ATSS's
Institute of Industrial and Computer Management and Research, Nigdi Pune
MCA Department
Academic Year: 2023-24

Practical Journal on

IT31L- Mobile Application Development
(SEM-III)

Submitted By:

Student Name : Shrenik Sharad Sonje

Roll No : 105

Seat No.:

Date:

Course Outcome:

Student will be able to :

CO1: Develop mobile application. (Apply)

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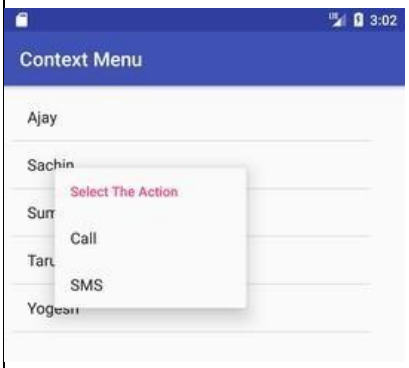
Students Name : Shrenik Sharad Sonje **Roll No. 105**

Sr. No	Program Title	Course Outcome	Page No.	Teacher's Sign with Date	Remarks
1.	Create a rating bar application, where user will rate a product. Display the rating using Toast.	CO1			
2.	Create an app to accept package delivery method from given radio button options. On Clicking of button, display the selected option using Toast.	CO1			
3.	Write a code to display "Do you want to close this application? "AlertDialog box. If user clicks on Yes, close the application and if clicks No, display "you choose no action for alertbox" message	CO1			
4.	Create an option menu with Icons. On selecting any option from menu, display a proper toast message.	CO1			
5.	Create following application using ContextMenu. When user long clicks on name, display menu options as Call, SMS. As per the option selected, display proper message. 	CO1			
6.	Write an application to accept a favourite programming language from user. Autocomplete the answer by using AutoCompleteTextView & ArrayAdapter	CO1			

7.	Write an android code to turn ON /OFF the Wi-Fi.	**CO1**			
8.	Create a fragment that has its own UI and enable your activities to communicate with fragments.	**CO1**			
9.	Create an application using two activities. In first activity- accept user name, pass the same to next activity & display a "Hello & Welcome <username>" using Intent.	**CO1**			
10.	Write an android code to make a phone call using Intent.	**CO1**			
11.	Write an android application using SQLite to create table and perform CRUD operations Consider a COURSE table with fields C_ID, C_Name, C_Duration, C_Description, perform ADD, UPDATE, DELETE and READ operations.	**CO1**			
12.	Create an Android app to manage STUDENT data, powered by Firebase Realtime database that supports: Adding Data to Firebase Realtime database, Retrieving Data from Firebase, Update a record and Deleting data from firebase data.	**CO1**			
13.	Write an android app to write JSON data into a file and read JSON data from created file.	**CO1**			
14.	Write a React Native application, to display a welcome screen with 'Welcome to React Native' message.	**CO1**			
15.	Write a Flutter application, to display a 'Hello World' message.	**CO1**			

Q1. Create a rating bar application, where user will rate a product. Display the rating using Toast.

#MainActivity.java

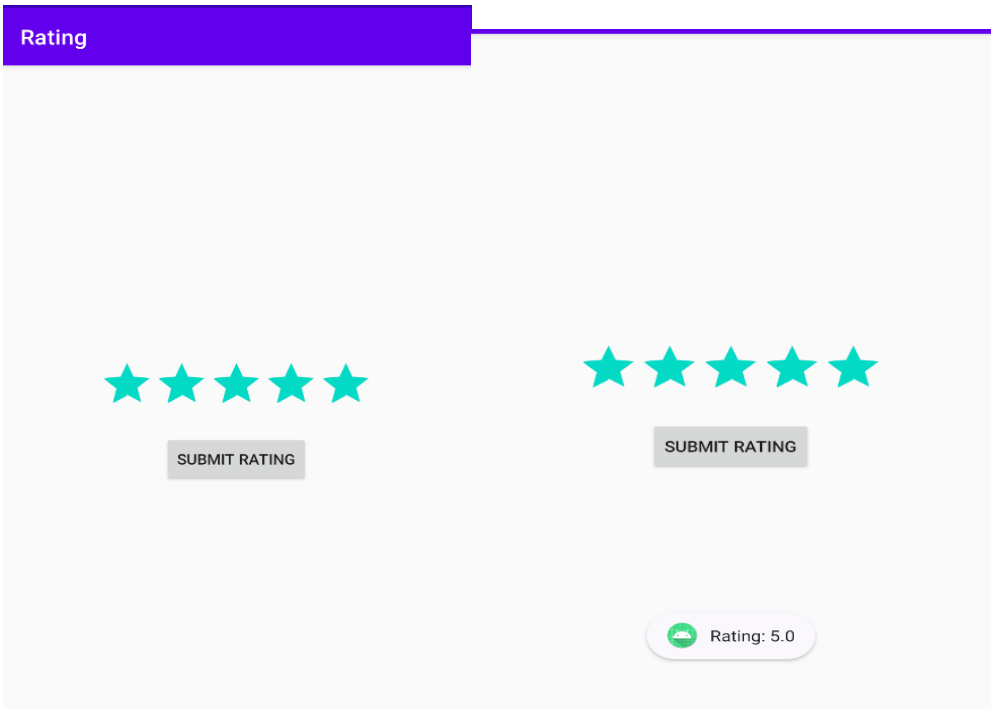
```
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.RatingBar;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
   private RatingBar ratingBar;
   private Button submitButton;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      ratingBar = findViewById(R.id.ratingBar);
      submitButton = findViewById(R.id.submitButton);

   }
   public void submitRating(View view) {
      float rating = ratingBar.getRating();
      String message = "Rating: " + rating;

      Toast.makeText(this, message, Toast.LENGTH_SHORT).show();
   }
}
```

#Acticity_Main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MainActivity">

   <RatingBar
      android:id="@+id/ratingBar"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_centerInParent="true"
      android:numStars="5"
     android:stepSize="1.0" />

   <Button
      android:id="@+id/submitButton"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_below="@id/ratingBar"
      android:layout_centerHorizontal="true"
      android:layout_marginTop="16dp"
      android:text="Submit Rating"
      android:onClick="submitRating"/>
</RelativeLayout>

      android:layout_weight="1"
         android:layout_height="wrap_content"
         android:layout_weight="1"

         android:onClick="performOperation"
```

```
    android:text="-" />

  <Button
    android:id="@+id/buttonMultiply"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:onClick="performOperation"
    android:text="*" />

</LinearLayout>
```

Output:



Q2. Create an app to accept package delivery method from given radio button options Same day, Next day, Pickup. On Clicking of any of the radio button, display the selected option using Toast.

#MainActivity.java

```
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

  private RadioGroup radioGroup;
  private Button submitButton;

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

    radioGroup = findViewById(R.id.radioGroup);
    submitButton = findViewById(R.id.submitButton);
  }
    public void submitDeliveryMethod(View view) {
      int selectedId = radioGroup.getCheckedRadioButtonId();

      if (selectedId != -1) {
        RadioButton selectedRadioButton = findViewById(selectedId);
        String selectedOption = selectedRadioButton.getText().toString();
```

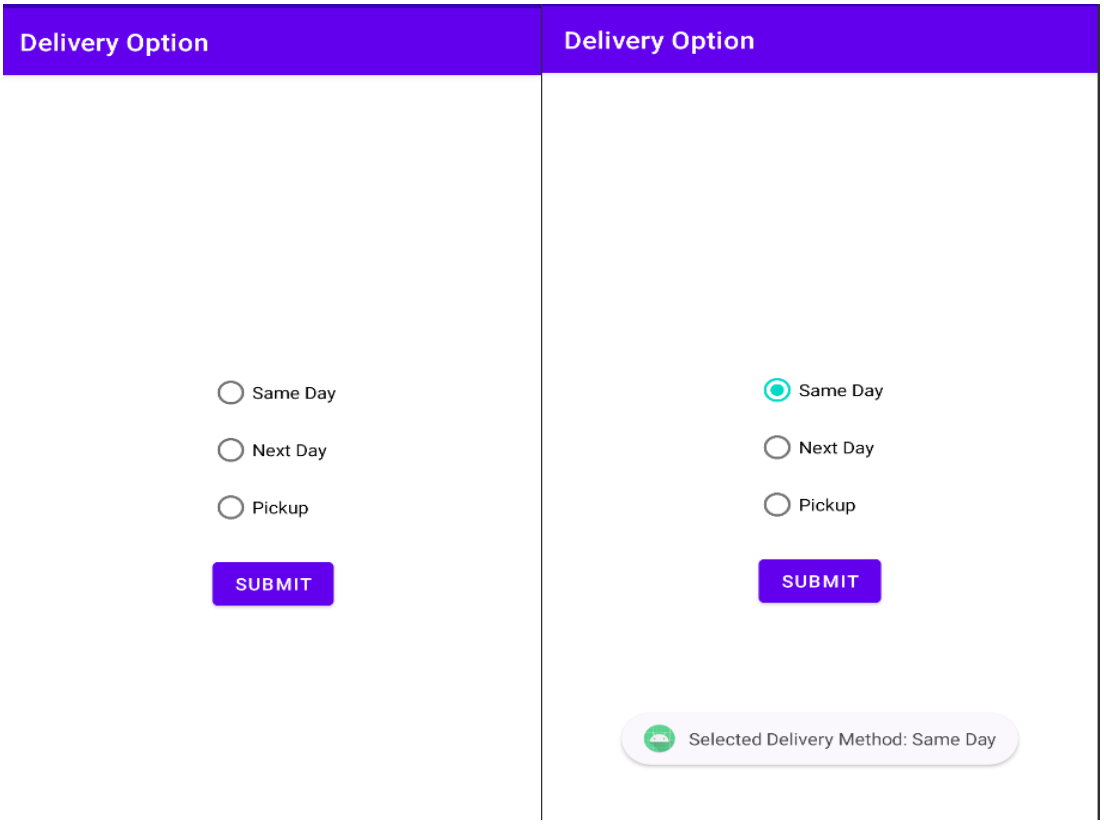
```
            String message = "Selected Delivery Method: " + selectedOption;

            Toast.makeText(this, message, Toast.LENGTH_SHORT).show();
        } else {
            Toast.makeText(this, "Please select a delivery method", Toast.LENGTH_SHORT).show();
        }
    }
}
```

#Acticity_Main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <RadioGroup
        android:id="@+id/radioGroup"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true">

        <RadioButton
            android:id="@+id/radioSameDay"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Same Day"/>
```

```
    <RadioButton
        android:id="@+id/radioNextDay"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Next Day"/>

    <RadioButton
        android:id="@+id/radioPickup"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Pickup"/>
  </RadioGroup>

  <Button
    android:id="@+id/submitButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/radioGroup"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="16dp"
    android:text="Submit"
    android:onClick="submitDeliveryMethod"/>
</RelativeLayout>
```

Output:


Delivery Option
Same Day
Next Day
Pickup
SUBMIT
Delivery Option
Same Day
Next Day
Pickup
SUBMIT
Selected Delivery Method: Same Day

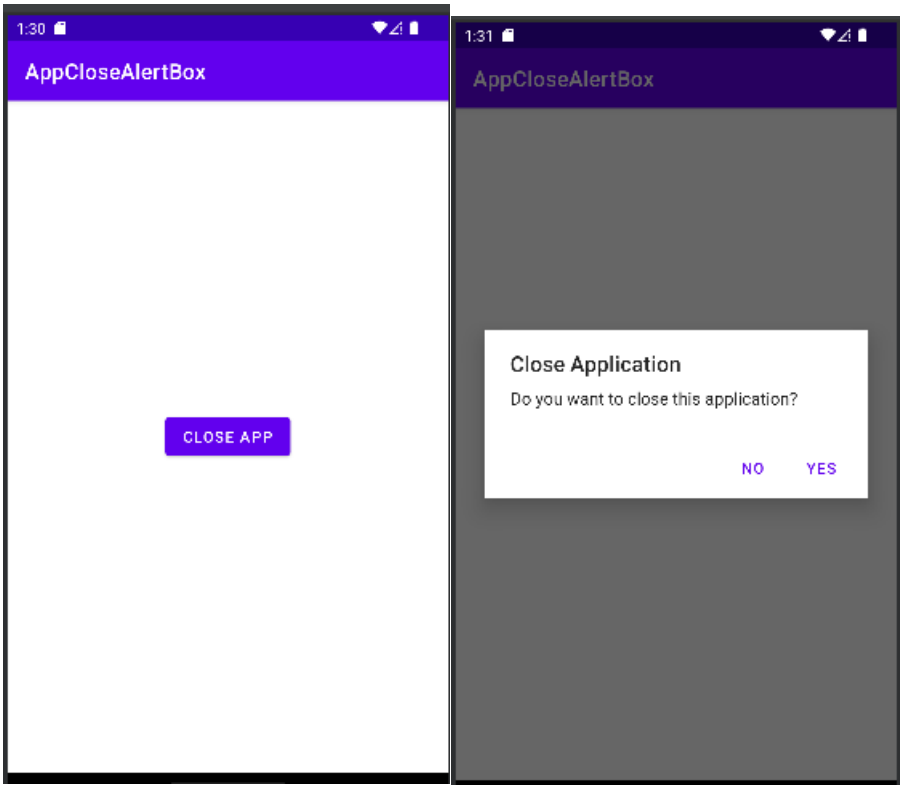
Q.3. Write a code to display “Do you want to close this application? “AlertDialog box. If user clicks on Yes, close the application and if clicks No, display “you choose no action for alertbox” message.

```
//MainActivity.java

package com.example.appclosealertbox;

import android.app.AlertDialog;

import android.content.DialogInterface;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;


public class MainActivity extends AppCompatActivity {
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);


      // Replace with the ID of your button in activity_main.xml
      Button closeAppButton = findViewById(R.id.closeAppButton);


      // Set a click listener for the button
      closeAppButton.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View view) {
            showCloseAlertDialog();
         }
      });
   }
```

```
private void showCloseAlertDialog() {
    AlertDialog.Builder builder = new AlertDialog.Builder(this);
    builder.setTitle("Close Application")
            .setMessage("Do you want to close this application?")
            .setPositiveButton("Yes", new DialogInterface.OnClickListener() {
                @Override
                public void onClick(DialogInterface dialogInterface, int i) {
                    closeApplication();
                }
            })
            .setNegativeButton("No", new DialogInterface.OnClickListener() {
                @Override
                public void onClick(DialogInterface dialogInterface, int i) {
                    displayNoActionMessage();
                }
            })
            .show();
}
private void closeApplication() {
    // Close the application
    finish();
}
private void displayNoActionMessage() {
    // Display a message when the user chooses "No"
    // You can replace this with any action you want to perform
    // when the user decides not to close the application
    showToast("You chose no action for alert box");
}
```

```
    private void showToast(String message) {
        Toast.makeText(this, message, Toast.LENGTH_SHORT).show();
    }
}
//activity_main.xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingLeft="16dp"
    android:paddingTop="16dp"
    android:paddingRight="16dp"
    android:paddingBottom="16dp"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/closeAppButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Close App"
        android:layout_centerInParent="true"/>

</RelativeLayout>
```

Output:


1:30
AppCloseAlertBox
CLOSE APP
1:31
AppCloseAlertBox
Close Application
Do you want to close this application?
NO
YES

Q.4. Create an option menu with Icons. On selecting any option from menu, display a proper toast message.

```
//MainActivity.java

package com.example.menu_with_icons;

import android.os.Bundle;

import android.view.Menu;

import android.view.MenuItem;

import android.widget.Toast;

import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;


public class MainActivity extends AppCompatActivity {
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);


      // Other initialization code goes here
   }
   @Override
   public boolean onCreateOptionsMenu(Menu menu) {
      getMenuInflater().inflate(R.menu.menu_main, menu);
      return true;
   }


   @Override
   public boolean onOptionsItemSelected(@NonNull MenuItem item) {
      switch (item.getItemId()) {
         case R.id.menu_call:
            showToast(getString(R.string.menu_call) + " option selected");
```

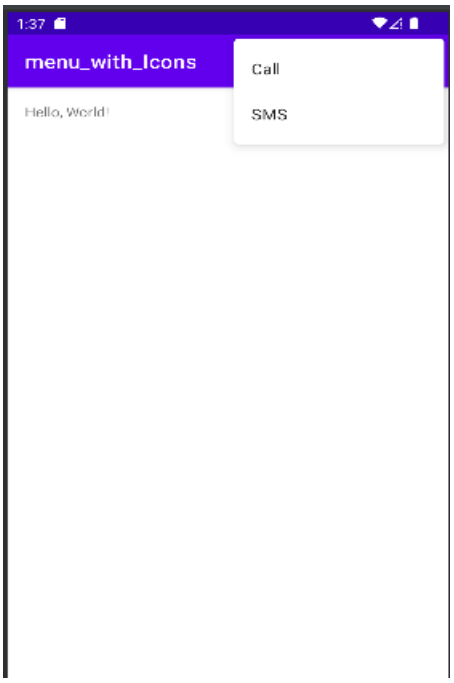
```
            return true;
        case R.id.menu_sms:
            showToast(getString(R.string.menu_sms) + " option selected");
            return true;
        default:
            return super.onOptionsItemSelected(item);
      }
   }

   private void showToast(String message) {
      Toast.makeText(this, message, Toast.LENGTH_SHORT).show();
   }
}
//activity_main.xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:padding="16dp"
   tools:context=".MainActivity">

   <TextView
      android:id="@+id/textView"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Hello, World!" />

   <!-- Other UI elements can be added here -->
```

```
</RelativeLayout>
```

//menu_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
   <item
      android:id="@+id/menu_call"
      android:icon="@drawable/ic_call"
      android:title="@string/menu_call" />
   <item
      android:id="@+id/menu_sms"
      android:icon="@drawable/ic_sms"
      android:title="@string/menu_sms" />
</menu>
```

Output:



Q.5. Create following application using ContextMenu. When user long clicks on name, display menu options as Call, SMS. As per the option selected, display proper message.

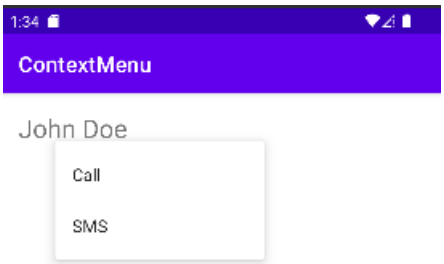
//MainActivity.java

```
package com.example.contextmenu;

import android.os.Bundle;
import android.view.ContextMenu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.view.View;
import android.widget.TextView;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private TextView nameTextView;

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

        nameTextView = findViewById(R.id.nameTextView);

        // Register the view for context menu
        registerForContextMenu(nameTextView);
    }
```

```
    @Override
    public void onCreateContextMenu(ContextMenu menu, View v,
ContextMenu.ContextMenuInfo menuInfo) {
        super.onCreateContextMenu(menu, v, menuInfo);

        // Inflate the menu from the XML resource
        MenuInflater inflater = getMenuInflater();
        inflater.inflate(R.menu.context_menu, menu);
    }

    @Override
    public boolean onContextItemSelected(MenuItem item) {
        switch (item.getItemId()) {
            case R.id.menu_call:
                displayMessage("Calling " + nameTextView.getText().toString());
                return true;
            case R.id.menu_sms:
                displayMessage("Sending SMS to " + nameTextView.getText().toString());
                return true;
            default:
                return super.onContextItemSelected(item);
        }
    }

    private void displayMessage(String message) {
        Toast.makeText(this, message, Toast.LENGTH_SHORT).show();
    }
}
//activity_main.xml
<?xml version="1.0" encoding="utf-8"?>
```

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:padding="16dp"
   tools:context=".MainActivity">

   <TextView
      android:id="@+id/nameTextView"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="John Doe"
      android:textSize="24sp"
      android:longClickable="true"/>

</RelativeLayout>

//context_menu.xml
<menu xmlns:android="http://schemas.android.com/apk/res/android">
   <item
      android:id="@+id/menu_call"
      android:title="Call" />
   <item
      android:id="@+id/menu_sms"
      android:title="SMS" />
</menu>
```

Output:



Q.6. Write an android code to accept fav programming language from user. Autocomplete the answer by using autocomplete textview and arrayAdapter

Activity_main.xml

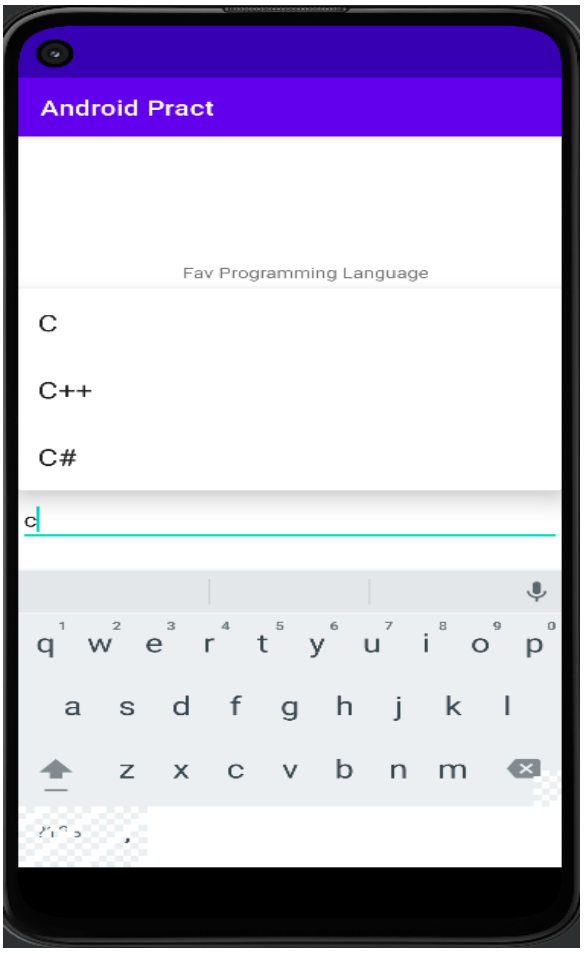
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MainActivity">


   <TextView
      android:id="@+id/textView"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginTop="120dp"
      android:text="Fav Programming Language"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintHorizontal_bias="0.553"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent" />

   <AutoCompleteTextView
      android:id="@+id/autoCompleteTextView"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_marginTop="204dp"
      android:hint="Type fav language"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintHorizontal_bias="0.599"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toBottomOf="@+id/textView" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
package com.example.favprogramming;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.ArrayAdapter;
```

```
import android.widget.AutoCompleteTextView;

public class MainActivity extends AppCompatActivity {
   String[] language={"C","C++","Java",".NET","JavaScript","Android","ASP.NET","PHP","C#"};
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      ArrayAdapter<String> adapter = new ArrayAdapter<String>
(this,android.R.layout.select_dialog_item,language);
      AutoCompleteTextView actv =
(AutoCompleteTextView)findViewById(R.id.autoCompleteTextView); actv.setThreshold(1);
      actv.setAdapter(adapter);

   }
}
```

Output:



Q.7. Write an android code to turn ON /OFF the Wi-Fi#MainActivity.java

```
// MainActivity.java
import android.content.Context;
import android.content.pm.PackageManager;
import android.net.wifi.WifiManager;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;

public class MainActivity extends AppCompatActivity {

    private static final int PERMISSIONS_REQUEST_CODE = 100;
    private Button btnToggleWifi;
    private WifiManager wifiManager;

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

        btnToggleWifi = findViewById(R.id.btnToggleWifi);
        wifiManager = (WifiManager) getSystemService(Context.WIFI_SERVICE);
```

```
        checkAndRequestPermissions();

        btnToggleWifi.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                toggleWifi();
            }
        });
    }

    private void checkAndRequestPermissions() {
        if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {
            if (ContextCompat.checkSelfPermission(this,
android.Manifest.permission.CHANGE_WIFI_STATE) !=
PackageManager.PERMISSION_GRANTED ||
                    ContextCompat.checkSelfPermission(this,
android.Manifest.permission.ACCESS_WIFI_STATE) !=
PackageManager.PERMISSION_GRANTED) {

                ActivityCompat.requestPermissions(this,
                        new String[]{
                                android.Manifest.permission.CHANGE_WIFI_STATE,
                                android.Manifest.permission.ACCESS_WIFI_STATE
                        },
                        PERMISSIONS_REQUEST_CODE);
            }
        }
    }

    private void toggleWifi() {
        if (wifiManager != null) {
```

```
        if (wifiManager.isWifiEnabled()) {
            wifiManager.setWifiEnabled(false);
            showToast("Wi-Fi turned OFF");
        } else {
            wifiManager.setWifiEnabled(true);
            showToast("Wi-Fi turned ON");
        }
    }
}

private void showToast(String message) {
    Toast.makeText(this, message, Toast.LENGTH_SHORT).show();
}

@Override
public void onRequestPermissionsResult(int requestCode, @NonNull String[] permissions,
@NonNull int[] grantResults) {
    super.onRequestPermissionsResult(requestCode, permissions, grantResults);
    if (requestCode == PERMISSIONS_REQUEST_CODE) {
        if (grantResults.length > 0 && grantResults[0] ==
PackageManager.PERMISSION_GRANTED) {
            // Permissions granted, you can proceed with your actions
        } else {
            // Permissions not granted, inform the user or handle it gracefully
            showToast("Permissions required to toggle Wi-Fi.");
        }
    }
}
}
```

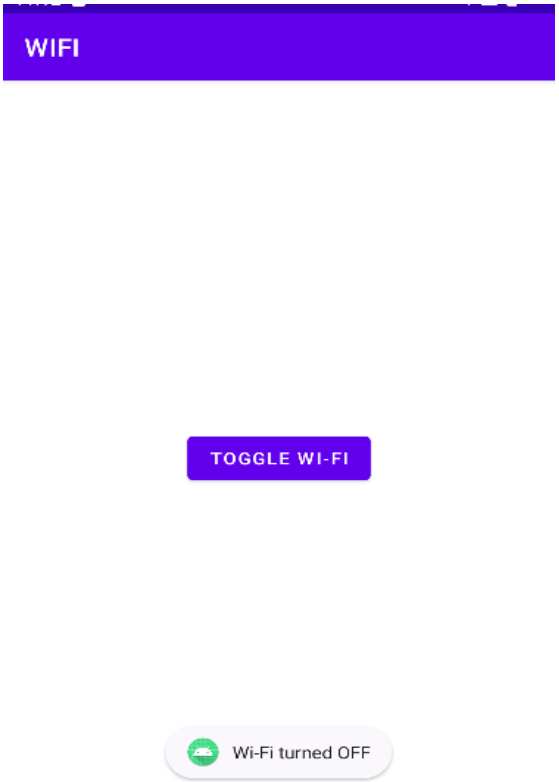
#Activity_Main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
   xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:padding="16dp">

   <Button
      android:id="@+id/btnToggleWifi"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Toggle Wi-Fi"
      android:layout_centerInParent="true"/>
</RelativeLayout>
```

#Android_Manifest

```
<uses-permission android:name="android.permission.CHANGE_WIFI_STATE" />
<uses-permission android:name="android.permission.ACCESS_WIFI_STATE" />
```

Output:


WIFI
TOGGLE WI-FI
Wi-Fi turned OFF

Q.8. Create a fragment that has its own UI and enable your activities to communicate with fragments.

#FirstFragment.java

```
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
import com.abhishek.fragmentactivity.R;


public class FirstFragment extends Fragment {
   @Nullable @Override
public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup container,
@Nullable Bundle savedInstanceState) {
   //return super.onCreateView(inflater, container, savedInstanceState);
   return inflater.inflate(R.layout.first_fragment,container,false);
   }
}
```

#SecondFragment.java

```
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
import com.abhishek.fragmentactivity.R;
public class SecondFragment extends Fragment {
   @Nullable @Override
```

```
public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup container,
@Nullable Bundle savedInstanceState) {
//return super.onCreateView(inflater, container, savedInstanceState);
   return inflater.inflate(R.layout.second_fragment,container,false);
}
}
#MainActivity.java
import androidx.appcompat.app.AppCompatActivity;
import android.content.Context;
import android.graphics.Color;
import android.net.wifi.WifiManager;
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.AutoCompleteTextView;
import android.widget.CompoundButton;
import android.widget.TextView;
import android.widget.ToggleButton;
import androidx.fragment.app.Fragment;
 import android.view.View;
public class MainActivity extends AppCompatActivity {
   Fragment selectedFragment;
   @Override
protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
}
   public void selectFragment(View view) {
      if (view == findViewById(R.id.button1)) {
      selectedFragment = new FirstFragment();
   } else if (view == findViewById(R.id.button2)) {
```

```
        selectedFragment = new SecondFragment();
    }
        getSupportFragmentManager().beginTransaction().replace(R.id.fragment_container,
selectedFragment).commit();
    }
}
```

#firstFragment.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    xmlns:app="http://schemas.android.com/apk/res-auto">
    <TextView
        android:id="@+id/first"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Hello, First Fragment "
        android:textSize="30sp"
        android:gravity="center"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

#SecondFragment.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
   xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   xmlns:app="http://schemas.android.com/apk/res-auto">
   <TextView
      android:id="@+id/first"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:text="Hello, second Fragment"
      android:textSize="30sp"
      android:gravity="center"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintHorizontal_bias="0.5"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

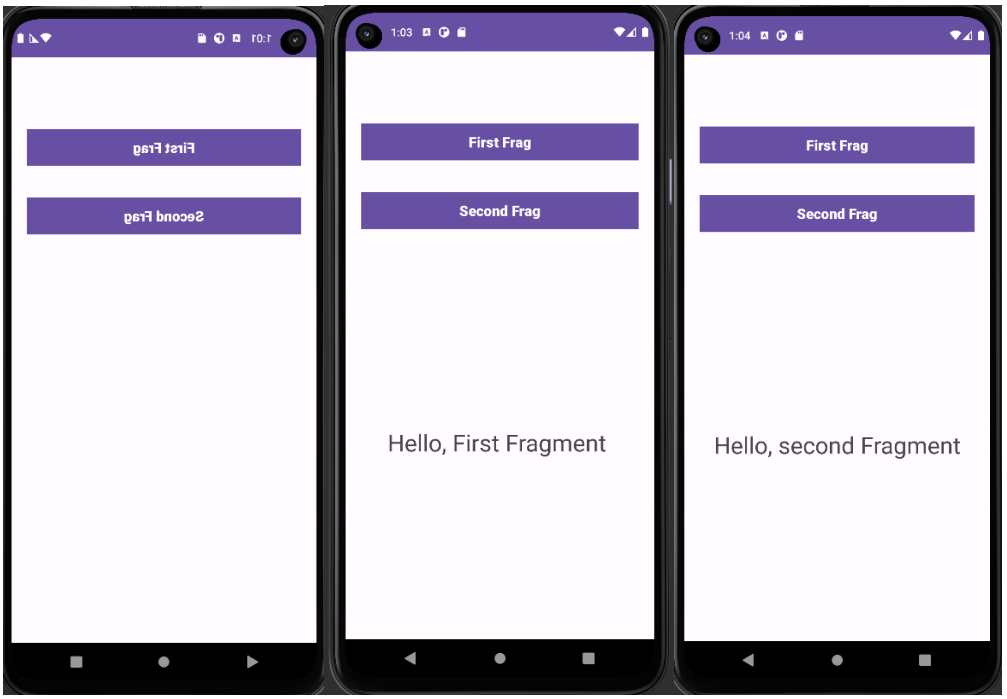
#activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
```

```
android:orientation="vertical"
tools:context=".MainActivity">
<!-- Heading of the activity -->
<TextView android:id="@+id/textView"
   android:layout_width="match_parent"
   android:layout_height="wrap_content"
   android:layout_marginTop="20dp"
   android:layout_marginBottom="20dp"
   android:text="@string/heading"
   android:textAlignment="center"
   android:textColor="@android:color/holo_green_light"
   android:textSize="24sp"
   android:textStyle="bold" />
<!-- Button to display first fragment -->
<Button android:id="@+id/button1"
   android:layout_width="fill_parent"
   android:layout_height="wrap_content"
   android:layout_margin="20dp"
   android:background="#4CAF50"
   android:onClick="selectFragment"
   android:text="@string/fragment1_button"
   android:textColor="@android:color/background_light"
   android:textSize="18sp"
   android:textStyle="bold" />
<!-- Button to display second fragment -->
<Button android:id="@+id/button2"
   android:layout_width="fill_parent"
   android:layout_height="wrap_content"
   android:layout_margin="20dp"
   android:background="#4CAF50"
```

```
    android:onClick="selectFragment"
    android:text="@string/fragment2_button"
    android:textColor="@android:color/background_light"
    android:textSize="18sp"
    android:textStyle="bold" />
  <!-- Adding Fragment element in the activity -->
  <FrameLayout
    android:id="@+id/fragment_container"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    />
</LinearLayout>
```

Output:



Q.9. Create an application using two activities. In first activity- accept user name, pass the same to next activity & display a “Hello & Welcome <username>” using Intent. Design proper UI.

#MainActivity.java

```
package com.abhishek.twoactivities;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity {
   EditText uname;
   @Override
protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
}
   public void callSecondActivity(View view) {
      uname =(EditText) findViewById(R.id.editText1);
      Intent intent=new Intent(this, SecondActivity.class);
      intent.putExtra ("Value1", "Hello");
      intent.putExtra ("Value2", uname.getText().toString());
      startActivity(intent);
   }
}
```

#SecondActivity.java

```
package com.abhishek.twoactivities;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;
import android.widget.Toast;
public class SecondActivity extends AppCompatActivity {
   TextView t1;
   @Override
protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_second);
      t1 = findViewById(R.id.textView2);
   Bundle extras = getIntent().getExtras();
   String value1 = extras.getString("Value1");
```

```
   String value2 = extras.getString("Value2");
   t1.setText(value1+ " "+value2);
   Toast.makeText (getApplicationContext(), value1+ " "+value2, Toast.LENGTH_LONG).show();
}
   public void goBack(View view) {
      Intent bintent=new Intent(this, MainActivity.class);
      startActivity(bintent);
   }
}
```

#MainActivity.xml

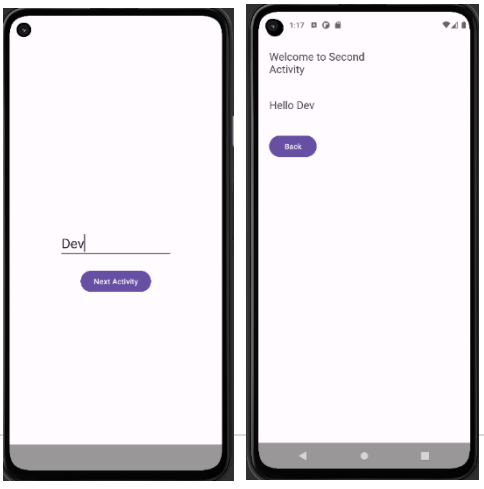
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MainActivity" >

   <EditText
      android:id="@+id/editText1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:hint=" Enter Your Name "
      android:layout_centerHorizontal="true"
      android:layout_centerVertical="true"
      android:layout_marginBottom="20dp"
      android:textSize="25sp"/>

   <Button android:id="@+id/buttonNext"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Next Activity"
      android:layout_centerHorizontal="true"
      android:layout_centerVertical="true"
      android:onClick="callSecondActivity"
      android:layout_below="@id/editText1"/>
</RelativeLayout>
```

#SecondActivity.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools"
```

```
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".SecondActivity">

    <TextView
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:ems="10"
        android:text="Welcome to Second Activity"
        android:textSize="20sp"/>

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:ems="10"
        android:text=""
        android:textSize="20sp"
        android:layout_below="@id/editText"/>

    <Button
        android:id="@+id/buttonBack"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/textView2"
        android:layout_margin="20dp"
        android:onClick="goBack"
        android:text="Back"
        />
</RelativeLayout>
```

Output :



Q.10. Write android code to make a phone call using intent design proper UI.

Activity_main.xml

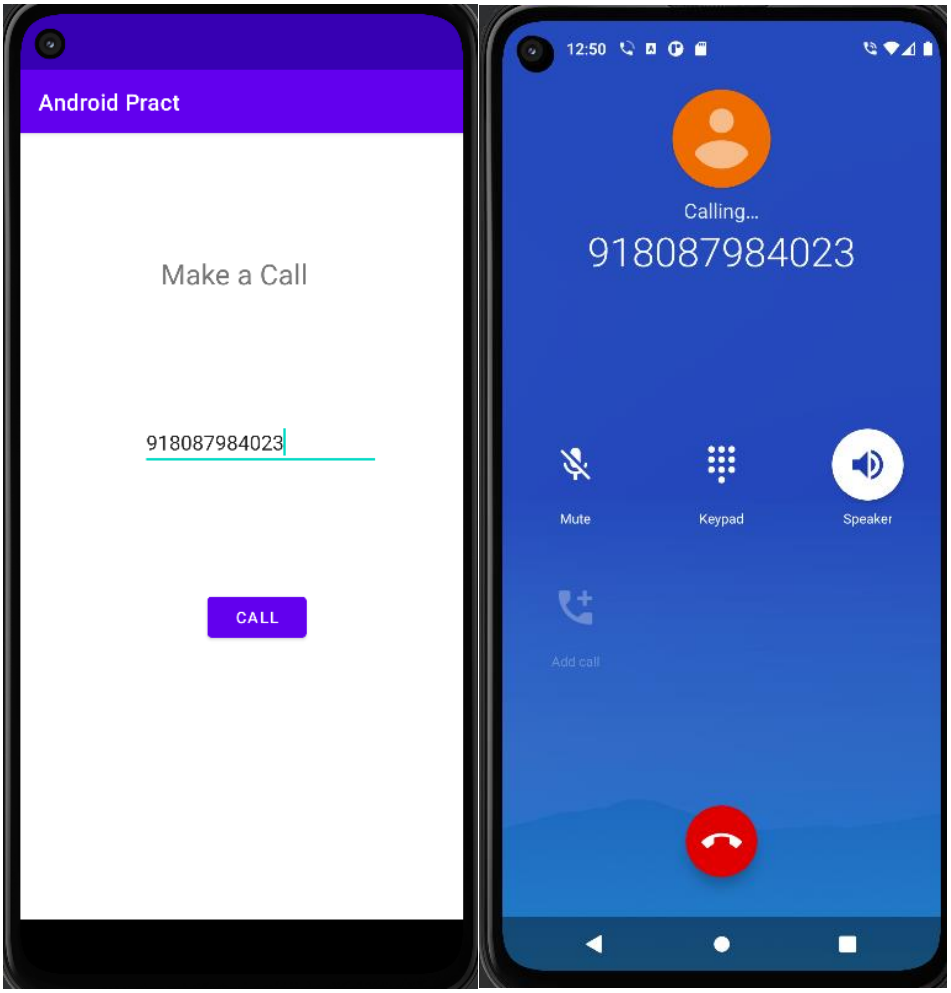
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MainActivity">

   <TextView
      android:id="@+id/textView"
      android:layout_width="164dp"
      android:layout_height="60dp"
      android:layout_marginTop="108dp"
      android:text="Make a Call"
      android:textSize="25sp"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintHorizontal_bias="0.546"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent" />

   <EditText
      android:id="@+id/editTextNumber"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginTop="84dp"
      android:ems="10"
      android:hint="Type number with +91"
      android:inputType="number"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintHorizontal_bias="0.592"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toBottomOf="@+id/textView" />

   <Button
      android:id="@+id/button"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginTop="108dp"
      android:text="Call"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintHorizontal_bias="0.544"
```

```
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/editTextNumber" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
package com.example.phonecallintent;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {
    Button btn;
    EditText Phno;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);

      btn= findViewById(R.id.button);
      Phno = findViewById(R.id.editTextNumber);

      btn.setOnClickListener(arg -> {

 String phone_number = Phno.getText().toString();

Intent phone_intent = new Intent(Intent.ACTION_CALL);

phone_intent.setData(Uri.parse("tel:" + phone_number));

startActivity(phone_intent);
      });
   }
}
```

Output:


Android Pract
Make a Call
918087984023
CALL
12:50
Calling...
918087984023
Mute
Keypad
Speaker
Add call

Q.11. Write an android application using SQLite to create table and perform CRUD operations (Example. COURSE table (ID, Name, Duration, Description), perform ADD, UPDATE, DELETE and READ operations)

#Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   tools:context=".MainActivity">

   <EditText
      android:id="@+id/c_id"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Course ID"
      android:inputType="number" />

   <EditText
      android:id="@+id/c_name"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Course Name"
      android:inputType="textPersonName" />

   <EditText
      android:id="@+id/c_duration"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Course Duration"
      android:inputType="number" />

   <EditText
      android:id="@+id/c_description"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_weight="0.1"
      android:hint="Course Description"
      android:inputType="textLongMessage" />

   <Button
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="loadCourse"
    android:layout_gravity="center"
    android:text="Load All Course" />

  <TextView
    android:id="@+id/result"
    android:layout_width="match_parent"
    android:layout_height="0dp"
    android:layout_weight="1"
    android:hint="Result"
    android:textSize="30dp" />

  <LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">
  <Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:onClick="addCourse"
    android:text="ADD" />

  <Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:onClick="updateCourse"
    android:text="UPDATE" />

  <Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:onClick="deleteCourse"
    android:text="DELETE By Id" />
  </LinearLayout>
</LinearLayout>
```

MainActivity.java

```
package com.abhi.practsql;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.text.method.ScrollingMovementMethod;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
   TextView resultText;
   EditText courseId;
   EditText courseDuration;
   EditText courseDescription;
   EditText courseName;
   MyDBHandler dbHandler;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      resultText = (TextView) findViewById(R.id.result);
      courseId = (EditText) findViewById(R.id.c_id);
      courseName = (EditText) findViewById(R.id.c_name);
      courseDuration = (EditText) findViewById(R.id.c_duration);
      courseDescription = (EditText) findViewById(R.id.c_description);
      resultText.setMovementMethod(new ScrollingMovementMethod());
      dbHandler = new MyDBHandler(this);
   }

   public void loadCourse(View view) {
      resultText.setText(dbHandler.loadHandler());
      courseId.setText("");
      courseName.setText("");
      courseDuration.setText("");
      courseDescription.setText("");
   }

   public void addCourse(View view) {
      if (!courseId.getText().toString().isEmpty() &&
            !courseName.getText().toString().isEmpty() &&
               !courseDuration.getText().toString().isEmpty() &&
            !courseDescription.getText().toString().isEmpty())
      {
```

```
        int id = Integer.parseInt(courseId.getText().toString());
        int duration = Integer.parseInt(courseDuration.getText().toString());
        String name = courseName.getText().toString();
        String desc = courseDescription.getText().toString();
        Course course = new Course(id, name, duration, desc);
        long insertId = dbHandler.addHandler(course);
        if (insertId == -1) {
            resultText.setText("Record already exists");
        } else {
            courseId.setText("");
            courseName.setText("");
            courseDuration.setText("");
            courseDescription.setText("");
            resultText.setText("Record added");
        }
    } else {
        resultText.setText("Please fill correct details");
    }
}

public void updateCourse(View view) {
    if (!courseId.getText().toString().isEmpty() &&
            !courseName.getText().toString().isEmpty() &&
            !courseDuration.getText().toString().isEmpty() &&
            !courseDescription.getText().toString().isEmpty())
    {
        boolean result =
dbHandler.updateHandler(Integer.parseInt(courseId.getText().toString()),
courseName.getText().toString(), Integer.parseInt(courseDuration.getText().toString()),
courseDescription.getText().toString());
        if (result) {
            courseId.setText("");
            courseName.setText("");
            courseDuration.setText("");
            courseDescription.setText("");
            resultText.setText("Record Updated");
        } else {
            resultText.setText("No Record Found");
        }
    } else {
        resultText.setText("Please fill correct id and name");
    }
}
public void deleteCourse(View view) {

    if (!courseId.getText().toString().isEmpty()) {
```

```
        boolean result =
dbHandler.deleteHandler(Integer.parseInt(courseId.getText().toString()));
        if (result) {
            courseId.setText("");
            courseName.setText("");
            courseDuration.setText("");
            courseDescription.setText("");
            resultText.setText("Record Deleted");
        } else {
            resultText.setText("No Record Found");
        }
    } else {
        resultText.setText("Please fill correct id");
    }
  }

  @Override
  protected void onDestroy() {
    super.onDestroy();
    dbHandler.close();
  }
}
```

MyDBHandler.java

```
package com.abhi.practsql;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

public class MyDBHandler extends SQLiteOpenHelper {
  private static final int DATABASE_VERSION = 1;
  private static final String DATABASE_NAME = "courseDB.db";
  private static final String TABLE_COURSE = "course";
  private static final String COLUMN_ID = "CourseID";
  private static final String COLUMN_NAME = "CourseName";
  private static final String COLUMN_DUR = "CourseDuration";
  private static final String COLUMN_DESC = "CourseDescription";

  MyDBHandler(Context context) {
    super(context, DATABASE_NAME, null, DATABASE_VERSION);
```

```
}

@Override
public void onCreate(SQLiteDatabase db) {
    String CREATE_COURSE_TABLE = "CREATE TABLE " + TABLE_COURSE + "(" +
            COLUMN_ID + " INTEGER PRIMARY KEY," +
            COLUMN_NAME + " TEXT," +
            COLUMN_DUR + " TEXT," +
            COLUMN_DESC + " TEXT" +
            ")";
    db.execSQL(CREATE_COURSE_TABLE);
}

@Override
public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
    db.execSQL("DROP TABLE IF EXISTS " + TABLE_COURSE);
    onCreate(db);
}

String loadHandler() {
    String result = "";
    String query = "SELECT * FROM " + TABLE_COURSE;
    SQLiteDatabase db = this.getReadableDatabase();
    Cursor cursor = db.rawQuery(query, null);

    while (cursor.moveToNext()) {
        int result_0 = cursor.getInt(cursor.getColumnIndex(COLUMN_ID));
        String result_1 = cursor.getString(cursor.getColumnIndex(COLUMN_NAME));
        String result_2 = cursor.getString(cursor.getColumnIndex(COLUMN_DUR));
        String result_3 = cursor.getString(cursor.getColumnIndex(COLUMN_DESC));

        result += "ID: " + result_0 + "\nName: " + result_1 + "\nDuration: " + result_2 +
"\nDescription: " + result_3 + "\n\n";
    }

    cursor.close();
    db.close();

    if (result.isEmpty()) {
        result = "No Records Found";
    }

    return result;
}

long addHandler(Course course) {
```

```
    long id;
    ContentValues values = new ContentValues();
    values.put(COLUMN_ID, course.getID());
    values.put(COLUMN_NAME, course.getCourseName());
    values.put(COLUMN_DUR, course.getDur());
    values.put(COLUMN_DESC, course.getDesc());
    SQLiteDatabase db = this.getWritableDatabase();
    id = db.insert(TABLE_COURSE, null, values);
    db.close();
    return id;
  }

  boolean updateHandler(int ID, String name, int dur, String desc) {
    SQLiteDatabase db = this.getWritableDatabase();
    ContentValues args = new ContentValues();

    args.put(COLUMN_ID, ID);
    args.put(COLUMN_NAME, name);
    args.put(COLUMN_DUR, dur);
    args.put(COLUMN_DESC, desc);
    return db.update(TABLE_COURSE, args, COLUMN_ID + "=" + ID, null) > 0;
  }
  boolean deleteHandler(int ID) {
    boolean result = false;
    String query = "Select*FROM " + TABLE_COURSE + " WHERE " + COLUMN_ID + " = '" + ID +
"'";
    SQLiteDatabase db = this.getWritableDatabase();
    Cursor cursor = db.rawQuery(query, null);
    Course course = new Course();
    if (cursor.moveToFirst()) {
      course.setID(Integer.parseInt(cursor.getString(0)));
      db.delete(TABLE_COURSE, COLUMN_ID + "=?", new
String[]{String.valueOf(course.getID())
      });
      cursor.close();
      result = true;
    }
    db.close();
    return result;
  }
}
```

Course.java

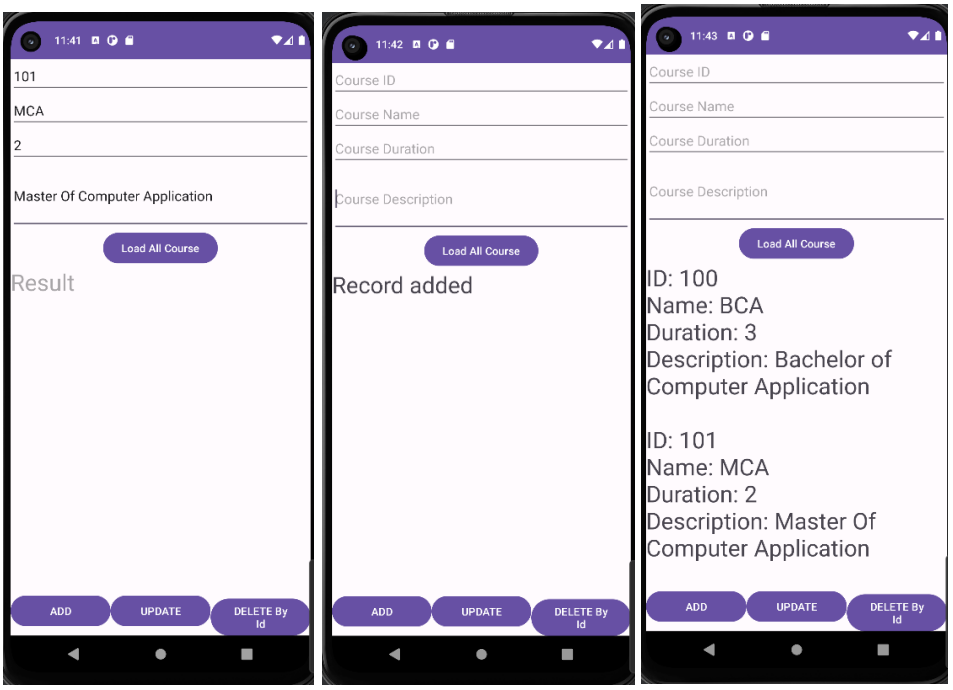
```
package com.abhi.practsql;
```

```
public class Course {

   private int id;
   private String courseName;

   private int dur;
   private String desc;

   Course() {
   }
   Course(int id, String courseName, int dur, String desc) {
      this.id = id;
      this.dur = dur;
      this.courseName = courseName;
      this.desc = desc;
   }
   void setID(int id) {
      this.id = id;
   }
   int getID() {
      return this.id;
   }
   void setCourseName(String coursename) {
      this.courseName = coursename;

   }
   String getCourseName() { return
         this.courseName;
   }

   public int getDur() {
      return dur;
   }

   public void setDur(int dur) {
      this.dur = dur;
   }

   public String getDesc() {
      return desc;
   }

   public void setDesc(String desc) {
      this.desc = desc;
```

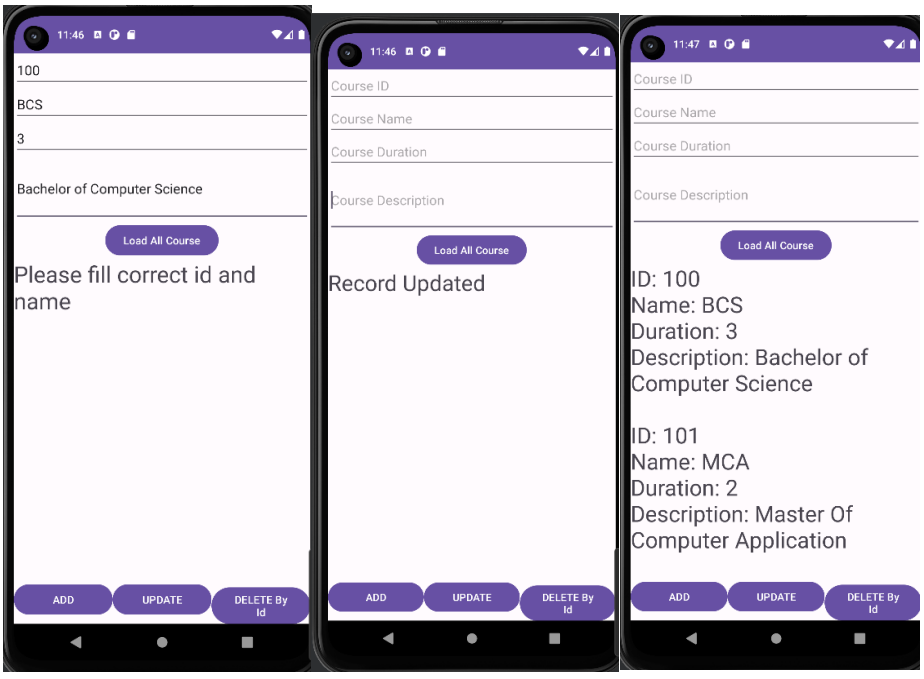
```
    }
}
```

Output:

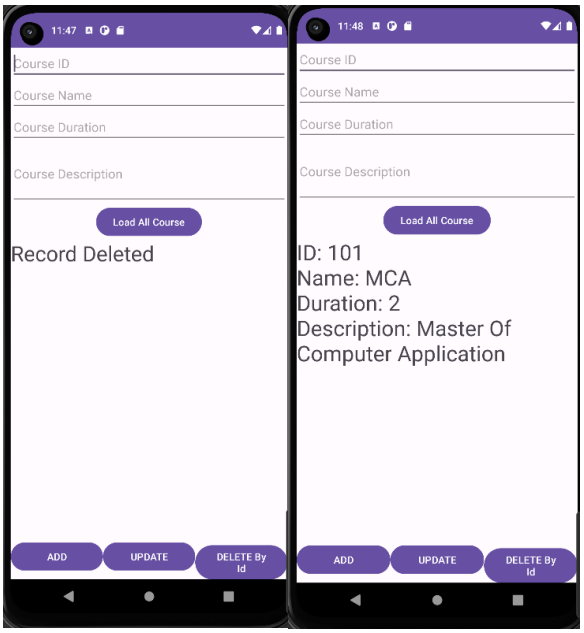
ADD and READ



UPDATE and READ



DELETE and READ



Q.12. Create an Android app to manage STUDENT data, powered by Firebase Realtime database that supports: Adding Data to Firebase Realtime database, Retrieving Data from Firebase, Update a record and Deleting data from firebase data.

#Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"

  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:layout_margin="10dp"
  android:orientation="vertical"
  tools:context=".MainActivity">

  <TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center_horizontal"
    android:text="Student Details"
    android:textSize="20sp" />

  <EditText
    android:id="@+id/stdId"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Enter Student ID" />

  <EditText
    android:id="@+id/stdName"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Enter Student Name" />

  <EditText
    android:id="@+id/stdAdd"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Enter Student Address" />

  <EditText
    android:id="@+id/stdPhno"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
```

```
    android:hint="Enter Student Phone number" />

  <LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">

    <Button
      android:id="@+id/btnSave"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:onClick="save"
      android:text="Save" />

    <Button
      android:id="@+id/btnShow"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginLeft="3dp"
      android:onClick="show"
      android:text="Show" />

    <Button
      android:id="@+id/btnUpdate"

      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginLeft="3dp"
      android:onClick="update"
      android:text="Update" />

    <Button
      android:id="@+id/btnDelete"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginLeft="3dp"
      android:onClick="delete"
      android:text="Delete" />
  </LinearLayout>
</LinearLayout>
```

MainActivity.java

```
package com.abhi.firebasecurd;
import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;
```

```
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;

import com.google.firebase.database.DataSnapshot;
import com.google.firebase.database.DatabaseError;
import com.google.firebase.database.DatabaseReference;
import com.google.firebase.database.FirebaseDatabase;
import com.google.firebase.database.ValueEventListener;

public class MainActivity extends AppCompatActivity {
   EditText txtId, txtName, txtAdd, txtphno;
   DatabaseReference dbref;
   Student std;
   String id, name, add, phno;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      txtId = findViewById(R.id.stdId);
      txtName = findViewById(R.id.stdName);
      txtAdd = findViewById(R.id.stdAdd);
      txtphno = findViewById(R.id.stdPhno);
      std = new Student();
   }

   public void save(View view) {
      id = txtId.getText().toString();
      name = txtName.getText().toString();
      add = txtAdd.getText().toString();
      phno = txtphno.getText().toString();
//Code to Save the employee details
      dbref = FirebaseDatabase.getInstance().getReference().child("Student");
      try {
         if (TextUtils.isEmpty(txtId.getText().toString()))
            Toast.makeText(getApplicationContext(), "Please enter ID",
Toast.LENGTH_LONG).show();
         else if (TextUtils.isEmpty(txtName.getText().toString()))
            Toast.makeText(getApplicationContext(), "Please enter Name",
Toast.LENGTH_LONG).show();

         else if (TextUtils.isEmpty(txtphno.getText().toString()))
```

```
            Toast.makeText(getApplicationContext(), "Please enter Phone Number",
                Toast.LENGTH_LONG).show();
        else {
            std.setID(id);
            std.setName(name);
            std.setAddress(add);
            std.setPhno(phno);
//insert details in db.
            dbref.child(id).setValue(std);
            Toast.makeText(getApplicationContext(), "Record Added",
Toast.LENGTH_LONG).show();
            txtId.setText("");
            txtName.setText("");
            txtAdd.setText("");
            txtphno.setText("");
        }
    } catch (Exception e) {
        e.printStackTrace();
    }
  }
  //Code to Display a Record
  public void show(View view) {
    id = txtId.getText().toString();
    dbref = FirebaseDatabase.getInstance().getReference().child("Student").child(id);
    dbref.addListenerForSingleValueEvent(new ValueEventListener() {
        @Override
        public void onDataChange(@NonNull DataSnapshot snapshot) {
            if (snapshot.hasChildren()) {
                txtId.setEnabled(false);
                txtName.setText(snapshot.child("name").getValue().toString());
                txtAdd.setText(snapshot.child("address").getValue().toString());
                txtphno.setText(snapshot.child("phno").getValue().toString());
            } else {
                Toast.makeText(getApplicationContext(), "No data to display",
Toast.LENGTH_LONG).show();
            }
        }

        @Override
        public void onCancelled(@NonNull DatabaseError error) {
        }
    });
  }
  //Code to update a Record

  public void update(View view) {
```

```
    id = txtId.getText().toString();
    dbref = FirebaseDatabase.getInstance().getReference().child("Student").child(id);
    dbref.addListenerForSingleValueEvent(new ValueEventListener() {
      @Override
      public void onDataChange(@NonNull DataSnapshot snapshot) {
        if (snapshot.hasChildren()) {
          std.setName(txtName.getText().toString().trim());

          std.setAddress(txtAdd.getText().toString().trim());
          std.setPhno(txtphno.getText().toString().trim());
          dbref.setValue(std);
          Toast.makeText(getApplicationContext(), "Data Updated",
Toast.LENGTH_LONG).show();
        } else {
          Toast.makeText(getApplicationContext(), "No data to update",
Toast.LENGTH_LONG).show();
        }
      }

      @Override
      public void onCancelled(@NonNull DatabaseError error) {
      }
    });
  }
  //Code to delete a Record
  public void delete(View view) {
    id = txtId.getText().toString();
    dbref = FirebaseDatabase.getInstance().getReference().child("Student").child(id);
    dbref.addListenerForSingleValueEvent(new ValueEventListener() {
      @Override
      public void onDataChange(@NonNull DataSnapshot snapshot) {
        if (snapshot.hasChildren()) {
          dbref.removeValue();
          Toast.makeText(getApplicationContext(), "Record Deleted",
Toast.LENGTH_LONG).show();
        } else {
          Toast.makeText(getApplicationContext(), "No such record",
Toast.LENGTH_LONG).show();
        }
      }
      @Override
      public void onCancelled(@NonNull DatabaseError error) {
      }
    });
```

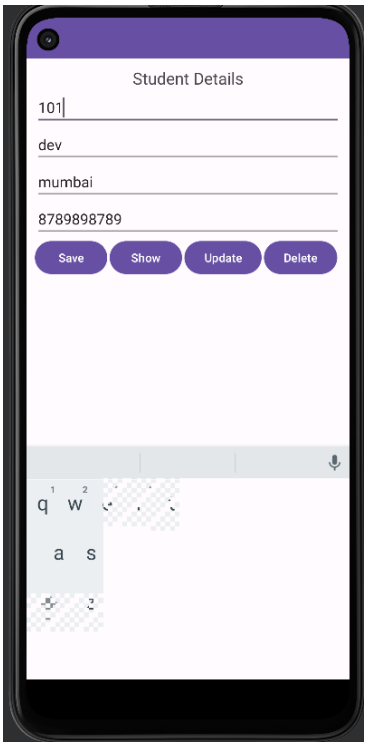
```
    }
}
```

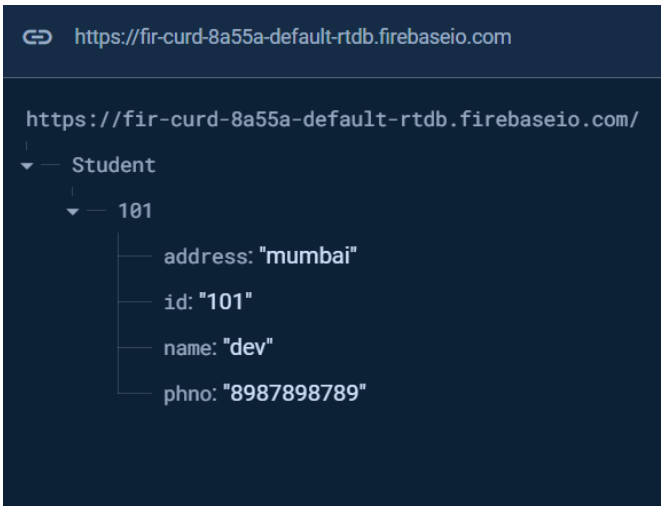
Student.java

```
package com.abhi.firebasecurd;

public class Student {
    private String ID;
    private String name;
    private String address;
    private String phno;

    public String getID() {
        return ID;
    }

    public void setID(String ID) {
        this.ID = ID;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public String getAddress() {
        return address;
    }

    public void setAddress(String address) {
        this.address = address;
    }

    public String getPhno() {
        return phno;
    }

    public void setPhno(String phno) {
        this.phno = phno;
    }

}
```

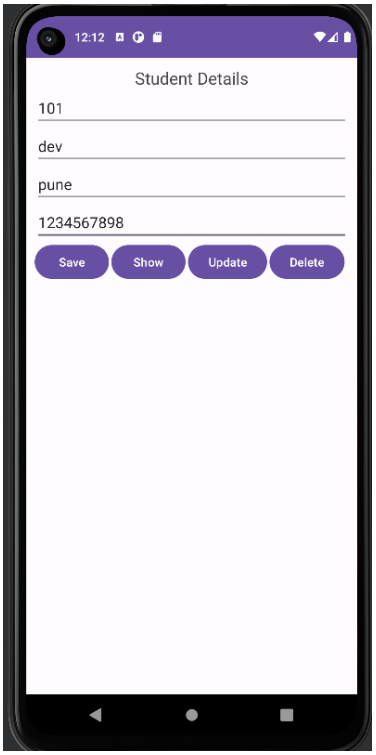
Output

ADD

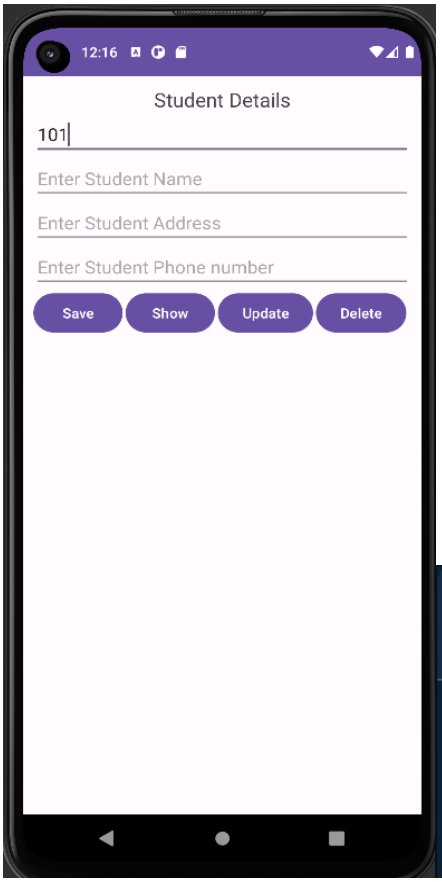


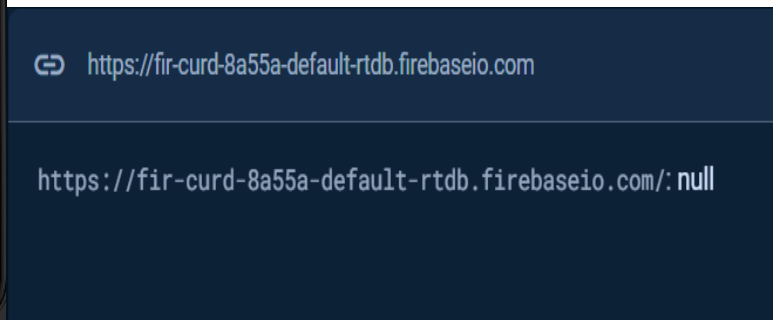


UPDATE

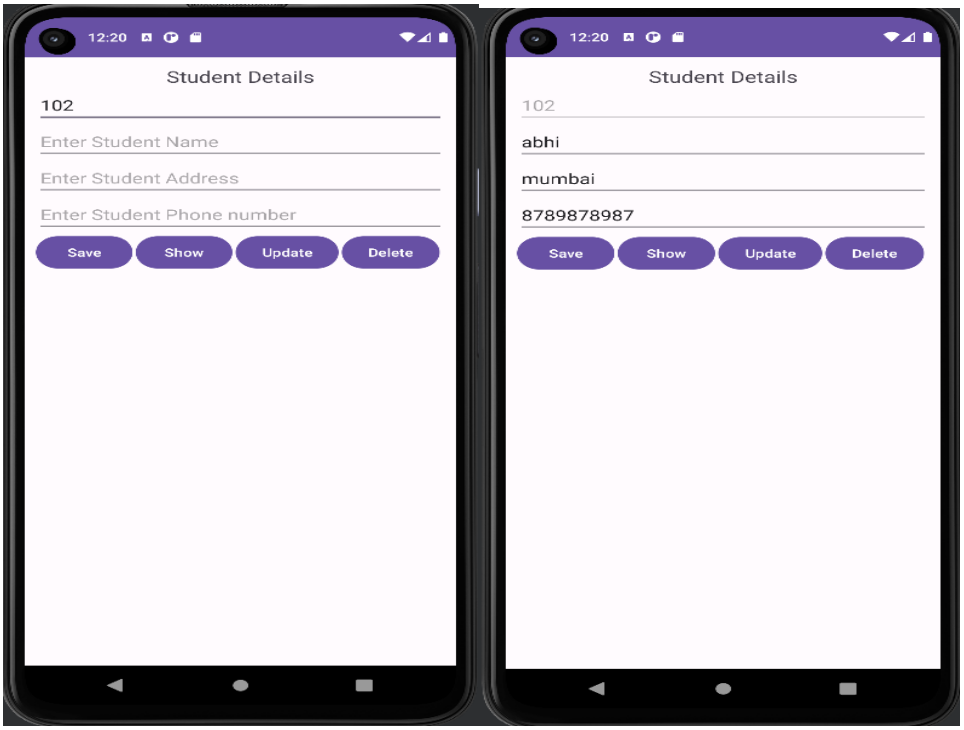


DELETE


12:16
Student Details
101
Enter Student Name
Enter Student Address
Enter Student Phone number
Save
Show
Update
Delete


https://fir-curd-8a55a-default-rtdb.firebaseio.com
https://fir-curd-8a55a-default-rtdb.firebaseio.com/: null

READ


12:20
Student Details
102
Enter Student Name
Enter Student Address
Enter Student Phone number
Save
Show
Update
Delete
12:20
Student Details
102
abhi
mumbai
8789878987
Save
Show
Update
Delete

Q.13. Write an android app to write JSON data into a file and read JSON data from created file.

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:layout_margin="10dp"
   android:orientation="vertical"
   tools:context=".MainActivity">

   <TextView
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:gravity="center_horizontal"
      android:text="Employee Details"
      android:textSize="20sp" />

   <EditText
      android:id="@+id/empId"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Enter Employee ID" />

   <EditText
      android:id="@+id/empName"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Enter Employee Name" />

   <EditText
      android:id="@+id/empAdd"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Enter Employee Address" />

   <EditText
      android:id="@+id/empPhno"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Enter Employee Phonenumber" />


   <LinearLayout
```

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">

    <Button
      android:id="@+id/btnSave"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:onClick="save"
      android:text="Save" />

    <Button
      android:id="@+id/btnShow"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginLeft="3dp"
      android:onClick="show"
      android:text="Show" />
  </LinearLayout>
  <TextView
    android:id="@+id/details"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="" />
</LinearLayout>
```

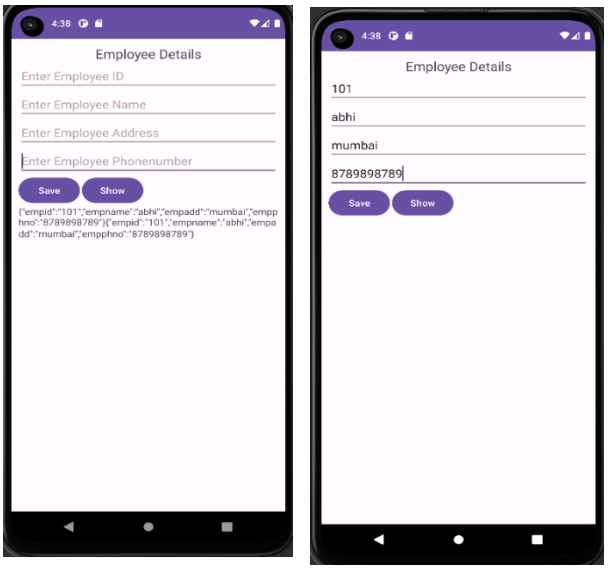
MainActivity.java

```
package com.abhi.jsondata;

import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
import org.json.JSONException;
import org.json.JSONObject;
import java.io.BufferedReader;
import java.io.BufferedWriter;
import java.io.File;
import java.io.FileNotFoundException;
import java.io.FileReader;
import java.io.FileWriter;
```

```
import java.io.IOException;

public class MainActivity extends AppCompatActivity {

   EditText txtId, txtName, txtAdd, txtphno;
   String id, name, add, phno;
   String FILE_NAME = "Employee_data";
   File file;
   FileWriter fileWriter;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      txtId = findViewById(R.id.empId);
      txtName = findViewById(R.id.empName);
      txtAdd = findViewById(R.id.empAdd);
      txtphno = findViewById(R.id.empPhno);
      // Define the File Path and its Name
      file = new File(getApplicationContext().getFilesDir(), FILE_NAME);
      try {
         fileWriter = new FileWriter(file, true);
      } catch (IOException e) {
         e.printStackTrace();
      }
   }
   public void save(View view) {
      id = txtId.getText().toString();
      name = txtName.getText().toString();
      add = txtAdd.getText().toString();
      phno = txtphno.getText().toString();
      JSONObject jsonObject = new JSONObject();
      try {
         jsonObject.put("empid", id);
         jsonObject.put("empname", name);
         jsonObject.put("empadd", add);
         jsonObject.put("empphno", phno);
      } catch (JSONException e) {
         e.printStackTrace();
      }
      String userString = jsonObject.toString();
      try {
         BufferedWriter bufferedWriter = new BufferedWriter(fileWriter);
         bufferedWriter.write(userString);
         bufferedWriter.close();

      } catch (IOException e) {
```

```
            e.printStackTrace();
        }
        txtId.setText("");
        txtName.setText("");
        txtAdd.setText("");
        txtphno.setText("");
    }
    public void show(View view) {
        TextView showdetails = findViewById(R.id.details);
        StringBuilder stringBuilder;
        FileReader fileReader = null;
        try {
            fileReader = new FileReader(file);
            BufferedReader bufferedReader = new BufferedReader(fileReader);
            stringBuilder = new StringBuilder();
            String line = bufferedReader.readLine();
            while (line != null) {
                stringBuilder.append(line).append("\n");
                line = bufferedReader.readLine();
            }
            bufferedReader.close();
            String response = stringBuilder.toString();
            showdetails.setText(response);
        } catch (FileNotFoundException e) {
            e.printStackTrace();
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

Output



Q.14. Write a React Native application, to display a welcome screen with ‘Welcome to React Native’ message.

App.js

```
import React from 'react';
import { View, Text, StyleSheet } from 'react-native';
export default function App() {
  return (
    <View style={styles.container}>
      <Text style={styles.welcomeText}>Welcome to React Native</Text>
    </View>
  );
}
const styles = StyleSheet.create({
  container: {
    flex: 1,
    justifyContent: 'center',
    alignItems: 'center',
    backgroundColor: '#fff',
  },
  welcomeText: {
    fontSize: 20,
    textAlign: 'center',
    margin: 10,
  },
});
```

Output:

Q.15. Write a Flutter application, to display a ‘Hello World’ message.

Main.dart

```
import 'package:flutter/material.dart';

void main() {
  runApp(MyApp());
}

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: Scaffold(
        appBar: AppBar(
          title: Text('Hello World App'),
        ),
        body: Center(
          child: Text(
            'Hello World!',
            style: TextStyle(fontSize: 24),
          ),
        ),
      ),
    );
  }
}
```

Output: