test/src/test_async_utils.dart:68:41)
#28 WidgetTester.sendEventToBinding (package:flutter_test/src/widget_tester.dart:847:27)
#29 TestGesture.up.<anonymous closure> (package:flutter_test/src/test_pointer.dart:550:26)
#30 TestAsyncUtils.guard (package:flutter_test/src/test_async_utils.dart:68:41)
#31 TestGesture.up (package:flutter_test/src/test_pointer.dart:543:27)
#32 WidgetController.tapAt.<anonymous closure> (package:flutter_test/src/controller.dart:561:21)
<asynchronous suspension>
<asynchronous suspension>
(elided 5 frames from dart:async and package:stack_trace)

The test description was:
Adding a note should update the note list

00:16 +4 -7: C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\note_page_test.dart: Adding a note should update the note list [E]
Test failed. See exception logs above.
The test description was: Adding a note should update the note list

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\note_page_test.dart -p vm --plain-name "Adding a note should update the note list"
00:16 +4 -7: Some tests failed.
PS C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes>
```

- Debugging dan flutter reminder page test
  1. Buat file reminder\_page\_test.dart pada folder test



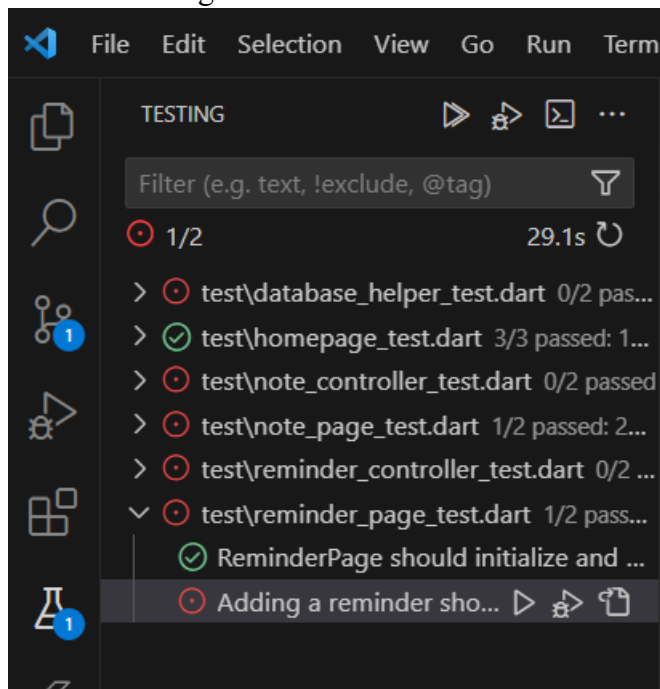
2. Tulis code berikut

```
reminder_page_test.dart 2, U x
st > reminder_page_test.dart > ...
1 import 'package:flutter/material.dart';
2 import 'package:flutter_test/flutter_test.dart';
3 import 'package:mynotes/controller/reminder_controller.dart';
4 import 'package:mynotes/model/reminder_model.dart';
5 import 'package:mynotes/view/reminder_page.dart';
6 void main() {
7   testWidgets('ReminderPage should initialize and display widgets', (WidgetTester tester) async {
8     // Build app and trigger a frame.
9     await tester.pumpWidget(MaterialApp(
10       home: ReminderPage(),
11     )); // MaterialApp
12     // Verify that the title and dateTime TextFields are displayed.
13     expect(find.byType(TextField), findsNWidgets(2));
14     // Verify that the Add Reminder button is displayed.
15     expect(find.byType(ElevatedButton), findsOneWidget);
16   });
17   testWidgets('Adding a reminder should update the reminder list', (WidgetTester tester) async {
18     // Build app and trigger a frame.
19     await tester.pumpWidget(MaterialApp(
20       home: ReminderPage(),
21     )); // MaterialApp
22     // Enter title and dateTime in TextFields
23     await tester.enterText(find.widgetWithText(TextField, 'Title'), 'Test Title');
24     await tester.enterText(find.widgetWithText(TextField, 'Date and Time'), '2023-11-16 10:00:00');
25     // Tap the Add Reminder button
26     await tester.tap(find.widgetWithText(ElevatedButton, 'Add Reminder'));
27     // Wait for the async operation to complete
28     await tester.pump();
29     // Verify that the reminder list is updated
30     expect(find.text('Test Title'), findsOneWidget);
31     expect(find.text('2023-11-16 10:00:00'), findsOneWidget);
32   });
33 }
34
```

3. Untuk run code testing, pilih menu Testing pada side menu



4. Klik icon debug untuk memulai test code





5. Pada terminal baru, ketik “flutter test” untuk memastikan flutter test berjalan dengan baik

```
PS C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes> flutter test
00:05 +0 -1: C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\database_helper_test.dart: DatabaseHelper database should be initialized and not null [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using `sqflite.common ffi`
You must call `databaseFactory = databaseFactoryffi;` before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
test/database_helper_test.dart 12:39 main.<fn>.<fn>

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\database_helper_test.dart -p vm --plain-name "DatabaseHelper database should be initialized and not null"
00:06 +0 -2: C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\database_helper_test.dart: DatabaseHelper tables should be created on database creation [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using `sqflite.common ffi`
You must call `databaseFactory = databaseFactoryffi;` before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
test/database_helper_test.dart 21:39 main.<fn>.<fn>

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\database_helper_test.dart -p vm --plain-name "DatabaseHelper tables should be created on database creation"
00:07 +1 -3: C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\note_controller_test.dart: NoteController insertNote should insert a note into the database [E]
Bad state: databaseFactory not initialized
databaseFactory is only initialized when using sqflite. When using `sqflite.common ffi`
You must call `databaseFactory = databaseFactoryffi;` before using global openDatabase API

package:sqflite_common/src/sqflite_database_factory.dart 29:7 databaseFactory.<fn>
package:sqflite_common/src/sqflite_database_factory.dart 33:6 databaseFactory
package:sqflite_common/sqflite.dart 105:38 getDatabasesPath
package:mynotes/model/database_helper.dart 18:30 DatabaseHelper._initDatabase
package:mynotes/model/database_helper.dart 13:23 DatabaseHelper.database
package:mynotes/controller/note_controller.dart 8:49 NoteController.insertNote

#4 DatabaseHelper.database (package:mynotes/model/database_helper.dart:13:23)
#5 ReminderController.insertReminder (package:mynotes/controller/reminder_controller.dart:8:49)
#6 ReminderPageState.build.<anonymous closure> (package:mynotes/view/reminder_page.dart:45:41)
#7 InkResponseState.handleTap (package:flutter/src/material/ink_well.dart:1154:21)
#8 GestureRecognizer.invokeCallback (package:flutter/src/gestures/recognizer.dart:275:24)
#9 TapGestureRecognizer.handleTapUp (package:flutter/src/gestures/tap.dart:654:11)
#10 BaseTapGestureRecognizer._checkUp (package:flutter/src/gestures/tap.dart:211:15)
#11 BaseTapGestureRecognizer.handlePrimaryPointer (package:flutter/src/gestures/tap.dart:244:7)
#12 PrimaryPointerGestureRecognizer.handleEvent (package:flutter/src/gestures/recognizer.dart:630:9)
#13 PointerRouter._dispatch (package:flutter/src/gestures/pointer_router.dart:98:12)
#14 PointerRouter._dispatchEventToRoutes.<anonymous closure> (package:flutter/src/gestures/pointer_router.dart:143:9)
#15 LinkedHashMapMixin.forEach (dart:collection-patch/compact_hash.dart:625:13)
#16 PointerRouter._dispatchEventToRoutes (package:flutter/src/gestures/pointer_router.dart:141:18)
#17 PointerRouter.route (package:flutter/src/gestures/pointer_router.dart:127:7)
#18 GestureBinding.handleEvent (package:flutter/src/gestures/binding.dart:488:19)
#19 GestureBinding.dispatchEvent (package:flutter/src/gestures/binding.dart:468:22)
#20 RendererBinding.dispatchEvent (package:flutter/src/rendering/binding.dart:333:11)
#21 GestureBinding.handlePointerEventImmediately (package:flutter/src/gestures/binding.dart:413:7)
#22 GestureBinding.handlePointerEvent (package:flutter/src/gestures/binding.dart:376:5)
#23 TestWidgetsFlutterBinding._handlePointerEventForSource.<anonymous closure> (package:flutter_test/src/binding.dart:626:42)
#24 TestWidgetsFlutterBinding._withPointerEventSource (package:flutter_test/src/binding.dart:636:11)
#25 TestWidgetsFlutterBinding._handlePointerEventForSource (package:flutter_test/src/binding.dart:626:5)
#26 WidgetTester.sendEventToBinding.<anonymous closure> (package:flutter_test/src/widget_tester.dart:848:15)
#29 TestAsyncUtils.guard (package:flutter_test/src/test_async_utils.dart:68:41)
#30 WidgetTester.sendEventToBinding (package:flutter_test/src/widget_tester.dart:847:27)
#31 TestGesture.up.<anonymous closure> (package:flutter_test/src/test_pointer.dart:550:26)
#34 TestAsyncUtils.guard (package:flutter_test/src/test_async_utils.dart:68:41)
#35 TestGesture.up (package:flutter_test/src/test_pointer.dart:543:27)
#36 WidgetController.tapAt.<anonymous closure> (package:flutter_test/src/controller.dart:561:21)
<asynchronous suspension>
<asynchronous suspension>
(elided 5 frames from dart:async and package:stack_trace)

The test description was:
  Adding a reminder should update the reminder list

00:14 +5 -8: C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\reminder_page_test.dart: Adding a reminder should update the reminder list [E]
Test failed. See exception logs above.
The test description was: Adding a reminder should update the reminder list

To run this test again: C:\src\flutter\bin\cache\dart-sdk\bin\dart.exe test C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes\test\reminder_page_test.dart -p vm --plain-name "Adding a reminder should update the reminder list"
00:14 +5 -8: Some tests failed.
PS C:\Users\andri\Documents\Semester 7\STQA\MyNotes\mynotes>
```