

Advance Android

Paper - APRIL - 2023

G-1 (CA)

1. Is the first mobile phone released then run the Android OS?

- HTC Dream, also known as the T-Mobile G1

2. Android provides class to record audio or video.

- MediaRecorder

3. What is Intent?

- An Intent in Android is messaging object used to request an action from another APP component or to communicate between different components within an application.

4. What is Activity?

- An Activity in Android is a single, focused user interface screen that represents a window in the application's user interface.

Q-1 (B)

SSDR - SURESH - 1997

1) What is Android manifest file?

- The android manifest file is a crucial configuration file in an android application that contains essential information about the app's components, permissions, hardware requirements, and other metadata required for the android system to properly run and manage the application.

2) Explain webview.

- Webview is a component in android that allows developers to embed web content within their applications. It provides a way to display web pages or web-based content directly within the app's user interface, enabling functionalities such as browsing, displaying html content and handling user interaction with web elements.



↳ "AutoCompleteTextView" - G-Find (C) ↳

I Explain Auto Complete TextView with Example.

- Auto Complete TextView is a subclass of EditText in android that provides auto-completion suggesting to users as they type in text.

Ex:-

→ MainActivity.java

```
String[] suggestions = {"Apple", "Banna",  
"mango"};
```

```
ArrayAdapter<String> adapter = new ArrayAdapter<  
String>(this, android.R.layout.simple_dropdown  
item, suggestions);
```

```
AutoCompleteTextView autoCompleteTextView =  
findViewById(R.id.autoCompleteTextView);
```

```
autoCompleteTextView.setAdapter(adapter);
```

↳

→ XML

```
<AutoCompleteTextView  
android:id="@+id/autoCompleteTextView">
```

android:layout_width="match_parent"
android:layout_height="wrap_content"
android:completionThreshold="1"/>1

2. Explain framelayout with example

- frameLayout is a simple layout in Android that is designed to display a single item at a time.

→ .xml file

<framelayout

 android:layout_width="match_parent"

 android:layout_height="match_parent">

 <Textview

 android:id="@+id/textview"

 android:layout_width="wrap_content"

 android:layout_height="wrap_content"

 android:text="Hello"

 android:textcolor="@android:color/black"

 <Textview>

 android:id="@+id/image1"

 android:layout_width="wrap_content"

 android:layout_height="wrap_content"

 android:src="@drawable/my_image"

 android:visibility="invisible"/>

Java file

```
ImageView imageView = findViewById(R.id.imageView);
TextView textView = findViewById(R.id.textView);
textView.setOnClickListener(new View.OnClickListener() {
    public void onClick(View v) {
        if (imageView.getVisibility() == View.VISIBLE)
            imageView.setVisibility(View.INVISIBLE);
        else
            imageView.setVisibility(View.VISIBLE);
    }
});
```

Q-1 (CD)

Explain ArrayAdapter with example

ArrayAdapter in android is a bridge between an AdapterView (such as ListView, GridView, Spinner) and the underlying data source (typically an array or a list of items). It converts each item in the data source into a corresponding view in the Adapter view.

CX:-

→ mainActivity.java

```
import android.os.Bundle;  
import android.widget.ArrayAdapter;  
import androidx.appcompat.app.AppCompatActivity;
```

Public class mainActivity extends AppCompatActivity

{

protected void onCreate(Bundle savedInstanceState)
{

```
super.onCreate(savedInstanceState);  
setContentView(R.layout.activity_main);
```

```
String[] items = {"apple", "Banana"};
```

```

ArrayAdapter<String> adapter = new
    ArrayAdapter<>(this,
        android.R.layout.simple_list_item_1, items);
Listview listview = findViewById(R.id.listview);
listview.setAdapter(adapter);
    
```

→ mainActivity.xml

```

<listview
    android:id="@+id/listview"
    android:layout_width="match_parent"
    android:layout_height="match_parent"/>
    
```

2. Explain any 5 view in Android.

i) TextView :-

- A TextView is used to display text to the user.
 - It can be used to show a single line or multiple lines of text.
 - Attribute such as text, color, size, style, alignment, and font can be customized.
- Ex:- <TextView
 android:text = "Hello"/>

ii) Button :-

- A Button is a clickable view that the user can tap to perform an action.
- It typically displays a text label that can indicate the action it performs when clicked.
- It can have custom styles, color and dimensions.
- Ex:-

```
<Button
    android:text = "click me"/>
```

iii)

ImageView :-

- An ImageView is used to display image or drawables.
- It can display images from various source such as resource files or URLs.
- It supports scaling, cropping and other transformations.
- Ex:-

```
<ImageView
```

```
    android:src = "@drawable/myImage">
```

iv) EditText :-

- An EditText is an input field that allows the user to enter and edit text.
- It can handle single-line or multi-line text input.

Attributes such as input type, hint text and text appearance can be customized.

Ex:-

<EditText

 android:hint = "Enter your name"/>

i) ListView:-

A ListView is a view group that displays a list of scrollable items.

It is commonly used to display large datasets efficiently by recycling views as the user scrolls.

Each item in the list is typically represented by a single view.

G-2: (A)

1 What is the life cycle of broadcast receiver in android?

- The lifecycle of a Broadcast Receiver in Android involves transitioning from a registered state to an active state upon receiving a broadcast intent, executing its "onReceive()" method and then returning to the registered state.

2 Full form of APK

- Android Package Kit.

3 What is transient data in android?

- Transient data in android refers to temporary information stored in memory, often used for short-term operations or passing between components.

4 To share data between android application class is used.

- ContentProvider.

(Q.2 CB)

1. Explain Internal Storage.

Internal Storage in android refers to the built-in storage space that is private to each application. It is primarily used for storing files and data that are only accessible by the application itself.

Each Android application has its own private internal storage directory. This directory is inaccessible to other applications, providing data privacy security.

2. Explain External Storage.

External Storage in Android refers to a storage space that is shared among all applications and accessible to users via the device's file system. It typically includes removable storage such as SD card or USB drives, as well as non-removable shared storage on the device's internal memory.



Q-2 (C)

1 What is Firebase in android?

- Firebase is a comprehensive mobile and web application development platform developed by Google. It provides a wide range of tools and services to help developers build high-quality apps more efficiently. Firebase encompasses various features such as authentication, real-time database, cloud storage, hosting, analytics, messaging, and more all offered as a unified platform.

- One of the key features of Firebase is its real-time database, which allows developers to build responsive and collaborative apps by syncing data in real time across multiple clients.

2 Why use SQLite in Android?

- SQLite is a lightweight, embedded relational database management system that is widely used in Android development. It is the default choice for local data storage in Android applications due to several advantages:

- 1) Ease of use :-
- 2) minimal setup :-
- 3) Lightweight :-
- 4) Performance :-
- 5) Transaction Support :-
- 6) flexibility :-
- 7) Offline Data storage :-
- 8) Compatibility :-

1) Ease of use :-

- SQLite is easy to integrate into Android application as it is a part of the Android framework. Developers can work with SQLite database using simple SQL queries, making it accessible even to those with basic database knowledge.

Q-8 (C)

1 Design Login Form using Android Database
name : dbstudent, Table name : tblogin (id, name, pass) where id is Auto Increment.

Layout xml (activity_login.xml)

<RelativeLayout

<EditText

android:id = "@+id/name"

android:hint = "username" />

```

<EditText
    android:id="@+id/password"
    android:hint="Password"
    android:type="textPassword"/>
<Button
    android:id="@+id/login"
    android:text="Login"/>
</RelativeLayout>
→ Kotlin file CloginActivity.kt
class LoginActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_login)
        val name = findViewById<EditText>(R.id.name)
        val Password = findViewById<EditText>(R.id.password)
        val btn1 = findViewById<Button>(R.id.btn1)
        btn1.setOnClickListener {
            val name1 = name.text.toString()
            val Password1 = Password.text.toString()
            if (Elogin(name1, Password1))
        }
    }
}

```

startActivity (Intent (this @ LoginActivity)).
 mainActivity :: class.java)

finish();

else

Toast.makeText (this @ LoginActivity,

"Invalid Credentials"
 Toast.LENGTH_SHORT).show;

3

private fun login (name: String, Password: String): Boolean

4

val clb = openOrCreateDatabase ("clbstudent",
 Context.MODE_PRIVATE, null)

val cursor = clb.rawQuery ("SELECT *

FROM login WHERE name = ? AND

Password = ? ", array (name, Password))

return "result".

5

2 Permission Add in "AndroidManifest.xml"

i)

<uses -> Permission android : name =

"android.permission.WRITE_EXTERNAL_STORAGE"

ii)

<uses -> Permission android : name =

"android.permission.READ_EXTERNAL_STORAGE" />

2 Explain sending and receiving broadcast with example.

- Sending and receiving Broadcast in Android involves using the "BroadcastReceiver" class to listen for specific Broadcast intents and using the "sendBroadcast()" method to send Broadcast intents.

* Sending Broadcast :-

- To send a broadcast, you use the "sendBroadcast()" method. This method sends an intent with a specified action to all interested Broadcast receivers.

Ex:-

```
val intent = Intent("com.example.ACTION_CUSTOM_BROADCAST")
intent.putExtra("message", "Broadcast message sent!")
SendBroadcast(intent)
```

* Receiving Broadcast :-

- To receive a broadcast, you create a BroadcastReceiver and register it either dynamically or in the manifest file.

- Dynamically registering BroadcastReceiver

Ex:-

```
val broadcastReceiver = object : BroadcastReceiver {
```

S

```
    override fun onReceive(context: Context?, intent: Intent?)
```

S

```
        val message = intent?.getStringExtra("message")
```

```
        Toast.makeText(context, message, Toast.LENGTH_SHORT).show()
```

S

```
    val filter = IntentFilter("com.example.ACTION_CUSTOM_BROADCAST")
    registerReceiver(broadcastReceiver, filter)
```

* Declaring Broadcast Receiver in manifest:-

```
<receiver android:name=".myBroadcastReceiver">
```

<intent-filter>

```
    <action android:name="com.example.ACTION_CUSTOM_BROADCAST"/>
```

</intent-filter>

</receiver>