

MAD PROGRAMS

Week 1

Create "Hello World" application. That displays "Hello World" in the middle of the screen in the red color with white background.

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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!!!"
        android:textColor="#FF0000"

        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

MainActivity.java

```
package com.example.week_1;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

Week 2

To understand activity, Intent

- Create sample application with login module. (Check username and password)
- On successful login, go to the next screen. And on failing login, alert user using Toast
- Also pass username to the next screen.

activity_main.xml

```

<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" >

    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_marginTop="56dp"
        android:text="@string/Username"
        android:textAppearance="?android:attr/textAppearanceMedium" />

    <EditText
        android:id="@+id/editText1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/textView1"
        android:layout_alignParentRight="true"
        android:ems="10"
        android:inputType="text" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignRight="@+id/textView1"
        android:layout_below="@+id/textView1"
        android:layout_marginTop="48dp"
        android:text="@string/Password"
        android:textAppearance="?android:attr/textAppearanceMedium" />

    <EditText
        android:id="@+id/editText2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/textView2"
        android:layout_alignBottom="@+id/textView2"
        android:layout_alignLeft="@+id/editText1"
        android:ems="10"
        android:inputType="textPassword" >

        <requestFocus />
    </EditText>

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/editText2"
        android:layout_marginTop="68dp"
        android:layout_toLeftOf="@+id/editText2"
        android:text="@string/Login" />

    <Button
        android:id="@+id/button2"

```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/button1"
        android:layout_alignBottom="@+id/button1"
        android:layout_alignLeft="@+id/editText2"
        android:layout_marginLeft="42dp"
        android:text="@string/Cancel"/>

</RelativeLayout>

activity_second.xml

<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" >

    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_centerVertical="true"
        android:text="@string/Secondform"
        tools:context=".Second" />

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textView1"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="22dp"
        android:text="@string/Logout" />

</RelativeLayout>

```

MainActivity.java

```

package com.example.week_2;

import android.os.Bundle;
import android.annotation.SuppressLint;
import android.app.Activity;
import android.content.Intent;
import android.view.*;
import android.view.View.OnClickListener;
import android.widget.*;

public class MainActivity extends Activity implements OnClickListener{

    EditText name;
    EditText pass;
    Button login;
    Button cancel;

    @Override

```

```

protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    name=(EditText)findViewById(R.id.editText1);
    pass=(EditText)findViewById(R.id.editText2);
    login=(Button)findViewById(R.id.button1);
    cancel=(Button)findViewById(R.id.button2);
    login.setOnClickListener(this);
    cancel.setOnClickListener(this);
}

@SuppressWarnings({"ShowToast", "WrongConstant"})
@Override
public void onClick(View v) {
    String na=name.getText().toString();
    String pa=pass.getText().toString();
    switch(v.getId())
    {
        case R.id.button1:
            if(na.equals("teju") && pa.equals("root") || pa.equals("admin")){
                Intent i = new Intent(this,Second.class);
                i.putExtra("c1", na);
                startActivity(i);
            }
            else
            {
                Toast.makeText(this,"Check Username or Password",
3600).show();
            }
            break;

        case R.id.button2:
            name.setText("");
            pass.setText("");
            break;

        default:
            break;
    }
}
}

```

Second.java

```

package com.example.week_2;
import com.example.week_2.R;

import android.annotation.SuppressLint;
import android.os.Bundle;
import android.app.Activity;
import android.view.*;
import android.view.View.OnClickListener;
import android.widget.*;
import android.content.*;

```

```

public class Second extends Activity implements OnClickListener{

    Button Logout;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        Intent i=getIntent();
        String str = i.getStringExtra("c1");
        TextView t1 = (TextView )findViewById(R.id.textView1);
        t1.setText("Logged In Successfully ! "+str);
        Logout=(Button )findViewById(R.id.button1);
        Logout.setOnClickListener(this);
    }

    @Override
    public void onClick(View v1) {
        switch(v1.getId())
        {
            case R.id.button1:
                Intent i = new Intent(this,MainActivity.class);
                startActivity(i);
                finish();
                System.exit(0);
                break;

            default:
                break;
        }
    }
}

```

AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.week_2">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <activity android:name=".Second">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

```

```

        <category android:name="android.intent.category.DEFAULT" />
    </intent-filter>
</activity>
</application>

</manifest>

```

strings.xml

```

<resources>
    <string name="app_name">Week_2</string>
    <string name="Login">Login</string>
    <string name="Cancel">Cancel</string>
    <string name="Password">Enter Password</string>
    <string name="Username">Enter Username</string>
    <string name="Secondform">Second Form</string>
    <string name="Logout">Logout</string>
</resources>

```

Week 3

Create login application where you will have to validate Email ID (Username). Till the username and password is not validated, login button should remain disabled.

On successful login, open browser with an URL. And on failing login, alert using Toast.

activity_main.xml

```

<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" >

    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_marginTop="56dp"
        android:text="@string/Username"
        android:textAppearance="?android:attr/textAppearanceMedium" />

    <EditText
        android:id="@+id/editText1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/textView1"
        android:layout_alignParentRight="true"
        android:ems="10"
        android:inputType="text" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignRight="@+id/textView1"

```

```

        android:layout_below="@+id/textView1"
        android:layout_marginTop="48dp"
        android:text="@string/Password"
        android:textAppearance="?android:attr/textAppearanceMedium" />

<EditText
    android:id="@+id/editText2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/textView2"
    android:layout_alignBottom="@+id/textView2"
    android:layout_alignLeft="@+id/editText1"
    android:ems="10"
    android:inputType="textPassword" >

    <requestFocus />
</EditText>

<Button
    android:id="@+id/button1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/editText2"
    android:layout_marginTop="68dp"
    android:layout_toLeftOf="@+id/editText2"
    android:text="@string/Login" />

<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/button1"
    android:layout_alignBottom="@+id/button1"
    android:layout_alignLeft="@+id/editText2"
    android:layout_marginLeft="42dp"
    android:text="@string/Cancel"/>

</RelativeLayout>

```

MainActivity.java

```

package com.example.week_3;

import com.example.week_3.R;
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.annotation.SuppressLint;
import android.app.Activity;
import android.text.Editable;
import android.text.TextWatcher;
import android.view.*;
import android.view.View.OnClickListener;
import android.widget.*;

public class MainActivity extends Activity implements OnClickListener, TextWatcher{

    EditText name;

```

```

EditText pass;
Button login;
Button cancel;

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    name=(EditText)findViewById(R.id.editText1);
    name.addTextChangedListener(this);
    pass=(EditText)findViewById(R.id.editText2);
    pass.addTextChangedListener(this);
    login=(Button)findViewById(R.id.button1);
    cancel=(Button)findViewById(R.id.button2);
    login.setOnClickListener(this);
    cancel.setOnClickListener(this);
    login.setEnabled(false);
    cancel.setEnabled(true);
}

public void afterTextChanged(Editable arg0) {
}

public void beforeTextChanged(CharSequence arg0, int arg1, int arg2,int arg3)
{
}

public void onTextChanged(CharSequence arg0, int arg1, int arg2, int arg3) {

    String na=name.getText().toString();
    String pa=pass.getText().toString();

    if(na.equals("teju") && pa.equals("root") || pa.equals("admin"))
    {
        Button btn = (Button) findViewById(R.id.button1);
        btn.setEnabled(true);
    }
}

@SuppressLint("ShowToast")
@Override
public void onClick(View v) {
    String na=name.getText().toString();
    String pa=pass.getText().toString();
    switch(v.getId())
    {
        case R.id.button1:
            if(na.equals("teju") && pa.equals("root") || pa.equals("admin")) {
                Intent browserIntent = new Intent(Intent.ACTION_VIEW,
Uri.parse("http://www.google.com"));
                startActivity(browserIntent);
            }
            else {
                Toast.makeText(this,"Check Username or Password",
3600).show();
            }
        }
    }
}

```



```

        break;

    case R.id.button2:
        name.setText("");
        pass.setText("");
        break;

    default:

        break;

    }

}

}

```

strings.xml

```

<resources>
    <string name="app_name">Week_3</string>
    <string name="Login">Login</string>
    <string name="Cancel">Cancel</string>
    <string name="Password">Enter Password</string>
    <string name="Username">Enter Username</string>
</resources>

```

Week 4

Understanding fragments:

Create an application to add the fragments to an activity during runtime.

activity_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:orientation="vertical" >

    <Button
        android:id="@+id/btn_load"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Load Fragment"
        />

    <LinearLayout
        android:id="@+id/fragment_container"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        >
    </LinearLayout>

</LinearLayout>

```

MainActivity.java

```
package com.example.mad_app4;

import android.app.Activity;
import android.app.FragmentManager;
import android.app.FragmentTransaction;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;

public class MainActivity extends Activity {
    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Button btnLoad = (Button) findViewById(R.id.btn_Load);

        OnClickListener listener = new OnClickListener() {

            @Override
            public void onClick(View v) {
                FragmentManager fragmentManager = getFragmentManager();
                FragmentTransaction fragmentTransaction =
fragmentManager.beginTransaction();
                HelloFragment hello = new HelloFragment();
                fragmentTransaction.add(R.id.fragment_container, hello, "HELLO");
                fragmentTransaction.commit();
            }
        };

        btnLoad.setOnClickListener(listener);
    }
}
```

hello_fragment_layout.xml

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:text="This is a fragment"
        android:textColor="#FFF000"
        android:textSize="30dp"
        android:background="#FF0000" />

    <Space
        android:layout_width="match_parent"
```

```
        android:layout_height="10dp"/>

</LinearLayout>
```

HelloFragment.java

```
package com.example.mad_app4;

import android.app.Fragment;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class HelloFragment extends Fragment {
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState) {
        /** Inflating the layout for this fragment */
        View v = inflater.inflate(R.layout.hello_fragment_layout, null);
        return v;
    }
}
```

Week 5

Understanding dialog windows

Create an application to display the alert dialog.

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">

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/button"
        android:text="Close app"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

MainActivity.java

```
package com.example.mad_app5;

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

```

import android.os.Bundle;
import android.content.DialogInterface;
import android.view.View;
import android.widget.Button;
import android.app.AlertDialog;
import android.widget.Toast;

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

        closeButton = (Button) findViewById(R.id.button);
        builder = new AlertDialog.Builder(this);
        closeButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                //Uncomment the below code to Set the message and title from the
strings.xml file
                builder.setMessage(R.string.dialog_message)
                .setTitle(R.string.dialog_title);

                //Setting message manually and performing action on button click
                builder.setMessage("Do you want to close this application ?")
                    .setCancelable(false)
                    .setPositiveButton("Yes", new
DialogInterface.OnClickListener() {
                        public void onClick(DialogInterface dialog, int id) {
                            finish();
                            Toast.makeText(getApplicationContext(), "You choose
yes action for alertbox",
                                Toast.LENGTH_SHORT).show();
                        }
                    })
                    .setNegativeButton("No", new
DialogInterface.OnClickListener() {
                        public void onClick(DialogInterface dialog, int id) {
                            // Action for 'NO' Button
                            dialog.cancel();
                            Toast.makeText(getApplicationContext(), "You choose
no action for alertbox",
                                Toast.LENGTH_SHORT).show();
                        }
                    });
                //Creating dialog box
                AlertDialog alert = builder.create();
                //Setting the title manually
                alert.setTitle("AlertDialogExample");
                alert.show();
            }
        });
    }
}

```

strings.xml

```
<resources>
    <string name="app_name">MAD_App5</string>
    <string name="dialog_message">Hello!!!</string>
    <string name="dialog_title">Welcome Message</string>
</resources>
```

Week 6

Understanding dialog windows

Create an application to display the progress dialog.

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">

    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="WELCOME!!" />

    <Button
        android:id="@+id/button"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="CLICK TO COPY" />

</LinearLayout>
```

MainActivity.java

```
package com.example.mad_app6;

import androidx.appcompat.app.AppCompatActivity;
import android.app.ProgressDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

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

        Button button = (Button) findViewById(R.id.button);
```

```

        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showProgress(v);
            }
        });
    }
    ProgressDialog progressDialog;

    public void showProgress(View view){
        progressDialog = new ProgressDialog(this);
        progressDialog.setTitle("Your file is being copied!");
        progressDialog.setMessage("Wait..");
        progressDialog.setProgressStyle(ProgressDialog.STYLE_HORIZONTAL);
        progressDialog.setProgress(0);
        new Thread(new Runnable() {
            @Override
            public void run() {
                for(int i=1 ; i<=10 ; i++){
                    try{
                        Thread.sleep(1000);
                        progressDialog.incrementProgressBy(10);
                    }catch (InterruptedException e){
                        e.printStackTrace();
                    }
                }
                progressDialog.dismiss();
            }
        }).start();
        progressDialog.setButton(progressDialog.BUTTON_POSITIVE, "OK", new
        DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                Toast.makeText(getApplicationContext(), "OK Clicked" ,
                Toast.LENGTH_LONG).show();
            }
        });
        progressDialog.show();
    }
}

```

Week 7

Adapter views in android:

Create spinner with strings taken from resource folder (res >> value folder). On changing spinner value, change Image

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"
    tools:context=".MainActivity" >

    <Spinner

```

```

        android:id="@+id/spinner1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:entries="@array/img"
    />

    <ImageView
        android:id="@+id/imageView1"
        android:layout_width="fill_parent"
        android:layout_height="fill_parent"
        android:layout_marginTop="32dp"/>

</RelativeLayout>

MainActivity.java

package com.example.mad_app7;

import android.app.Activity;
import android.os.Bundle;
import android.view.View;
import android.widget.*;
import android.widget.AdapterView.OnItemClickListener;

public class MainActivity extends Activity implements OnItemSelectedListener {
    /** Called when the activity is first created. */
    Spinner sp;
    ImageView img;
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        sp=(Spinner)findViewById(R.id.spinner1);
        sp.setOnItemClickListener(this);
        img=(ImageView)findViewById(R.id.imageView1);

    }

    Integer[] aIDS={
        R.drawable.Logo11,
        R.drawable.Logo1,
        R.drawable.Logo8,
        R.drawable.Logo5};

    @Override
    public void onItemClick(AdapterView<?> arg0, View arg1, int arg2, long
arg3) {
        img.setImageResource(aIDS[arg2]);
    }

    @Override
    public void onNothingSelected(AdapterView<?> arg0) {

    }
}

```

arrays.xml

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <string-array name="img">
        <item>Image 1</item>
        <item>Image 2</item>
        <item>Image 3</item>
        <item>Image 4</item>
    </string-array>
</resources>
```

Week 8

Image views in android:

Create an application to display a set of images using Grid view and then display the selected Image in another screen.

activity_main.xml

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

    <GridView
        android:id="@+id/simpleGridView"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:footerDividersEnabled="false"
        android:padding="1dp"
        android:numColumns="3" />
</LinearLayout>
```

MainActivity.java

```
package com.example.mad_app8;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.GridView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    GridView simpleGrid;
    int logos[] = {R.drawable.Logo1,
        R.drawable.Logo2,
        R.drawable.Logo3, R.drawable.Logo4,
        R.drawable.Logo5, R.drawable.Logo6, R.drawable.Logo7,
        R.drawable.Logo8, R.drawable.Logo9,
        R.drawable.Logo10, R.drawable.Logo11, R.drawable.Logo12,
        R.drawable.Logo13};
```



```

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    simpleGrid = (GridView) findViewById(R.id.simpleGridView); // init
GridView
    // Create an object of CustomAdapter and set Adapter to GridView
    CustomAdapter customAdapter = new CustomAdapter(getApplicationContext(),
logos);
    simpleGrid.setAdapter(customAdapter);
    // implement setOnItemClickListener event on GridView
    simpleGrid.setOnItemClickListener(new AdapterView.OnItemClickListener() {
        @Override
        public void onItemClick(AdapterView<?> parent, View view, int
position, long id) {
            // set an Intent to Another Activity
            Intent intent = new Intent(MainActivity.this,
SecondActivity.class);
            intent.putExtra("image", logos[position]); // put image data in
Intent
            startActivity(intent); // start Intent
        }
    });
}
}

```

activity_second.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:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    android:background="#fff"
    tools:context="com.example.mad_app8.SecondActivity">

    <ImageView
        android:id="@+id/selectedImage"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:scaleType="fitXY" />
</RelativeLayout>

```

SecondActivity.java

```

package com.example.mad_app8;

import android.content.Intent;
import android.os.Bundle;
import android.widget.ImageView;
import androidx.appcompat.app.AppCompatActivity;

public class SecondActivity extends AppCompatActivity {

```

```

    ImageView selectedImage;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        selectedImage = findViewById(R.id.selectedImage); // init a ImageView
        Intent intent = getIntent(); // get Intent which we set from Previous
        Activity
        selectedImage.setImageResource(intent.getIntExtra("image", 0)); // get
        image from Intent and set it in ImageView
    }
}

```

activity_gridview.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:padding="1dp"
    android:orientation="vertical">

    <ImageView
        android:id="@+id/icon"
        android:layout_width="match_parent"
        android:layout_height="120dp"
        android:scaleType="fitXY"
        android:layout_gravity="center_horizontal"
        android:src="@drawable/logo1" />
</LinearLayout>

```

CustomAdapter.java

```

package com.example.mad_app8;

import android.annotation.SuppressLint;
import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.ImageView;

public class CustomAdapter extends BaseAdapter {
    Context context;
    int[] logos;
    LayoutInflater inflater;

    public CustomAdapter(Context applicationContext, int[] logos) {
        this.context = applicationContext;
        this.logos = logos;
        inflater = (LayoutInflater.from(applicationContext));
    }

    @Override
    public int getCount() {
        return logos.length;
    }
}

```

```

@Override
public Object getItem(int i) {
    return null;
}

@Override
public long getItemId(int i) {
    return 0;
}

@SuppressLint({"InflateParams", "ViewHolder"})
@Override
public View getView(int i, View view, ViewGroup viewGroup) {
    view = inflater.inflate(R.layout.activity_gridview, null); // inflate the
Layout
    ImageView icon = view.findViewById(R.id.icon); // get the reference of
ImageView
    icon.setImageResource(logos[i]); // set Logo images
    return view;
}
}

```

AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.mad_app8">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <activity android:name="com.example.mad_app8.SecondActivity" />
    </application>

</manifest>

```

dimens.xml (In values folder)

```

<?xml version="1.0" encoding="utf-8"?>
<resources>
    <dimen name="activity_horizontal_margin">16dp</dimen>
    <dimen name="activity_vertical_margin">16dp</dimen>
</resources>

```

strings.xml

```

<resources>
    <string name="app_name">MAD_App8</string>
    <string name="hello_world">Hello world!</string>
    <string name="action_settings">Settings</string>
</resources>

```

Week 9

Understanding Menu options:

Create an application that will change based on selected options from the menu.

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"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView4"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="welcome to main activity" />
</LinearLayout>

```

MainActivity.java

```

package com.example.mad_app9;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;

public class MainActivity extends AppCompatActivity {

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

    @Override
    public boolean onCreateOptionsMenu(Menu menu){
        MenuInflater inflater = getMenuInflater();
        inflater.inflate(R.menu.main , menu);
        return true;
    }

    @Override
    public boolean onOptionsItemSelected(MenuItem item){
        int id = item.getItemId();
        if(id == R.id.id_profile) {

```

```

        Intent intentprofile = new Intent(MainActivity.this , profile.class);
        startActivity(intentprofile);
        return true;
    }
    if(id == R.id.id_settings){
        Intent intentsettings = new Intent(MainActivity.this ,
settings.class);
        startActivity(intentsettings);
        return true;
    }
    if(id == R.id.id_download){
        Intent intentdownload = new Intent(MainActivity.this ,
download.class);
        startActivity(intentdownload);
        return true;
    }
    return false;
}
}
}

```

AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.mad_app9">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <activity android:name=".profile">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.DEFAULT" />
            </intent-filter>
        </activity>
        <activity android:name=".settings">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.DEFAULT" />
            </intent-filter>
        </activity>
        <activity android:name=".download">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

```

```

        <category android:name="android.intent.category.DEFAULT" />
    </intent-filter>
</activity>
</application>

</manifest>

```

activity_profile.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"
    tools:context=".profile">

    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="welcome to profile activity" />
</LinearLayout>

```

profile.java

```

package com.example.mad_app9;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

public class profile extends AppCompatActivity {

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

```

activity_settings.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"
    tools:context=".settings">

    <TextView
        android:id="@+id/textView3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"

```

```
        android:text="welcome to settings activity" />
</LinearLayout>
```

settings.java

```
package com.example.mad_app9;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

public class settings extends AppCompatActivity {

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

activity_download.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"
    tools:context=".download">

    <TextView
        android:id="@+id/textView2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="welcome to download activity" />
</LinearLayout>
```

download.java

```
package com.example.mad_app9;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

public class download extends AppCompatActivity {

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

main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:app="http://schemas.android.com/apk/res-auto"
      xmlns:android="http://schemas.android.com/apk/res/android">
    <item android:id="@+id/id_profile"
          android:title="Profile"
          android:orderInCategory="100"
          app:showAsAction="never" />
    <item android:id="@+id/id_settings"
          android:title="Settings"
          android:orderInCategory="101"
          app:showAsAction="never" />
    <item
          android:title="Download"
          android:id="@+id/id_download"
          android:orderInCategory="102"
          app:showAsAction="never" >
    </item>
</menu>

```

Week 10

- Create an application to write and read the contents of a file stored on internal memory.

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">

    <TextView
        android:id="@+id/username"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="UserName" />

    <EditText
        android:id="@+id/usernameEt"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="Enter Username" />

    <TextView
        android:id="@+id/password"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Password" />

    <EditText
        android:id="@+id/passEt"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"

```



```

        android:inputType="textPersonName"
        android:hint="Enter password" />

<Button
    android:id="@+id/button"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:onClick="storeFile"
    android:text="STORE FILE" />

<Button
    android:id="@+id/button1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:onClick="loadFile"
    android:text="LOAD FILE" />

<TextView
    android:id="@+id/loadpreftv"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="" />
</LinearLayout>

```

MainActivity.java

```

package com.example.mad_app10internal;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.os.FileObserver;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.InputStreamReader;

public class MainActivity extends AppCompatActivity {
    EditText uname , password;
    TextView loadTxt;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        uname = (EditText) findViewById(R.id.unameEt);
        password = (EditText) findViewById(R.id.passEt);
        loadTxt = (TextView) findViewById(R.id.loadpreftv);
    }
    public void storeFile(View view){
        try{

```

```

        File fDir = getFilesDir();
        File f = new File(fDir , "sample.txt");
        FileOutputStream fos = new FileOutputStream(f);
        String myText = uname.getText().toString() + " " +
password.getText().toString();
        fos.write(myText.getBytes());
        fos.close();
    } catch (FileNotFoundException e){
        e.printStackTrace();
    } catch (IOException e){
        e.printStackTrace();
    }
    Toast.makeText(getApplicationContext() , "Data stored successfully!
",Toast.LENGTH_LONG).show();
}

public void loadFile(View view){
    String result = null;
    try{
        FileInputStream fis =
getApplicationContext().openFileInput("sample.txt");
        InputStreamReader isr = new InputStreamReader(fis);
        BufferedReader br = new BufferedReader(isr);
        result = br.readLine();
    } catch (FileNotFoundException e){
        e.printStackTrace();
    } catch (IOException e){
        e.printStackTrace();
    }
    Toast.makeText(getApplicationContext() , "Result: "+result ,
Toast.LENGTH_LONG).show();
}
}

```

Week 10

- b. Create an application to create a file on external memory and read file from the sdcard and display that file content to the screen.

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">

    <TextView
        android:id="@+id/username"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="UserName" />

    <EditText
        android:id="@+id/unameEt"

```

```

        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="Enter Username" />

<TextView
    android:id="@+id/password"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Password" />

<EditText
    android:id="@+id/passEt"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:hint="Enter password" />

<Button
    android:id="@+id/button"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:onClick="storeToExternal"
    android:text="STORE FILE" />

<Button
    android:id="@+id/button1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:onClick="loadFromExternal"
    android:text="LOAD FILE" />

<TextView
    android:id="@+id/loadprefTV"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="" />

</LinearLayout>

```

MainActivity.java

```

package com.example.mad_app10external;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.os.Environment;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;

```

```

import java.io.IOException;
import java.io.InputStreamReader;

public class MainActivity extends AppCompatActivity {
    EditText uname , password;
    TextView loadTxt;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        uname = (EditText) findViewById(R.id.unameEt);
        password = (EditText) findViewById(R.id.passEt);
        loadTxt = (TextView) findViewById(R.id.loadprefTV);
    }

    public void storeToExternal(View view){

        if(Environment.getExternalStorageState().equals(Environment.MEDIA_MOUNTED)){
            File file = new File(getExternalFilesDir(null),"sample.txt");
            try{
                FileOutputStream fos = new FileOutputStream(file);
                String myText = uname.getText().toString() + "
"+password.getText().toString();
                fos.write(myText.getBytes());
                fos.close();
            }catch(FileNotFoundException e){
                e.printStackTrace();
            } catch (IOException e){
                e.printStackTrace();
            }
            Toast.makeText(getApplicationContext(),"Data stored successfully!" ,
Toast.LENGTH_LONG).show();
        }
        else{
            Toast.makeText(getApplicationContext(),"Not
mounted!",Toast.LENGTH_LONG).show();
        }
    }

    public void loadFromExternal(View view){

        if(Environment.getExternalStorageState().equals(Environment.MEDIA_MOUNTED)){
            File file = new File(getExternalFilesDir(null) , "sample.txt");
            String result = null;
            try{
                FileInputStream fis = new FileInputStream(file);
                InputStreamReader isr = new InputStreamReader(fis);
                BufferedReader br = new BufferedReader(isr);
                result = br.readLine();
            }catch (FileNotFoundException e){
                e.printStackTrace();
            } catch (IOException e){
                e.printStackTrace();
            }
            Toast.makeText(getApplicationContext(),"Result: "+result ,
Toast.LENGTH_LONG).show();
        }
        else{

```

```

        Toast.makeText(getApplicationContext(), "Not mounted!",
        Toast.LENGTH_LONG).show();
    }
}
}

```

Week 11

SQLite Database:

Create an application to make Insert, Update, Delete and retrieve operation on the database.

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"
    tools:context="com.example.mad_app11.MainActivity"
    android:orientation="vertical">

    <ListView
        android:id="@+id/lv_list"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1" />

    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content">
        <Button
            android:id="@+id/btn_add"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="ADD"
            android:ems="10"
            android:layout_centerHorizontal="true" />

    </RelativeLayout>

</LinearLayout>

```

activity_employee_detail.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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="com.example.mad_app11.EmployeeDetail"
    android:orientation="vertical">

    <TextView
        android:id="@+id/tv_name2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="@string/name"

```

```

        android:textStyle="bold"
        android:textSize="18sp"/>

<TextView
    android:id="@+id/tv_dname"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<TextView
    android:id="@+id/tv_address2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="@string/address"
    android:textStyle="bold"
    android:textSize="18sp"/>

<TextView
    android:id="@+id/tv_daddress"
    android:layout_width="match_parent"
    android:layout_height="wrap_content" />

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

    <Button
        android:id="@+id/btn_uback"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="@string/back"
        tools:ignore="ButtonStyle" />

    <Button
        android:id="@+id/btn_delete"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="@string/delete"
        tools:ignore="ButtonStyle" />

    <Button
        android:id="@+id/btn_edit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="@string/edit"
        tools:ignore="ButtonStyle" />
</LinearLayout>

```

</LinearLayout>

activity_registration.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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="com.example.mad_app11.Registration">
<TextView
    android:id="@+id/tv_firstname"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Firstname"
    android:textSize="25sp"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="64dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentStart="true"
/>

<EditText
    android:id="@+id/et_firstname"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="text"
    android:layout_toRightOf="@+id/tv_firstname"
    android:layout_marginTop="55dp"
    android:layout_alignParentTop="true"
    android:layout_alignParentRight="true"
/>

<TextView
    android:id="@+id/tv_lastname"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Lastname"
    android:textSize="25sp"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="30dp"
    android:layout_alignParentLeft="true"
    android:layout_alignParentStart="true"
    android:layout_below="@id/tv_firstname"/>

<EditText
    android:id="@+id/et_lastname"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:layout_toRightOf="@+id/tv_lastname"
    android:layout_marginTop="15dp"
    android:layout_alignParentRight="true"
    android:layout_below="@+id/et_firstname"
/>

<TextView
    android:id="@+id/tv_address"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Address"
```

```

        android:textSize="25sp"
        android:layout_marginLeft="40dp"
        android:layout_marginTop="30dp"
        android:layout_alignParentLeft="true"
        android:layout_alignParentStart="true"
        android:layout_below="@id/tv_lastname"/>

<EditText
    android:id="@+id/et_address"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:layout_toRightOf="@+id/tv_address"
    android:layout_marginTop="15dp"
    android:layout_alignParentRight="true"
    android:layout_below="@+id/et_lastname"
/>

<Button
    android:id="@+id/btn_regsave"
    android:layout_height="wrap_content"
    android:layout_width="wrap_content"
    android:layout_marginRight="20dp"
    android:layout_alignParentRight="true"
    android:layout_below="@+id/tv_address"
    android:text="SAVE"
    android:ems="10"
    android:layout_marginTop="30dp"/>

<Button
    android:id="@+id/btn_regback"
    android:layout_height="wrap_content"
    android:layout_width="wrap_content"
    android:layout_marginLeft="20dp"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/tv_address"
    android:text="BACK"
    android:ems="10"
    android:layout_marginTop="30dp"/>
</RelativeLayout>

```

activity_update_employee.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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="com.example.mad_app11.UpdateEmployee"
    android:orientation="vertical">

    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="@string/First_name"
    >

```



```

        android:textStyle="bold"
        android:textSize="18sp"/>

<EditText
    android:id="@+id/u_FirstName"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:ellipsize="end"
    android:inputType="text"
    tools:ignore="LabelFor" />

<TextView
    android:id="@+id/textView2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="@string/lastname"
    android:textStyle="bold"
    android:textSize="18sp"/>

<EditText
    android:id="@+id/et_ulaname"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:ellipsize="end"
    android:inputType="text"
    tools:ignore="LabelFor" />

<TextView
    android:id="@+id/textView3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="@string/address"
    android:textStyle="bold"
    android:textSize="18sp"/>

<EditText
    android:id="@+id/u_address"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:ellipsize="end"
    android:inputType="text"
    tools:ignore="LabelFor" />

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

    <Button
        android:id="@+id/btn_back"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="@string/back"
        tools:ignore="ButtonStyle" />

```

```

        <Button
            android:id="@+id/btn_update"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="@string/update"
            tools:ignore="ButtonStyle" />
    </LinearLayout>

</LinearLayout>

```

employee_list.xml

```

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

    <TextView
        android:id="@+id/tv_name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="20sp"
        android:padding="5dp"/>

    <TextView
        android:id="@+id/tv_address"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:padding="5dp"/>
</LinearLayout>

```

MainActivity.java

```

package com.example.mad_app11;

import android.content.Intent;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import android.view.View;
import android.widget.AdapterView;
import android.widget.Button;
import android.widget.ListView;
import java.util.Comparator;

public class MainActivity extends AppCompatActivity {
    DataBase database;
    Button btn_add;
    ListView lv_list;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        database = new DataBase(this);
    }
}

```

```

        btn_add = (Button)findViewById(R.id.btn_add);
        lv_list = (ListView)findViewById(R.id.lv_list);

        EmployeeListAdapter employeeListAdapter = new EmployeeListAdapter(this,
database.DisplayAll());
        employeeListAdapter.sort(new Comparator<Employee>() {
            @Override
            public int compare(Employee lhs, Employee rhs) {
                return lhs.getLastname().compareTo(rhs.getLastname());
            }
        });
        lv_list.setAdapter(employeeListAdapter);
        lv_list.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int
position, long id) {
                Employee employee = database.DisplayAll().get(position);
                Intent intent = new Intent(MainActivity.this,
EmployeeDetail.class);
                intent.putExtra("employee", employee);
                startActivity(intent);
            }
        });
        btn_add.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(MainActivity.this, Registration.class);
                startActivity(intent);
            }
        });
    }
}

```

DataBase.java

```

package com.example.mad_app11;

import android.annotation.SuppressLint;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import java.util.ArrayList;
import java.util.List;

public class DataBase extends SQLiteOpenHelper{
    public static final String DATABASE_NAME = "employee.db";
    public static final String TABLE_NAME = "tbl_employee";

    public DataBase(Context context) {
        super(context, DATABASE_NAME, null, 1);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {

```

```

        db.execSQL("CREATE TABLE " + TABLE_NAME + "(ID INTEGER PRIMARY KEY
AUTOINCREMENT, firstname TEXT, lastname TEXT, address TEXT)");
    }

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

    public boolean InsertData(Employee employee){
        try {
            SQLiteDatabase db = getWritableDatabase();
            ContentValues contentValues = new ContentValues();
            contentValues.put("firstname", employee.getFirstname());
            contentValues.put("lastname", employee.getLastname());
            contentValues.put("address", employee.getAddress());
            long result = db.insert(TABLE_NAME, null, contentValues);
            db.close();
            return result != -1;
        } catch (Exception e){
            return false;
        }
    }

    public List<Employee> DisplayAll(){
        try{
            List<Employee> employees = new ArrayList<>();
            SQLiteDatabase sqliteDatabase = getWritableDatabase();
            @SuppressWarnings("Recycle") Cursor cursor =
sqliteDatabase.rawQuery("SELECT * FROM " + TABLE_NAME, null);
            if(cursor.moveToFirst()){
                do{
                    Employee employee = new Employee();
                    employee.setId(cursor.getInt(0));
                    employee.setFirstname(cursor.getString(1));
                    employee.setLastname(cursor.getString(2));
                    employee.setAddress(cursor.getString(3));
                    employees.add(employee);
                }while (cursor.moveToNext());
            }
            sqliteDatabase.close();
            return employees;
        } catch (Exception e){
            return null;
        }
    }

    public boolean Delete(int id){
        try{
            SQLiteDatabase db = getWritableDatabase();
            int row = db.delete(TABLE_NAME, "ID = ?", new
String[]{String.valueOf(id)});
            db.close();
            return row > 0;
        } catch (Exception e){
            return false;
        }
    }

```

```

    }

    public boolean Update(Employee employee){
        try {
            SQLiteDatabase db = getWritableDatabase();
            ContentValues contentValues = new ContentValues();
            contentValues.put("firstname", employee.getFirstname());
            contentValues.put("lastname", employee.getLastname());
            contentValues.put("address", employee.getAddress());
            int row = db.update(TABLE_NAME, contentValues, "ID = ?", new
String[] {String.valueOf(employee.getId())});
            db.close();
            return row > 0;
        } catch (Exception e){
            return false;
        }
    }
}

```

Employee.java

```

package com.example.mad_app11;

import java.io.Serializable;

public class Employee implements Serializable{
    private int id;
    private String firstname;
    private String lastname;
    private String address;
    public int getId() {
        return id;
    }
    public void setId(int id) {
        this.id = id;
    }
    public String getFirstname() {
        return firstname;
    }
    public void setFirstname(String firstname) {
        this.firstname = firstname;
    }
    public String getLastname() {
        return lastname;
    }

    public void setLastname(String lastname) {
        this.lastname = lastname;
    }

    public String getAddress() {
        return address;
    }

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

```

```

    public Employee(int id, String firstname, String lastname, String address) {
        this.id = id;
        this.firstname = firstname;
        this.lastname = lastname;
        this.address = address;
    }

    public Employee() {
    }
}

```

EmployeeDetails.java

```

package com.example.mad_app11;

import android.annotation.SuppressLint;
import android.content.DialogInterface;
import android.content.Intent;
import android.os.Bundle;
import android.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

public class EmployeeDetail extends AppCompatActivity {

    @SuppressWarnings("SetTextI18n")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_employee_detail);

        final Employee employee = (Employee)
getIntent().getSerializableExtra("employee");
        TextView tv_dname = (TextView) findViewById(R.id.tv_dname);
        TextView tv_daddress = (TextView) findViewById(R.id.tv_daddress);
        Button btn_back = (Button) findViewById(R.id.btn_uback);
        Button btn_edit = (Button) findViewById(R.id.btn_edit);
        Button btn_delete = (Button) findViewById(R.id.btn_delete);
        tv_dname.setText(employee.getFirstname() + " " + employee.getLastname());
        tv_daddress.setText(employee.getAddress());

        btn_back.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(EmployeeDetail.this,
MainActivity.class);
                startActivity(intent);
            }
        });

        btn_edit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(EmployeeDetail.this,
UpdateEmployee.class);

```

```

        intent.putExtra("employee", employee);
        startActivity(intent);
    }
});

btn_delete.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(final View v) {
        final AlertDialog.Builder builder = new
AlertDialog.Builder(v.getContext());
        builder.setTitle("Confirmation");
        builder.setMessage("Are you sure you want to delete this
record?");
        builder.setPositiveButton("Yes", new
DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                DataBase database = new DataBase(getContext());
                if(database.Delete(employee.getId())){
                    Intent intent = new Intent(EmployeeDetail.this,
MainActivity.class);
                    startActivity(intent);
                }else{
                    AlertDialog.Builder builder1 = new
AlertDialog.Builder(getContext());
                    builder1.setMessage("Fail");
                    builder1.setCancelable(false);
                    builder1.setPositiveButton("OK", new
DialogInterface.OnClickListener() {
                        @Override
                        public void onClick(DialogInterface dialog, int
which) {
                            dialog.cancel();
                        }
                    });
                    builder1.create().show();
                }
            }
        });
        builder.setNegativeButton("No", new
DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                dialog.cancel();
            }
        });
        builder.create().show();
    }
});
});
}
}
}

```

EmployeeListAdapter.java

```

package com.example.mad_app11;

import android.annotation.SuppressLint;
import android.content.Context;

```

```

import androidx.annotation.NonNull;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ArrayAdapter;
import android.widget.TextView;
import com.example.mad_app11.Employee;
import com.example.mad_app11.R;
import java.util.List;

/**
 * Created by Arvin on 3/28/2018.
 */

public class EmployeeListAdapter extends ArrayAdapter<Employee> {

    private Context context;
    private List<Employee> employees;

    public EmployeeListAdapter(Context context, List<Employee> employees){
        super(context, R.layout.employee_list, employees);
        this.context = context;
        this.employees = employees;
    }

    @SuppressWarnings("SetTextI18n")
    @NonNull
    @Override
    public View getView(int position, View convertView, @NonNull ViewGroup parent)
    {
        LayoutInflater inflater =
        (LayoutInflater)context.getSystemService(Context.LAYOUT_INFLATER_SERVICE);
        assert inflater != null;
        @SuppressWarnings("ViewHolder") View view =
        inflater.inflate(R.layout.employee_list, parent, false);
        TextView tv_name = (TextView)view.findViewById(R.id.tv_name);
        TextView tv_address = (TextView)view.findViewById(R.id.tv_address);
        tv_name.setText("Name: " + employees.get(position).getFirstname() + " " +
employees.get(position).getLastName());
        tv_address.setText("Address: " + employees.get(position).getAddress());

        return view;
    }
}

```

Registration.java

```

package com.example.mad_app11;

import android.content.Intent;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

```



```

public class Registration extends AppCompatActivity {
    DataBase database;
    EditText et_regfirstname, et_reglastname, et_regaddress;
    Button btn_regsave, btn_regback;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_registration);
        database = new DataBase(this);
        et_regfirstname = (EditText)findViewById(R.id.et_firstname);
        et_reglastname = (EditText)findViewById(R.id.et_lastname);
        et_regaddress = (EditText)findViewById(R.id.et_address);
        btn_regsave = (Button)findViewById(R.id.btn_regsave);
        btn_regback = (Button)findViewById(R.id.btn_regback);
        btn_regsave.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String firstname = et_regfirstname.getText().toString();
                String lastname = et_reglastname.getText().toString();
                String address = et_regaddress.getText().toString();
                if(!firstname.equals("") || !lastname.equals("") ||
!address.equals("")){
                    Employee employee = new Employee();
                    employee.setFirstname(firstname);
                    employee.setLastname(lastname);
                    employee.setAddress(address);

                    if (database.InsertData(employee)) {
                        Toast.makeText(Registration.this, "Successfully Inserted
Data", Toast.LENGTH_SHORT).show();
                        et_regfirstname.setText("");
                        et_reglastname.setText("");
                        et_regaddress.setText("");
                    }
                }else{
                    Toast.makeText(Registration.this, "Please complete the
required field!", Toast.LENGTH_SHORT).show();
                }
            }
        });

        btn_regback.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(Registration.this, MainActivity.class);
                startActivity(intent);
            }
        });
    }
}

```

UpdateEmployee.java

```

package com.example.mad_app11;

import android.content.DialogInterface;
import android.content.Intent;

```

```

import android.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class UpdateEmployee extends AppCompatActivity {
    private EditText et_ufirstname, et_ulastname, et_uaddress;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_update_employee);
        final DataBase db = new DataBase(getBaseContext());
        final Employee employee =
(Employee) getIntent().getSerializableExtra("employee");
        et_ufirstname = (EditText) findViewById(R.id.u_FirstName);
        et_ulastname = (EditText) findViewById(R.id.et_ulastname);
        et_uaddress = (EditText) findViewById(R.id.u_address);
        Button btn_back = (Button) findViewById(R.id.btn_back);
        Button btn_update = (Button) findViewById(R.id.btn_update);
        et_ufirstname.setText(employee.getFirstname());
        et_ulastname.setText(employee.getLastname());
        et_uaddress.setText(employee.getAddress());
        et_ufirstname.setSelection(et_ufirstname.getText().length());
        et_ulastname.setSelection(et_ulastname.getText().length());
        et_uaddress.setSelection(et_uaddress.getText().length());

        btn_back.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(UpdateEmployee.this,
EmployeeDetail.class);
                intent.putExtra("employee", employee);
                startActivity(intent);
            }
        });

        btn_update.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String firstname = et_ufirstname.getText().toString();
                String lastname = et_ulastname.getText().toString();
                String address = et_uaddress.getText().toString();

                employee.setFirstname(firstname);
                employee.setLastname(lastname);
                employee.setAddress(address);

                if(db.Update(employee)){
                    //Toast.makeText(UpdateEmployee.this, "SUCCESS!",
Toast.LENGTH_SHORT).show();
                    AlertDialog.Builder builder = new
AlertDialog.Builder(v.getContext());
                    builder.setTitle("System");
                    builder.setMessage("SUCCESSFULLY UPDATED");
                    builder.setCancelable(false);

```

```

        builder.setPositiveButton("OK", new
DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                Intent intent = new Intent(UpdateEmployee.this,
MainActivity.class);
                startActivity(intent);
            }
        });
        builder.create().show();
    }else{
        Toast.makeText(UpdateEmployee.this, "FAILED!",
Toast.LENGTH_SHORT).show();
    }
}
});
}
}

```

Week 12

Understanding content providers and permissions:

Create an application to read phonebook contacts using content providers and display in list.

activity_main.xml

```

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/name"
        android:layout_marginLeft="100dp"
        android:layout_marginTop="100dp"
        android:layout_marginStart="100dp" />
    <EditText
        android:id="@+id/txtName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="100dp"
        android:ems="10"
        android:autofillHints=""
        android:layout_marginStart="100dp"
        android:inputType="textPersonName"
        tools:ignore="LabelFor" />
    <Button
        android:id="@+id/btnAdd"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="onClickAddDetails"
        android:layout_marginLeft="100dp"
        android:text="@string/add_user"
        android:layout_marginStart="100dp" />

```

```

<Button
    android:id="@+id/btnRetrieve"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:onClick="onClickShowDetails"
    android:layout_marginLeft="100dp"
    android:text="@string/show_users"
    android:layout_marginStart="100dp" />
<TextView
    android:id="@+id/res"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginLeft="100dp"
    android:clickable="false"
    android:ems="10"
    android:layout_marginStart="100dp" />
</LinearLayout>

```

MainActivity.java

```

package com.example.mad_app12;

import android.annotation.SuppressLint;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.net.Uri;
import android.os.Build;
import android.os.Bundle;
import android.view.MotionEvent;
import android.view.View;
import android.view.inputmethod.InputMethodManager;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import androidx.annotation.RequiresApi;
import androidx.appcompat.app.AppCompatActivity;

import java.util.Objects;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    @SuppressLint("NewApi")
    @RequiresApi(api = Build.VERSION_CODES.KITKAT)
    @Override
    public boolean onTouchEvent(MotionEvent event) {
        InputMethodManager imm =
        (InputMethodManager) getSystemService(Context.INPUT_METHOD_SERVICE);

        imm.hideSoftInputFromWindow(Objects.requireNonNull(getCurrentFocus()).getWindowToken(), 0);
        return true;
    }
}

```

```

        public void onClickAddDetails(View view) {
            ContentValues values = new ContentValues();
            values.put(UserProvider.name, ((EditText)
findViewById(R.id.txtName)).getText().toString());
            getContentResolver().insert(UserProvider.CONTENT_URI, values);
            Toast.makeText(getBaseContext(), "New Record Inserted",
Toast.LENGTH_LONG).show();
        }

        @SuppressWarnings("SetTextI18n")
        public void onClickShowDetails(View view) {
            // Retrieve employee records
            TextView resultView= findViewById(R.id.res);
            @SuppressWarnings("Recycle") Cursor cursor =
getContentResolver().query(Uri.parse("content://com.example.content_provider.UserP
rovider/users"), null, null, null, null);
            assert cursor != null;
            if(cursor.moveToFirst()) {
                StringBuilder strBuild=new StringBuilder();
                while (!cursor.isAfterLast()) {

                    strBuild.append("\n").append(cursor.getString(cursor.getColumnIndex("id"))).append
("-").append(cursor.getString(cursor.getColumnIndex("name")));
                    cursor.moveToNext();
                }
                resultView.setText(strBuild);
            }
            else {
                resultView.setText("No Records Found");
            }
        }
    }
}

```

UserProvider.java

```

package com.example.mad_app12;

import android.content.ContentProvider;
import android.content.ContentUris;
import android.content.ContentValues;
import android.content.Context;
import android.content.UriMatcher;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteException;
import android.database.sqlite.SQLiteOpenHelper;
import android.database.sqlite.SQLiteQueryBuilder;
import android.net.Uri;
import android.os.Build;
import androidx.annotation.RequiresApi;
import java.util.HashMap;
import java.util.Objects;

public class UserProvider extends ContentProvider {
    static final String PROVIDER_NAME =
"com.example.content_provider.UserProvider";
    static final String URL = "content://" + PROVIDER_NAME + "/users";
    static final Uri CONTENT_URI = Uri.parse(URL);
}

```

```

static final String id = "id";
static final String name;
static final int uriCode = 1;
static final UriMatcher uriMatcher;
private static HashMap<String, String> values;

static {
    name = "name";
    uriMatcher = new UriMatcher(UriMatcher.NO_MATCH);
    uriMatcher.addURI(PROVIDER_NAME, "users", uriCode);
    uriMatcher.addURI(PROVIDER_NAME, "users/*", uriCode);
}

@Override
public String getType(Uri uri) {
    switch (uriMatcher.match(uri)) {
        case uriCode:
            return "vnd.android.cursor.dir/users";
        default:
            throw new IllegalArgumentException("Unsupported URI: " + uri);
    }
}

@Override
public boolean onCreate() {
    Context context = getContext();
    DatabaseHelper dbHelper = new DatabaseHelper(context);
    db = dbHelper.getWritableDatabase();
    if (db != null) {
        return true;
    }
    return false;
}

@RequiresApi(api = Build.VERSION_CODES.KITKAT)
@Override
public Cursor query(Uri uri, String[] projection, String selection,
                    String[] selectionArgs, String sortOrder) {
    SQLiteQueryBuilder qb = new SQLiteQueryBuilder();
    qb.setTables(TABLE_NAME);

    switch (uriMatcher.match(uri)) {
        case uriCode:
            qb.setProjectionMap(values);
            break;
        default:
            throw new IllegalArgumentException("Unknown URI " + uri);
    }
    if (sortOrder == null || Objects.equals(sortOrder, "")) {
        sortOrder = id;
    }
    Cursor c = qb.query(db, projection, selection, selectionArgs, null,
                        null, sortOrder);
    c.setNotificationUri(getContext().getContentResolver(), uri);
    return c;
}

@Override
public Uri insert(Uri uri, ContentValues values) {
    long rowID = db.insert(TABLE_NAME, "", values);
}

```

```

        if (rowID > 0) {
            Uri _uri = ContentUris.withAppendedId(CONTENT_URI, rowID);
            getContext().getContentResolver().notifyChange(_uri, null);
            return _uri;
        }
        throw new SQLiteException("Failed to add a record into " + uri);
    }

    @Override
    public int update(Uri uri, ContentValues values, String selection,
        String[] selectionArgs) {
        int count = 0;
        switch (uriMatcher.match(uri)) {
            case uriCode:
                count = db.update(TABLE_NAME, values, selection, selectionArgs);
                break;
            default:
                throw new IllegalArgumentException("Unknown URI " + uri);
        }
        getContext().getContentResolver().notifyChange(uri, null);
        return count;
    }

    @Override
    public int delete(Uri uri, String selection, String[] selectionArgs) {
        int count = 0;
        switch (uriMatcher.match(uri)) {
            case uriCode:
                count = db.delete(TABLE_NAME, selection, selectionArgs);
                break;
            default:
                throw new IllegalArgumentException("Unknown URI " + uri);
        }
        getContext().getContentResolver().notifyChange(uri, null);
        return count;
    }

    private SQLiteDatabase db;
    static final String DATABASE_NAME = "EmpDB";
    static final String TABLE_NAME = "Employees";
    static final int DATABASE_VERSION = 1;
    static final String CREATE_DB_TABLE = " CREATE TABLE " + TABLE_NAME
        + " (id INTEGER PRIMARY KEY AUTOINCREMENT, "
        + " name TEXT NOT NULL);";

    private static class DatabaseHelper extends SQLiteOpenHelper {
        DatabaseHelper(Context context) {
            super(context, DATABASE_NAME, null, DATABASE_VERSION);
        }

        @Override
        public void onCreate(SQLiteDatabase db) {
            db.execSQL(CREATE_DB_TABLE);
        }

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

```

strings.xml

```
<resources>
    <string name="app_name">MAD_App12</string>
    <string name="name">Name</string>
    <string name="add_user">Add User</string>
    <string name="show_users">Show Users</string>
</resources>
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    package="com.example.mad_app12">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme"
        tools:ignore="AllowBackup">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <provider
            android:authorities="com.example.content_provider.UserProvider"
            android:name=".UserProvider"
            android:exported="false">
        </provider>
    </application>

</manifest>
```