Code Lab Quizzes

<u>Build a scrollable list</u>

1. Adaptive launcher icons for Android apps consist of a foreground and background vector drawable

    a. <mark>True</mark>

    b. False

2. When building a UI that requires a scrolling list with a variable number of items, which Composable should you use?

    a. Column

    b. Row

    c. <mark>LazyColumn</mark>

    d. Card

3. What file type is used for the launcher icon foreground and background vectors?

    a. .txt

    b. .jpg

    c. .png

    d. <mark>.xml</mark>

4. Which Composable should you use to create a vertically scrollable grid with an undetermined number of items?

    a. LazyColumn

    b. <mark>LazyVerticalGrid</mark>

    c. LazyHorizontalGrid

    d. Row

5. The Column composable is not a good option for a list of items of unknown quantity because

    a. <mark>It can only hold a small, finite number of predefined items</mark>

    b. It arranges items vertically

    c. It provides scrolling by default without any additional code

    d. It can add content on demand

6. The ___ method is used to add content too a LazyColumn Composable.

    a. painterResource()

    b. Modifier.padding()

    c. <mark>items()</mark>

d. onCreate()

7. Which Composable arranges items horizontally

    a. Column

    b. Card

    c. Image

    d. <mark>Row</mark>

8. Which Composable arranges items vertically?

    a. <mark>Column</mark>

    b. Card

    c. Image

    d. Row

Get data from the internet

1. With concurrent programming, code might execute in an order different from how it was written.

    a. <mark>True</mark>

    b. False

2. The <mark>Main</mark> thread is responsible for displaying the user interface responding to user input.

3. Which of the following statements are true about coroutine contexts?

    a. Dispatchers.Default is the best choice for long running tasks involving reading and writing large amounts of data.

    b. <mark>Dispatchers.Main can be used for updating the UI but not for long-running tasks.</mark>

    c. <mark>A Job controls the lifecycle of a coroutine.</mark>

    d. <mark>Dispatchers.IO is optimized for network I/O, among other background tasks.</mark>

4. launch() and async() are extension functions of a ____, which keeps track of any coroutines it creates.

    a. <mark>coroutineScope</mark>

    b. Job

    c. Dispatcher

    d. CoroutineContext

5. Which of the following statements are true about structured concurrency and its best practices?

    a. <mark>If a coroutine is cancelled, child coroutines should also be cancelled.</mark>

    b. A parent scope can complete before one or more of its children are completed.

    c. A failure should propagate downward without cancelling the parent coroutine.
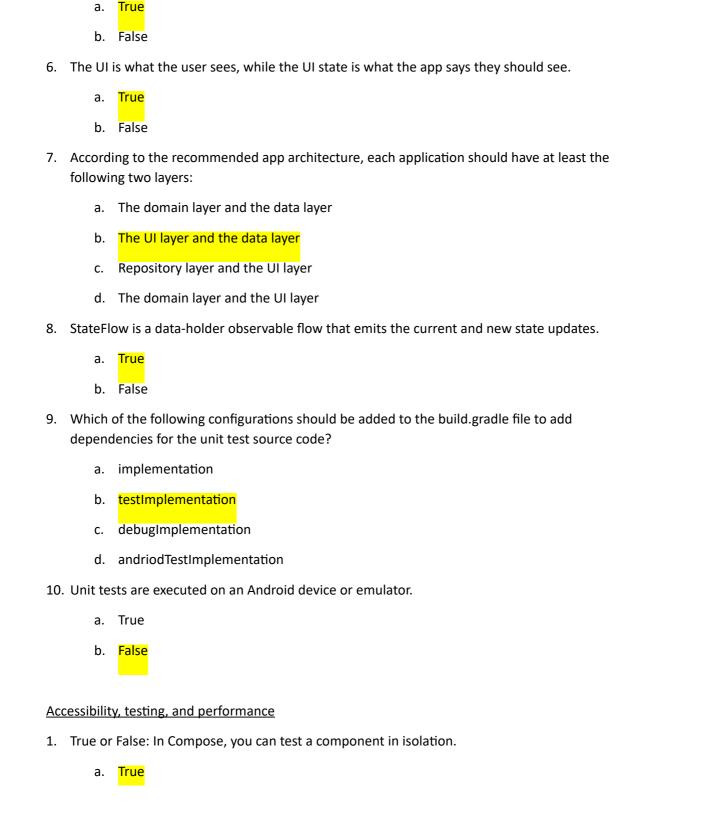
       d.   Coroutines must be launched from a coroutine scope.

6.   Which of the following statements are true about web services?

       a.   GET, POST, and DELETE are all examples of HTTP operations.

       b.   A URL is a type of UIR but not all URIs are URLs.

       c.   RESTful services always provide a formatted XML response.

       d.   Retrofit is a third-party library for handling JSON from a web service.

7.   Retrofit is a third-party library that enables your app to make requests to a(n) ___ web service.

       a.   XML

       b.   Socket

       c.   RESTful

       d.   JSON

8.   One recommended way to perform a Retrofit network request is with a coroutine launched in the viewModelScope.

       a.   True

       b.   False

9.   To enable your app to make connections to the Internet, add the 'android.permission.INTERNET' permission in the ___ file.

       a.   MainActivity

       b.   build.gradle

       c.   Andriod manifest

       d.   ViewModel

10. The process of turning a JSON result into usable data, as is done with Gson, is called JSON ___.

       a.   Serialization

       b.   Encoding

       c.   Converting

       d.   Parsing

Use Room for data persistence

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

       a.   The @Query annotation is used with a method in the DAO.

       b.   The @Query annotation corresponds to a SELECT query.

    c.   The @Query annotation can pass arguments into a SQL statement by preceding their name with a colon.

    d.   ==The @Query annotation can only be used with a suspend function.==

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

    a.   DAO functions use annotations like @Insert and @Update that correspond to an operation on the database.

    b.   DAO functions can return a flow.

    c.   Instances of DAO classes are referenced in the APpDatabase class

    d.   ==All of the above==

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

    a.   ==Instantiating the database and providing access for the DAO.==

    b.   Representing individual data tables.

    c.   Defining functions that map to SQL statements, such as SELECT queries.

    d.   Provides data to the UI.

4. The purpose of the DAO is to:

    a.   Hold reference to the view models and the database.

    b.   ==Define functions that map to SQL statements, such as SELECT and INSERT queries.==

    c.   Provide a factory method to create a database instance.

    d.   Create a new database instance.

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

    a.   It lets you create multiple copies of the database.

    b.   ==It lets you safely access the code from multiple threads at once.==

    c.   ==It is used to avoid race conditions.==

    d.   ==It ensures only one thread can enter the block of code at once.==

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

    a.   ==True==

    b.   False

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

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

    a.   ==It lets you inspect, query and modify your app's databases while your app is running.'==

    b.   It works with other SQLite libraries that you bundle with your app.

    c.   It is especially useful for database debugging.

    d.   It works with plain SQLite and with libraries built on top of SQLite, such as Room.

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

    a.   True

    b.   False

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

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

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

    c.   Room generates an incrementing primary key value for each entity by default.

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

Architecture Components

1. Which method is first called when the app no longer has focus?

    a.   onPause()

    b.   onStart()

    c.   onCreate()

    d.   onStop()

2. After ___, the app is no longer visible on screen.

    a.   onPause()

    b.   onStart()

    c.   onCreate()

    d.   onStop()

3. Use ___ to write a debug message. This method takes two arguments: the log tag and the log message.

    a.   Log.i()

    b.   Log.d()

    c.   Log.e()

    d.   Log.w()

4. To save a value that needs to survive a configuration change, declare its variables with ___.

    a.   MutableState{}

      b. ==rememberSavable{}==

      c. remember{}

      d. State Hoisting

5. The separation of concerns design principle states that the app should be divided into classes, each with separate responsibilities.

      a. ==True==

      b. False

6. The UI is what the user sees, while the UI state is what the app says they should see.

      a. ==True==

      b. False

7. According to the recommended app architecture, each application should have at least the following two layers:

      a. The domain layer and the data layer

      b. ==The UI layer and the data layer==

      c. Repository layer and the UI layer

      d. The domain layer and the UI layer

8. StateFlow is a data-holder observable flow that emits the current and new state updates.

      a. ==True==

      b. False

9. Which of the following configurations should be added to the build.gradle file to add dependencies for the unit test source code?

      a. implementation

      b. ==testImplementation==

      c. debugImplementation

      d. andriodTestImplementation

10. Unit tests are executed on an Android device or emulator.

      a. True

      b. ==False==

Accessibility, testing, and performance

1. True or False: In Compose, you can test a component in isolation.

      a. ==True==

b. False

2. Compose test use a structure called the __ to look for elements on the screen and read their properties.

   a. UI tree

   b. <mark>Semantics tree</mark>

   c. TalkBack tree

   d. Descendants tree

3. On phones, an on-screen element that a user interacts with should have a width and height of at least:

   a. 24 dp

   b. 36 dp

   c. <mark>48 dp</mark>

   d. 60 dp

4. Use __ to group together actions that relate to the same list item.

   a. Click labels

   b. Merging

   c. <mark>Custom actions</mark>

   d. Switch Access

5. True or False: When evaluating your Compose app performance, it is very important to make sure you are running in release mode with R8 optimization enabled.

   a. <mark>True</mark>

   b. False

6. An application is __ when deployed as debug.

   a. Performant

   b. Optimized

   c. <mark>Slower</mark>

   d. Faster

Schedule task with WorkManager

1. Which tool helps you visualize, monitor and debug your app's workers?

   a. Profiler

   b. <mark>Background Task Inspector</mark>

      c.   Logcat

      d.   Device Manager

2. Which of the following options are valid terminal work states?

      a.   ==CANCELLED==

      b.   DELETED

      c.   ==FAILED==

      d.   ==SUCCESSDED==

3. Which of the following options are valid types of work requests?

      a.   ==OneTimeWorkRequest==

      b.   SingleWorkRequest

      c.   RepeatingWorkRequest

      d.   ==PeriodicWorkRequest==

4. Creating and enqueueing multiple dependent tasks and the order they should run in is called linking.

      a.   True

      b.   ==False==

5. Work constraints are useful in which of the following situations?

      a.   Checking that a valid form of payment is saved on the user's device before the work runs.

      b.   Checking what time it is before the work runs.

      c.   ==Checking that the device is connected to a wifi network before downloading a large amount of app data.==

      d.   Checking that the app was opened a set number of times before the work runs.

6. Which of the following options is a way to pass input data to a worker?

      a.   Pass the data in as an argument when calling the doWork() function.

      b.   ==Use a Data object to pass key/value pairs.==

      c.   Pass data as a String, but it must be less than 140 characters

      d.   Assign it to the worker.inputData variable

7. After work is enqueued, you can check its status by ___.

      a.   ==Name==

      b.   ==Id==

      c.   ==Tag==

d.   Work type

8. The Background Task Inspector lets you stop workers during their execution

    a.   True

    b.   <mark>False</mark>

9. Which worker builder is recommended to test CoroutineWorkers?

    a.   OneTimeWorkRequestBuilder

    b.   PeriodicWorkRequestBuilder

    c.   TestWorkerBuilder

    d.   <mark>TestListenableWorkerBuilder</mark>

10. When testing worker implementations, you can call workers directly with doWork() instead of enqueuing the worker.

    a.   <mark>True</mark>

    b.   False

Lifecycle

1. Based on scenario below, what are the call back methods the Activity will go through?

    - User starts the Activity.

    - User waits for Activity to be loaded.

    - User changes the orientation from portrait to horizontal.

    a.   onCreate -> onStart -> onResume->onPause->onStop->onRestart->onCreate -> onStart -> onResume

    b.   onCreate -> onStart -> onResume

    c.   <mark>onCreate -> onStart -> onResume->onPause->onStop->onDestroy->onCreate -> onStart -> onResume</mark>

    d.   onCreate -> onStart -> onResume->onPause->onStop->onCreate -> onStart -> onResume

2. At which condition will an Activity remain in onPause?

    a.   <mark>When an Activity is partially covered</mark>

    b.   When an Activity is full covered

3. When an Activity is on idling and waiting for user input, which call back method is the Activity stopped at?

    a.   onPause

    b.   <mark>onResume</mark>

    c. onStart

    d. onCreate

4. At which call back method is the Activity visible to the user?

    a. onStop

    b. <mark>onStart</mark>

    c. onRestart

    d. onPause

    e. onDestroy

    f. <mark>onResume</mark>

    g. onCreate