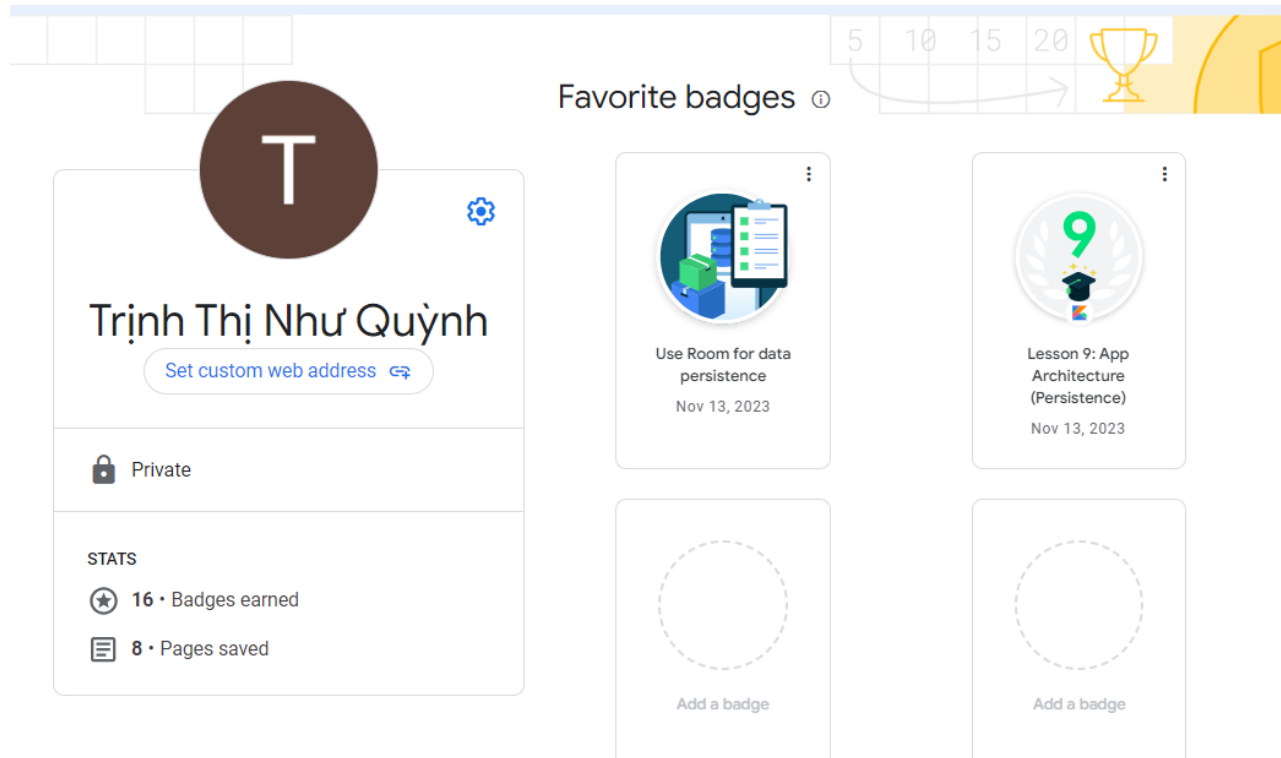


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## MOBILE APPLICATION DEVELOPMENT (Lab 6)



Link github:

-> Persist Data with Room:

<https://github.com/nhuquynh875/labMobile/tree/lab6-inventory1>

-> Read and update data with Room:

<https://github.com/nhuquynh875/labMobile/tree/lab6-inventory2>

-> Bus Schedule app:

[https://github.com/nhuquynh875/labMobile/tree/lab6-bus\\_schedule](https://github.com/nhuquynh875/labMobile/tree/lab6-bus_schedule)

## Lesson 9: App architecture (persistence)



Create a database using the Room library and use coroutines to simplify asynchronous programming.

2 activities • 1 quiz

Trinh Thi Nhu Quynh (ITITI20291@student.hcmiu.edu.vn) is signed in

Lesson 9: App Architecture (Persistence)

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## Lesson 9: App architecture (persistence)



Let's do a quick test! You must answer at least 5 questions correctly to pass this quiz.



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1. How do you indicate that a class represents an entity to store in a Room database?

- ☐ Make the class extend `DatabaseEntity`.
- ☒ Annotate the class with `@Entity`. ✓ Correct!
- ☐ Annotate the class with `@Database`.
- ☐ Make the class extend `RoomEntity` and also annotate the class with `@Room`.

2. The DAO (data access object) is an interface that Room uses to map Kotlin functions to database queries. How do you indicate that an interface represents a DAO for a Room database?

- ☐ Make the interface extend `RoomDAO`.
- ☐ Make the interface extend `EntityDao`, then implement the `DaoConnection()` method.
- ☒ Annotate the interface with `@Dao`. ✓ Correct!
- ☐ Annotate the interface with `@RoomConnection`.

3. Which of the following annotations can you use in your `@Dao` interface? Choose all that apply.

*Choose as many answers as you see fit.*

☐ `@Get`

☒ `@Update` ✓ Correct!

☒ `@Insert` ✓ Correct!

☒ `@Query` ✓ Correct!

4. Which of the following is not a benefit of using coroutines?

☐ They run asynchronously.

☐ They can be run on a thread other than the main thread.

☒ They always make the app run faster. ✓ Correct!

☐ They can use exceptions.

5. Which of the following is not true for `Suspend` functions?

☐ An function annotated with the `Suspend` keyword.

☐ A function that can be called inside coroutines.

☐ While a `Suspend` function is running, the calling thread is suspended.

☒ `Suspend` functions must always run in the background. ✓ Correct!

6. Which of the following statements is NOT true?

☐ When execution is blocked, no other work can be executed on the blocked thread.

☐ When execution is suspended, the thread can do other work while waiting for the offloaded work to complete.

☐ Suspending is more efficient, because threads may not be waiting, doing nothing.

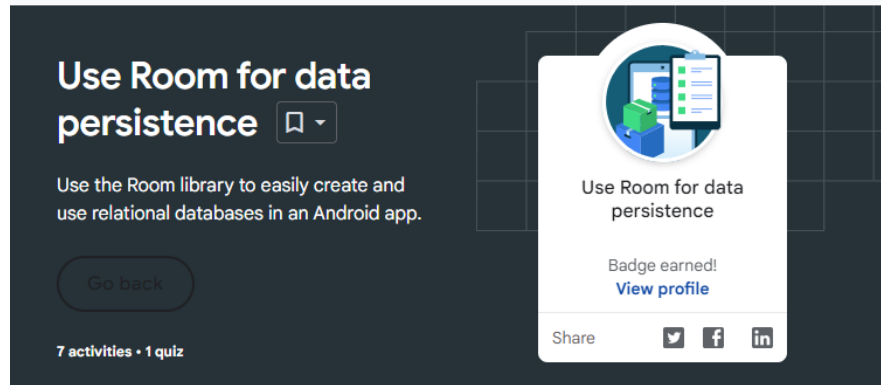
☒ Whether blocked or suspended, execution is still waiting for the result of the coroutine before continuing. ✓ Correct!

## Results

You scored **6 out of 6**. Congratulations! You have passed this quiz.

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## Use Room for data persistence

Let's do a quick test! You must answer at least 7 questions correctly to pass this quiz.

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1. Which of the following statements is not true about the `@Query` annotation?

- ☐ The `@Query` annotation is used with a method in the DAO.
- ☐ The `@Query` annotation corresponds to a `SELECT` query.
- ☐ The `@Query` annotation can pass arguments into a SQL statement by preceding their name with a colon.
- ☒ The `@Query` annotation can only be used with a suspend function. ✓ Correct!

2. Which of the following statements are true about the DAO?

- ☐ DAO functions use annotations like `@Insert` and `@Update` that correspond to an operation on the database.
- ☐ DAO functions can return a flow.
- ☐ Instances of DAO classes are referenced in the `AppDatabase` class.
- ☒ All of the above ✓ Correct!

3. The Database class, inheriting from the RoomDatabase class, is responsible for \_\_\_\_.

- ☒ Instantiating the database and providing access to the DAO. ✓ Correct!
- ☐ Representing individual data tables.
- ☐ Defining functions that map to SQL statements, such as `SELECT` queries.
- ☐ Provides data to the UI.

#### 4. The purpose of the DAO is to:

- ☐ Hold reference to the view models and the database.
- ☒ Define functions that map to SQL statements, such as `SELECT`, and `INSERT` queries.
- ☐ Provide a factory method to create a database instance.
- ☐ Create a new database instance.

✓ Correct!

#### 5. Why do you need to use the `synchronized()` function when you create the database?

*Choose as many answers as you see fit.*

- ☐ It lets you create multiple copies of the database.
- ☒ It lets you safely access the code from multiple threads at once.
- ☒ It is used to avoid race conditions.
- ☒ It ensures only one thread can enter the block of code at once.

✓ Correct!

✓ Correct!

✓ Correct!

#### 6. You can use the `@Insert` and `@Delete` annotations without providing a SQL statement.

- ☒ True
- ☐ False

✓ Correct!

#### 7. Fill-in-the-blanks

*Enter one or more words to complete the sentence.*

To handle conflicts when inserting into a database, you can pass a(n) `onConflict` parameter, such as `IGNORE`, to the `@Insert` annotation.

✓ Correct!

#### 8. Select all the statements that are true about the Database Inspector:

*Choose as many answers as you see fit.*

- ☒ It lets you inspect, query, and modify your app's databases while your app is running.
- ☐ It works with other SQLite libraries that you bundle with your app.
- ☒ It is especially useful for database debugging.
- ☒ It works with plain SQLite and with libraries built on top of SQLite, such as Room.

✓ Correct!

✓ Correct!

✓ Correct!

9. Entities represent individual data tables in the Room database.

☒ True ✓ Correct!

☐ False

10. Which of the following statement is not true about the primary key:

☐ You can use the primary key to uniquely identify every record/entry in your database tables.

☐ After you assign the primary key, you cannot modify it.

☒ Room generates an incrementing primary key value for each entity by default. ✓ Correct!

☐ The primary key represents the entity object as long as it exists in the database.

## Results

You scored **10 out of 10**. Congratulations! You have passed this quiz.

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