Qno1. Elaborate function of intent in Android? How are intent used in Android Studio?

Intent: Android Intent is the message that is passed between components such as activities, content providers, broadcast receivers, services etc.

It is generally used with startActivity() method to invoke activity, broadcast receivers etc.

Android intents are mainly used to:

- Start the service
- Launch an activity
- Display a web page
- Display a list of contacts
- Broadcast a message
- Dial a phone call etc

Code:

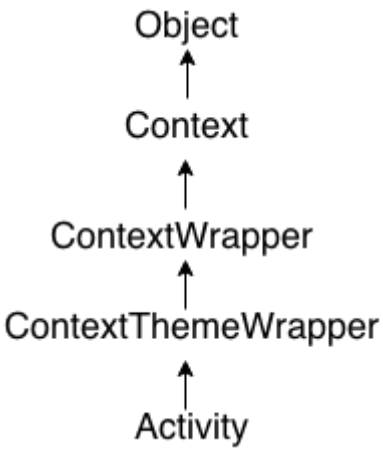
```
Intent i = new Intent(getApplicationContext(), ActivityTwo.class);
startActivity(i);
```

Qno2. Elaborate in detail the Android Activity Life Cycle with its key activity functions.

Android Activity Lifecycle is controlled by 7 methods of android.app.Activity class. The android Activity is the subclass of ContextThemeWrapper class.

An activity is the single screen in android. It is like window or frame of Java.

By the help of activity, you can place all your UI components or widgets in a single screen.



Android Activity Lifecycle methods:

Method	Description
onCreate	called when activity is first created.
onStart	called when activity is becoming visible to the user.
onResume	called when activity will start interacting with the user.

onPause	called when activity is not visible to the user.
onStop	called when activity is no longer visible to the user.
onRestart	called after your activity is stopped, prior to start.
onDestroy	called before the activity is destroyed.

Qno3. Define the purpose and use of XML and Java file in Android Studio.

XML (Extensible Markup Language) is a markup language that is used to define the structure and content of data in a human-readable and machine-readable format. It is commonly used in Android Studio to define the layout and user interface of an Android app. For example, an Android app's layout might be defined in an XML file, which specifies the layout of different views (such as buttons, text fields, and images) and their attributes (such as size, position, and color).

Java is a programming language that is used to build Android apps in Android Studio. It is used to write the code that powers the app, including the app's logic, interactions, and data manipulation. Java code is typically written in files with a ".java" extension and is compiled by the Android Studio build process into an Android app package, which can be installed on an Android device or emulator.

In Android Studio, XML files and Java files are used together to build an Android app. The XML files define the layout and user interface of the app, while the Java files contain the code that implements the app's functionality. When an Android app is built and run in Android Studio, the XML files are used to generate the app's user interface, and the Java code is executed to implement the app's functionality.

Qno4. What is the purpose of ACTIVITY in Android and how it is used?

An **Activity** in Android represents a single screen with a user interface. It is responsible for handling the user interface of an app, managing user interactions, and managing the lifecycle of the app as the user navigates between different screens. An app can have multiple **Activity** instances, each of which represents a different screen. When the user navigates to a new screen, the system creates a new **Activity** instance, and when the user navigates away from that screen, the system destroys the **Activity** instance to free up memory. The **Activity** class includes methods that are called by the Android system at different points in the lifecycle of the **Activity**, and the developer can override these methods to perform tasks such as initializing the user interface, handling user input, and saving the state of the app when it is stopped.

Qno5. How we use TOAST in Android, describe with suitable example code.

Andorid Toast can be used to display information for the short period of time. A toast contains message to be displayed quickly and disappears after sometime.

Android Toast Example

```
Toast.makeText(getApplicationContext(),"Hello Javatpoint",Toast.LENGTH_SHORT).show();
```

Qno6. How FRAGMENTS are different from an ACTIVITY. Explain the purpose of FRAGMENTS.

The main difference between an activity and a fragment is that an activity represents a single screen in an app, while a fragment represents a part of a user interface that can be reused across multiple activities.

The purpose of fragments is to make it easier to reuse parts of your user interface across multiple activities. For example, you can use the same fragment to display a list of items in multiple activities, or you can use multiple fragments in a single activity to create a more complex layout.

Qno7. How can we load HTML file in an Android ACTIVITY? Explain with example code.

To load an HTML file in an Android activity, you can use the **WebView** class. Here's an example of how to do it:

1. First, add a **WebView** element to your layout XML file
2. In your activity's onCreate method, get a reference to the WebView and call the loadUrl method to load the HTML file:

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    WebView webView = findViewById(R.id.web_view);
    webView.loadUrl("file:///android_asset/index.html");
}
```

Qno8. Explain the difference between SQLite, Firebase and MySQL. Which database is suitable in which situation?

SQLite, Firebase, and MySQL are all databases, but they differ in terms of their capabilities, performance, and intended usage.

- **SQLite** is a self-contained, serverless, zero-configuration, transactional SQL database engine. It is a popular choice for applications that need a small, embedded database, as it requires minimal setup and has a small footprint. SQLite is suitable for applications that do not require a lot of concurrent writes or a large amount of data, as it does not have good scalability.
- **Firebase** is a cloud-based, real-time database service provided by Google. It is designed for building web and mobile applications that require real-time data synchronization, such as chat, messaging, and collaborative applications. Firebase is suitable for applications that need to store and

synchronize data in real-time, as it provides powerful querying and real-time data synchronization features.

- **MySQL** is a popular, open-source relational database management system (RDBMS). It is suitable for applications that require a full-featured RDBMS with support for transactions, triggers, stored procedures, and views. MySQL is widely used in web applications, and is suitable for applications that require a large amount of data or a high level of concurrency.

Qno9. Write code of onClickListener() and show message when executed.

```
Button button = (Button) findViewById(R.id.button);
button.setOnClickListener(new View.OnClickListener() {
   @Override
   public void onClick(View view) {
      Toast.makeText(MainActivity.this, "Button clicked!",
Toast.LENGTH_SHORT).show();
   }
});
```

Qno10. How to switch between two activities in Android with suitable example.

To switch between two activities in Android, you can use an Intent object to start the new activity.

```
Intent intent = new Intent(this, SecondActivity.class);
startActivity(intent);
```

Qno11. Write code to implement the function of SHARE button in Android. (Not covered in our class)

Qno12. Write code to change Fragment 1 to Fragment 2 in Android.

```
Fragment fragment2 = new Fragment2();
FragmentManager fragmentManager = getFragmentManager();
FragmentTransaction fragmentTransaction =
fragmentManager.beginTransaction();
fragmentTransaction.replace(R.id.fragment_container, fragment2);
fragmentTransaction.commit();
```