

Advanced Mobile Programming

TyBSc.I.T. - Sem VI

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This is to certify that _____ Of Class _____
Semester _____ bearing Roll No. _____ and Seat No. _____
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Practical 1

Aim: Create a basic hello world app.

activity_main.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:id="@+id/main"
    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:layout_centerInParent="true"
        android:textSize="40dp"
        />

</RelativeLayout>
```

MainActivity.java

```
package com.example.helloworld;

import android.os.Bundle;

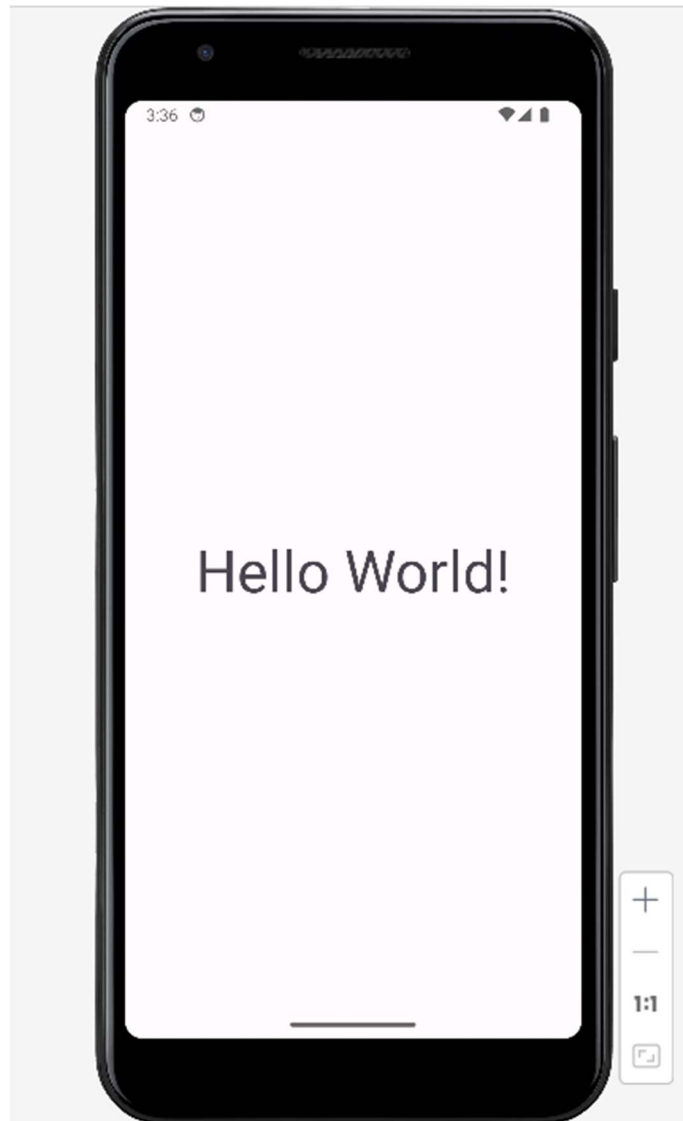
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

    }
}
```

Output:



Practical 2

Aim: Using different layouts design a calculator.

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">

    <!-- Title -->
    <TextView
        android:id="@+id/textViewTitle"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Calculator"
        android:textSize="30sp"
        android:textColor="#FFFFFF"
        android:background="#800080"
        android:padding="16dp"
        android:textAlignment="center"/>

    <EditText
        android:id="@+id/editTextFirstOperand"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/textViewTitle"
        android:layout_margin="16dp"
        android:hint="First Operand"
        android:inputType="numberDecimal"/>

    <EditText
        android:id="@+id/editTextSecondOperand"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextFirstOperand"
        android:layout_margin="16dp"
        android:hint="Second Operand"
        android:inputType="numberDecimal"/>

    <EditText
        android:id="@+id/editTextResult"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextSecondOperand"
        android:layout_margin="16dp"
        android:hint="Result"
        android:inputType="none"
        android:enabled="false"/>

    <Button
        android:id="@+id/btnPlus"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="+"
        android:layout_below="@id/editTextResult"
        android:layout_alignParentStart="true"
        android:layout_marginTop="16dp"
        android:layout_marginStart="16dp"/>
```

```

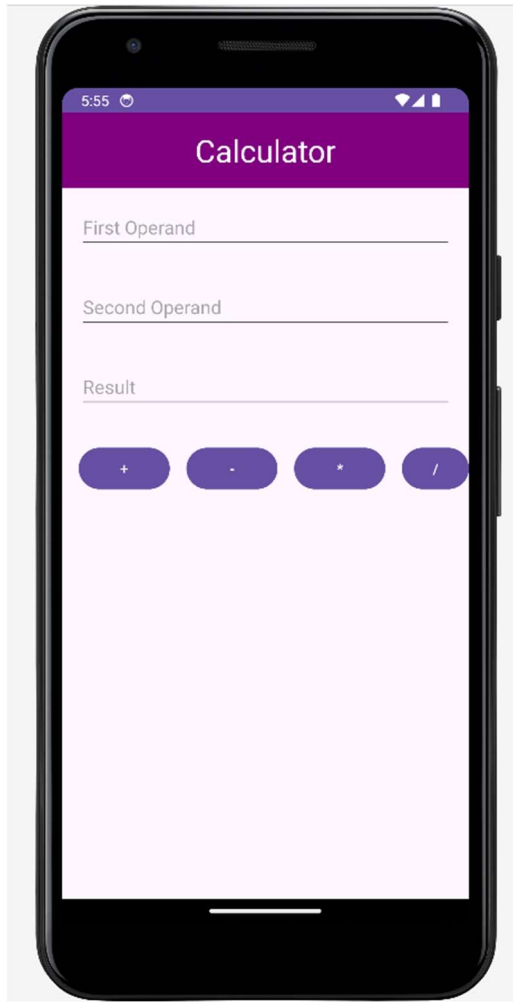
<Button
    android:id="@+id/btnMinus"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="-"
    android:layout_below="@id/editTextResult"
    android:layout_toEndOf="@id/btnPlus"
    android:layout_marginTop="16dp"
    android:layout_marginStart="16dp"/>

<Button
    android:id="@+id/btnMultiply"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="*"
    android:layout_below="@id/editTextResult"
    android:layout_toEndOf="@id/btnMinus"
    android:layout_marginTop="16dp"
    android:layout_marginStart="16dp"/>

<Button
    android:id="@+id/btnDivide"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="/"
    android:layout_below="@id/editTextResult"
    android:layout_toEndOf="@id/btnMultiply"
    android:layout_marginTop="16dp"
    android:layout_marginStart="16dp"/>
</RelativeLayout>

```

Output:



Practical 3

Aim: How to move from one page to another with data.

activity_main.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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Enter Your Name"
        android:layout_centerInParent="true"
        android:padding="20dp"
        android:width="300dp"
    />
    <Button
        android:id="@+id/send"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Send"
        android:layout_below="@+id/name"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="20dp"
    />

</RelativeLayout>
```

activity_main2.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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity2">

    <TextView
        android:id="@+id/received_value_id"
        android:layout_width="300dp"
        android:layout_height="50dp"
        android:layout_marginLeft="40dp"
        android:layout_marginTop="20dp"
        android:textSize="40sp"
        android:textStyle="bold"
    />

</RelativeLayout>
```

```

        android:layout_marginStart="40dp"
        android:layout_centerInParent="true"
        android:text="Welcome "
    />

</RelativeLayout>

```

MainActivity.java

```

package com.example.practical3;

import android.content.Intent;
import android.os.Bundle;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {
    Button send;
    EditText uname;

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

        uname = findViewById(R.id.name);
        send = findViewById(R.id.send);

        send.setOnClickListener(view -> {
            String name = uname.getText().toString().trim();
            if (name.isEmpty()) {
                Toast.makeText(MainActivity.this, "Enter Your Name", Toast.LENGTH_SHORT).show();
            } else {
                Intent intent = new Intent(MainActivity.this, MainActivity2.class);
                intent.putExtra("name", name);
                startActivity(intent);
            }
        });
    }
}

```

MainActivity2.java

```

package com.example.practical3;

```

```

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

public class MainActivity2 extends AppCompatActivity {

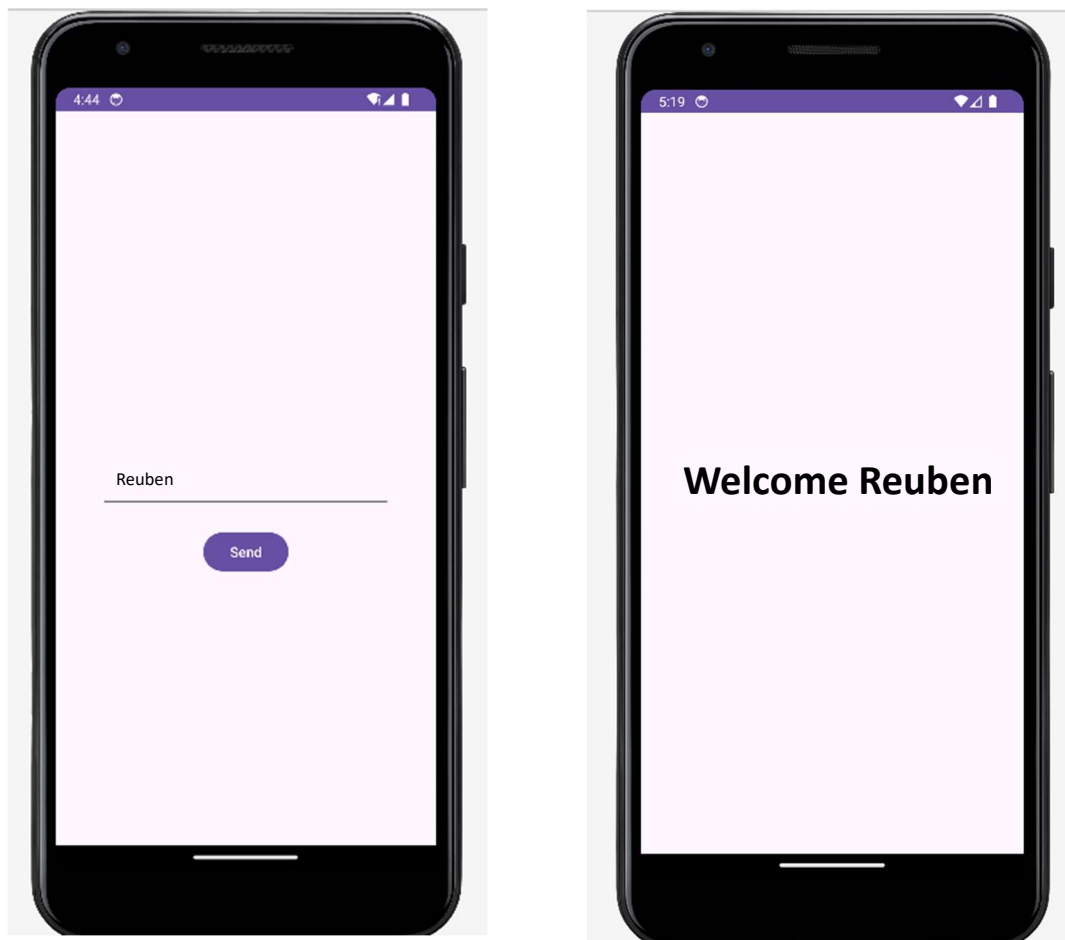
    TextView msg;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);

        msg = findViewById(R.id.received_value_id);

        // create the get Intent object
        Intent intent = getIntent();
        // receive the value by getStringExtra() method and
        // key must be same which is send by first activity
        String str = intent.getStringExtra("name");
        String weclomemsg = "Welcome " + str;
        // display the string into textView
        msg.setText(weclomemsg);
    }
}

```

Output:



Practical 4

Aim: Implement the use of shared preferences.

activity_main.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=".MainActivity">

        <TextView
            android:id="@+id/login"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Login"
            android:textSize="20dp"
            android:textAlignment="center"
            android:textColor="@color/black"
            android:layout_margin="10dp"
            android:padding="10dp"
            />

        <EditText
            android:id="@+id/userid"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_below="@id/login"
            android:hint="Enter Username"
            android:textColorHint="@color/black"
            android:padding="10dp"
            android:layout_margin="30dp"
            android:inputType="text"
            android:maxLength="10"
            />

        <EditText
            android:id="@+id/passwd"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_below="@id/userid"
            android:hint="Enter Password"
            android:textColorHint="@color/black"
            android:padding="10dp"
            android:layout_margin="30dp"
            android:inputType="textPassword"
            />

        <TextView
            android:id="@+id/resetpass"
```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Forgot Password?"
        android:layout_below="@+id/passwd"
        android:padding="10dp"
        android:layout_marginLeft="30dp"
        android:textColor="@color/black"
    />
    <Button
        android:id="@+id/loginbtn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/resetpass"
        android:text="Login"
        android:textColor="@color/white"
        android:layout_centerHorizontal="true"
    />
</RelativeLayout>

```

activity_homepage.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=".Homepage">

        <TextView
            android:id="@+id/welcome_message"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:padding="10dp"
            android:text="Welcome to Home Page"
            android:textStyle="bold"
            android:textSize="24sp"
            android:layout_centerInParent="true"
        />

        <Button
            android:id="@+id/logout_button"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="end"
            android:layout_marginTop="16dp"
            android:text="Logout"
            android:layout_below="@+id/welcome_message"
            android:layout_centerHorizontal="true"
        />

    </RelativeLayout>

```

MainActivity.java

```
package com.example.helloworld;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

Homepage.java

```
package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

public class Homepage extends AppCompatActivity {
    TextView welcomeMessage;
    Button logoutButton;
    SharedPreferences sharedPreferences;

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

        welcomeMessage = findViewById(R.id.welcome_message);
        logoutButton = findViewById(R.id.logout_button);
        sharedPreferences = getSharedPreferences(MainActivity.mypref, MODE_PRIVATE);

        String username = sharedPreferences.getString("User", "");
        welcomeMessage.setText("Welcome, " + username);
    }
}
```

```

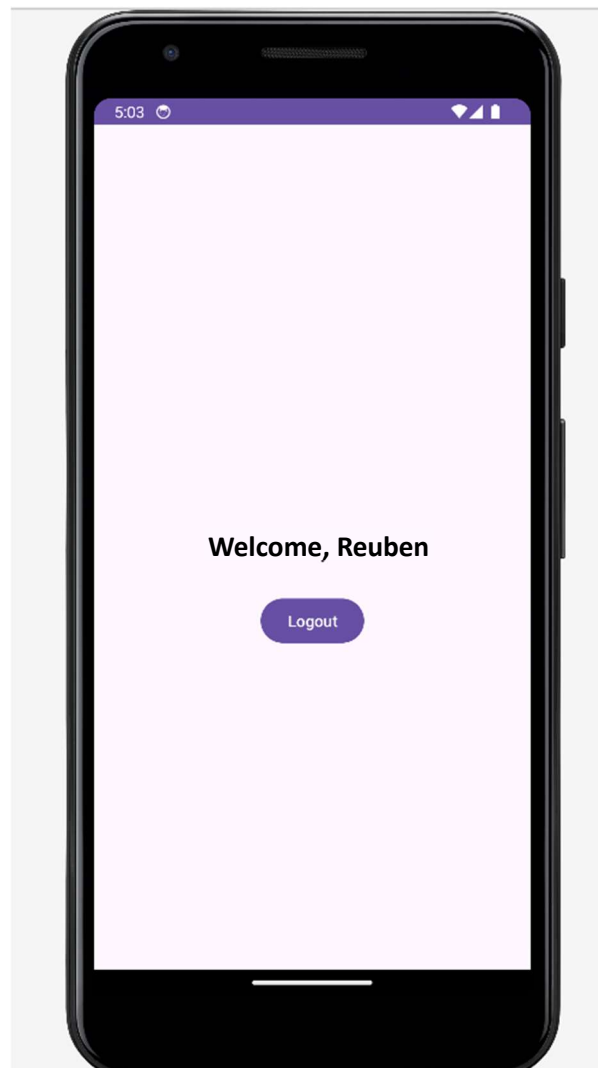
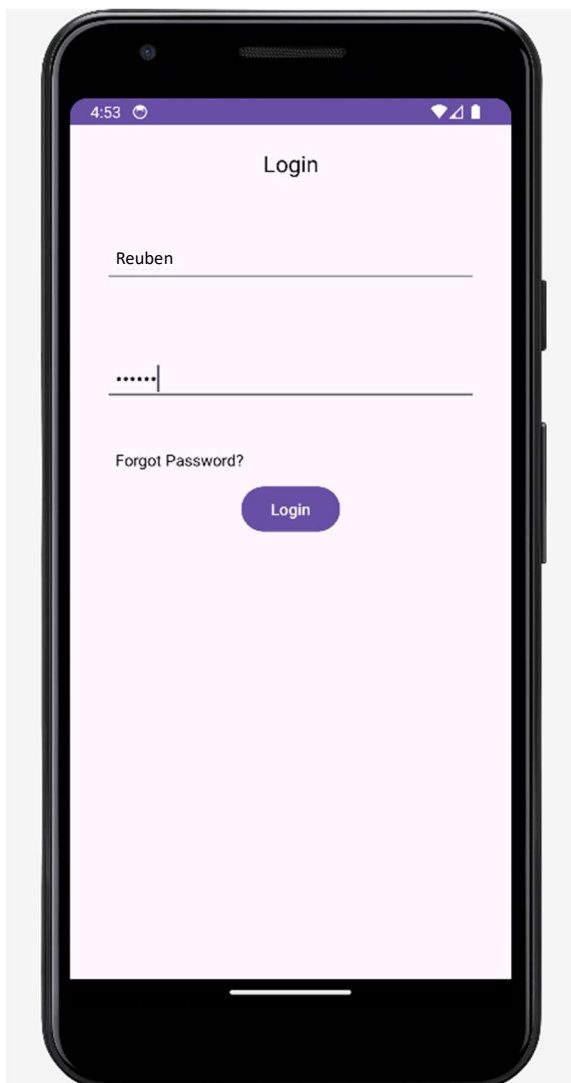
welcomeMessage.setVisibility(View.VISIBLE);
logoutButton.setVisibility(View.VISIBLE);

logoutButton.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        // Clear user data
        SharedPreferences.Editor editor = sharedPreferences.edit();
        editor.remove("User");
        editor.apply();

        // Navigate back to login page
        Intent intent = new Intent(Hompage.this, MainActivity.class);
        startActivity(intent);
        finish();
    }
});
}
}

```

Output:



Practical 5

Aim: Create a Music API to start and stop a ringtone.

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">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportRtl="true"
        android:theme="@style/Theme.Music"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <service android:name=".musicService"/>
    </application>
</manifest>
```

MainActivity.java

```
package com.example.music;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {
    Button start, stop;

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

        start=findViewById(R.id.play);
        stop=findViewById(R.id.pause);
    }
}
```



```

        start.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                startService(new Intent(MainActivity.this,musicService.class));
            }
        });
        stop.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                stopService(new Intent(MainActivity.this,musicService.class));
            }
        });
    }
}

```

musicService.java

```

package com.example.music;

import android.app.Service;
import android.content.Intent;
import android.media.MediaPlayer;
import android.os.IBinder;
import android.provider.Settings;

import androidx.annotation.Nullable;

public class musicService extends Service {
    MediaPlayer mp;

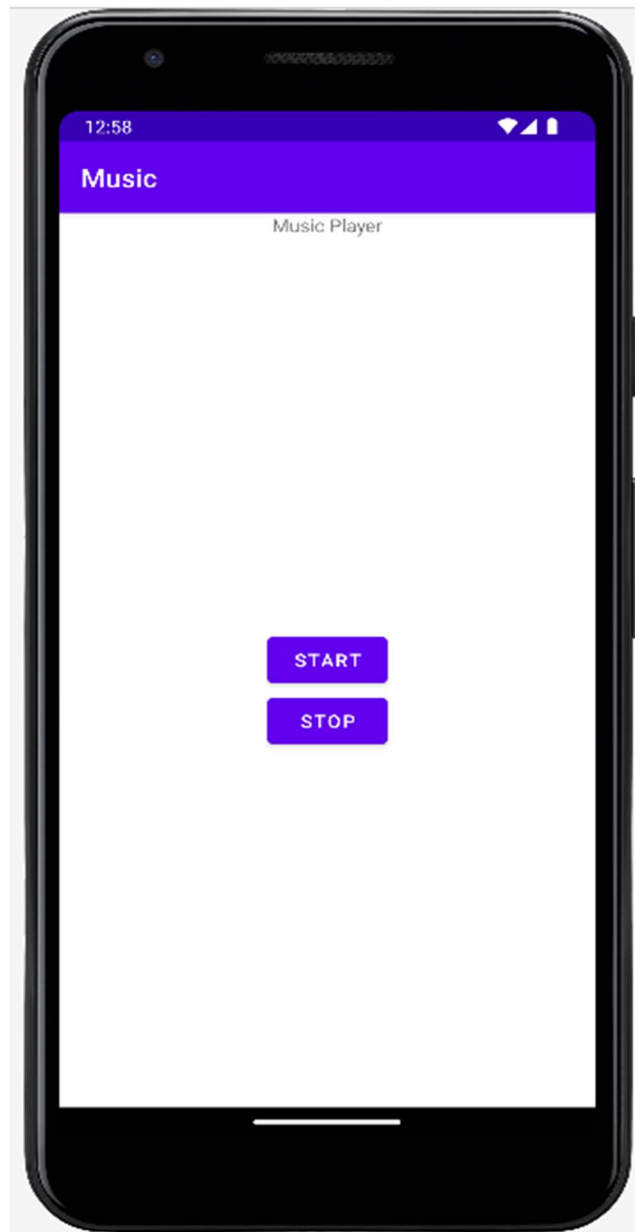
    @Nullable
    @Override
    public IBinder onBind(Intent intent) {
        return null;
    }

    @Override
    public int onStartCommand(Intent intent, int flags, int startId) {
        mp = MediaPlayer.create(this, Settings.System.DEFAULT_RINGTONE_URI);
        mp.setLooping(true);
        mp.start();
        return START_STICKY;
    }

    @Override
    public void onDestroy() {
        super.onDestroy();
        if (mp != null) {
            mp.stop();
            mp.release();
        }
    }
}

```

Output:



Practical 6

Aim: Implement the use of alert dialog.

activity_main.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=".MainActivity">
    <Button
        android:id="@+id/click"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="261dp"
        android:layout_centerInParent="true"
        android:text="Click Me!"
    />
</RelativeLayout>
```

MainActivity.java

```
package com.example.myapplication;
```

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

```
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
```

```
public class MainActivity extends AppCompatActivity {
    Button b;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b = findViewById(R.id.click);
```

```
        b.setOnClickListener(new View.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View view) {
                AlertDialog.Builder builder = new AlertDialog.Builder(MainActivity.this);
                builder.setTitle("Success");
                builder.setMessage("Alert Dialog is visible");
                builder.setCancelable(false);
                builder.setIcon(R.drawable.baseline_close_24);
```

```
                builder.setPositiveButton("Okay", new DialogInterface.OnClickListener() {
```

```
                    @Override
```

```
                    public void onClick(DialogInterface dialogInterface, int i) {
```

```

    }
    });
    builder.setNegativeButton("Cancel", new DialogInterface.OnClickListener() {
        @Override
        public void onClick(DialogInterface dialogInterface, int i) {

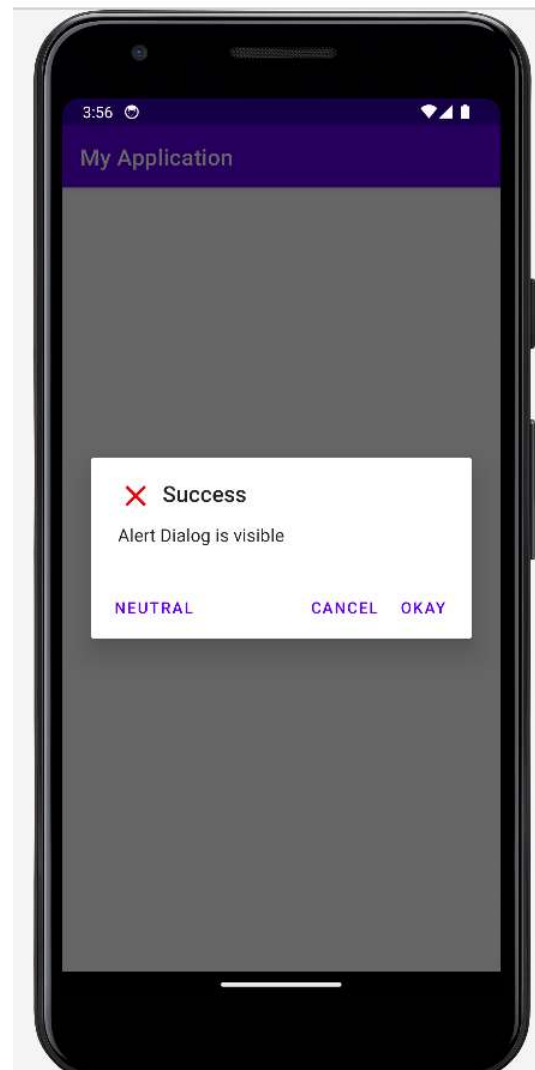
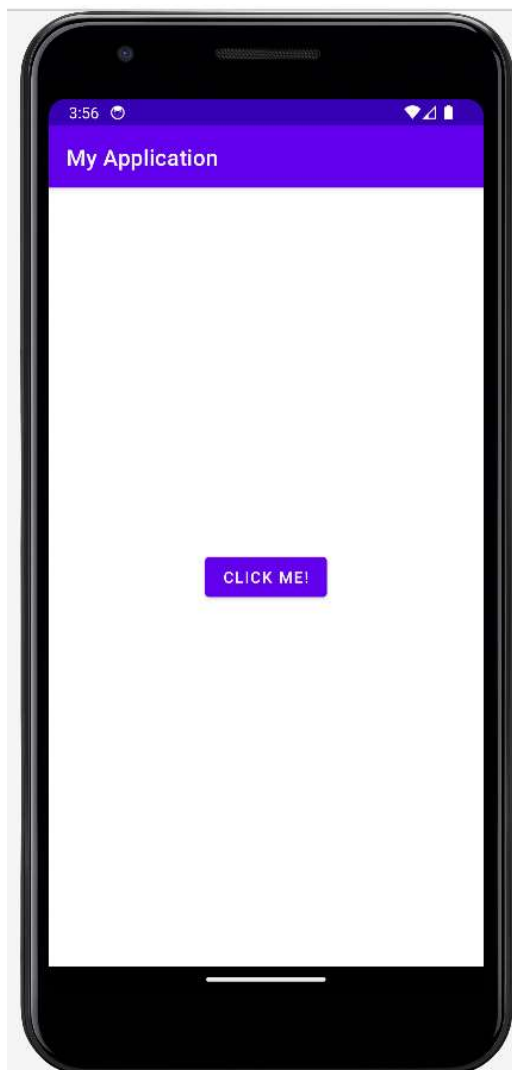
        }
    });

    builder.setNeutralButton("Neutral", new DialogInterface.OnClickListener() {
        @Override
        public void onClick(DialogInterface dialogInterface, int i) {

        }
    });
    builder.show();
}
});
}
}

```

Output:



Practical 7

Aim: Implement the use of menus.

activity_main.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">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/Theme.Menu"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

menu.xml

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto">
    <item android:title="Welcome" android:id="@+id/menu_welcome" />
    <item android:title="Welcome" android:id="@+id/menu_welcome1" />
    <item android:id="@+id/Logout" android:title="Logout" android:icon="@drawable/baseline_logout_24"
        app:showAsAction="ifRoom"></item>
</menu>
```

MainActivity.java

```
package com.example.menu;

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

import android.os.Bundle;
import android.view.Menu;
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) {
        getMenuInflater().inflate(R.menu.menu, null);
        return super.onCreateOptionsMenu(menu);
    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        int id=item.getItemId();
        if(id==R.id.menu_welcome){
            return true;
        } else if (id==R.id.menu_welcome1) {
            return true;
        }
        return super.onOptionsItemSelected(item);
    }
}
```

Output:



Practical 8

Aim: . Design a basic login form and validate the user using specific controls.

activity_main.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=".MainActivity">

    <TextView
        android:id="@+id/login"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Login"
        android:textSize="20dp"
        android:textAlignment="center"
        android:textColor="@color/logintext"
        android:layout_margin="10dp"
        android:padding="10dp"
    />
    <EditText
        android:id="@+id/userid"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/login"
        android:hint="Enter Username"
        android:textColorHint="@color/black"
        android:padding="10dp"
        android:layout_margin="30dp"
        android:inputType="text"
        android:maxLength="10"
    />
    <EditText
        android:id="@+id/passwd"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/userid"
        android:hint="Enter Password"
        android:textColorHint="@color/black"
        android:padding="10dp"
        android:layout_margin="30dp"
        android:inputType="textPassword"
    />
    <TextView
        android:id="@+id/resetpass"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Forgot Password?"
        android:layout_below="@+id/passwd"
        android:padding="10dp"
```



```

        android:layout_marginLeft="30dp"
        android:textColor="@color/logintext"
    />
    <Button
        android:id="@+id/loginbtn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/resetpass"
        android:text="Login"
        android:textColor="@color/white"
        android:layout_centerHorizontal="true"
    />
</RelativeLayout>

```

MainActivity.java

```
package com.example.myapplication;
```

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

```
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
```

```
public class MainActivity extends AppCompatActivity {
    EditText username, password;
    Button login;
    TextView forgotpassword;
    String un,ps;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    username=findViewById(R.id.userid);
    password=findViewById(R.id.passwd);
    forgotpassword=findViewById(R.id.resetpass);
```

```
login=findViewById(R.id.loginbtn);
```

```
login.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(View view) {
```

```
        un=username.getText().toString().trim();
```

```
        ps=password.getText().toString().trim();
```

```
        if(un == "Rae" && ps == "123456"){
```

```
            Toast.makeText(MainActivity.this, "Login Successful!", Toast.LENGTH_SHORT).show();
```

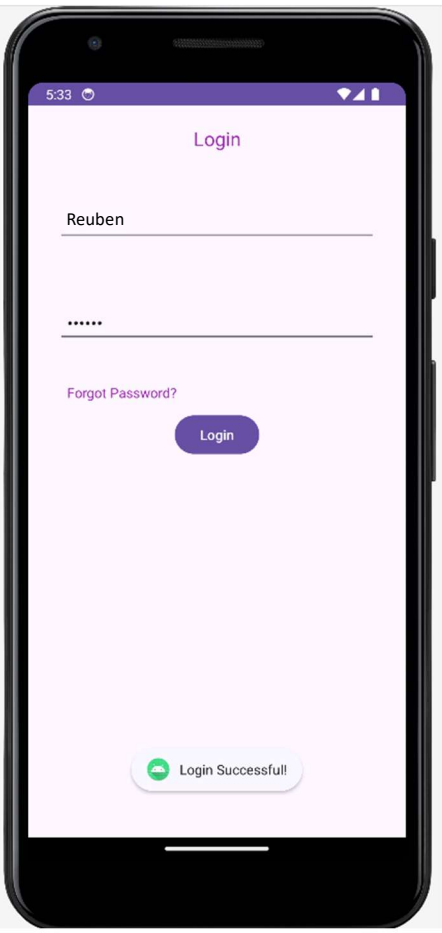
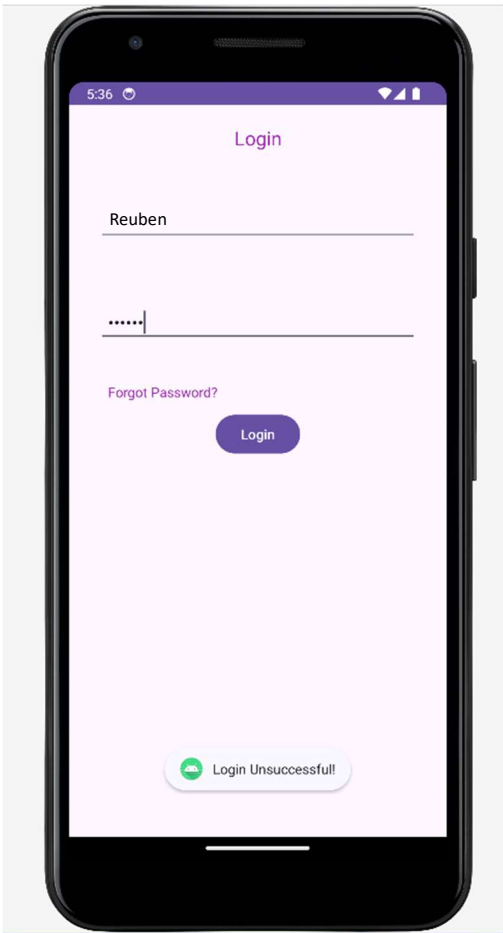
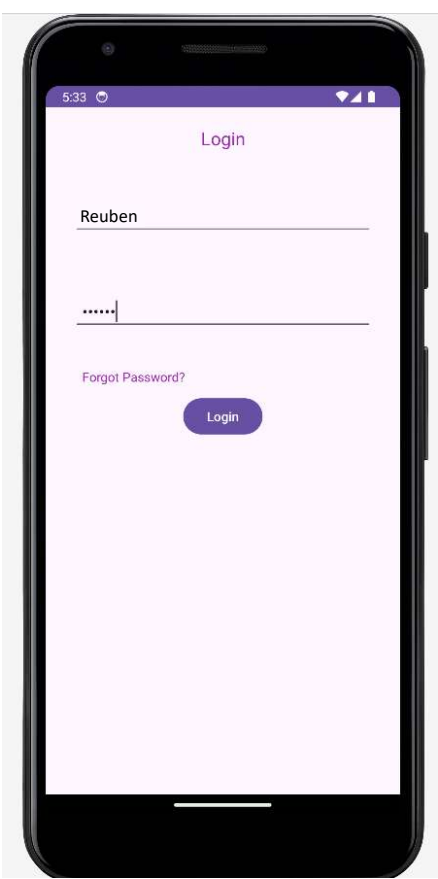
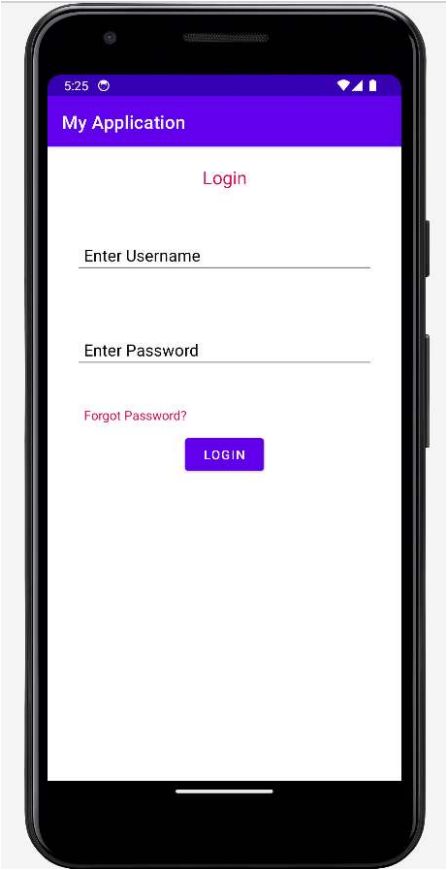
```
        }
```

```
        else{
```

```
            Toast.makeText(MainActivity.this, "Login Successful!", Toast.LENGTH_SHORT).show();
```

```
        }  
    }  
});  
forgotpassword.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View view) {  
  
        }  
});  
  
}  
}
```

Output:



Practical 9

Aim: Implement the use of toast and snackbar

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:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center"
    android:padding="16dp"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/toast_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Show Toast" />

    <Button
        android:id="@+id/snackbar_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="Show Snackbar" />

</LinearLayout>
```

MainActivity.java

```
package com.example.practical9;
```

```
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import com.google.android.material.snackbar.Snackbar;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    @Override
```

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

```
        Button toastButton = findViewById(R.id.toast_button);
        Button snackbarButton = findViewById(R.id.snackbar_button);
```

```
        toastButton.setOnClickListener(new View.OnClickListener() {
            @Override
```

```

        public void onClick(View v) {
            showToast();
        }
    });

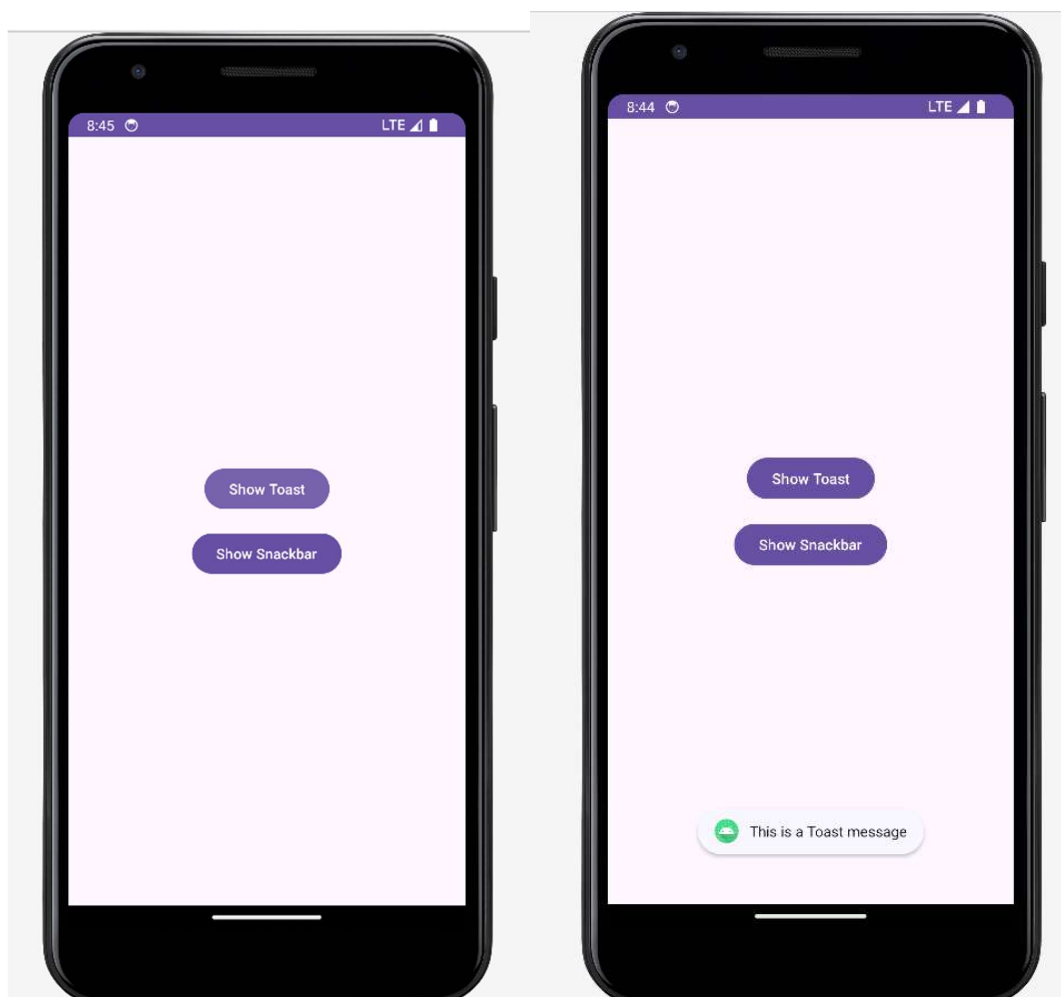
    snackbarButton.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            showSnackbar();
        }
    });
}

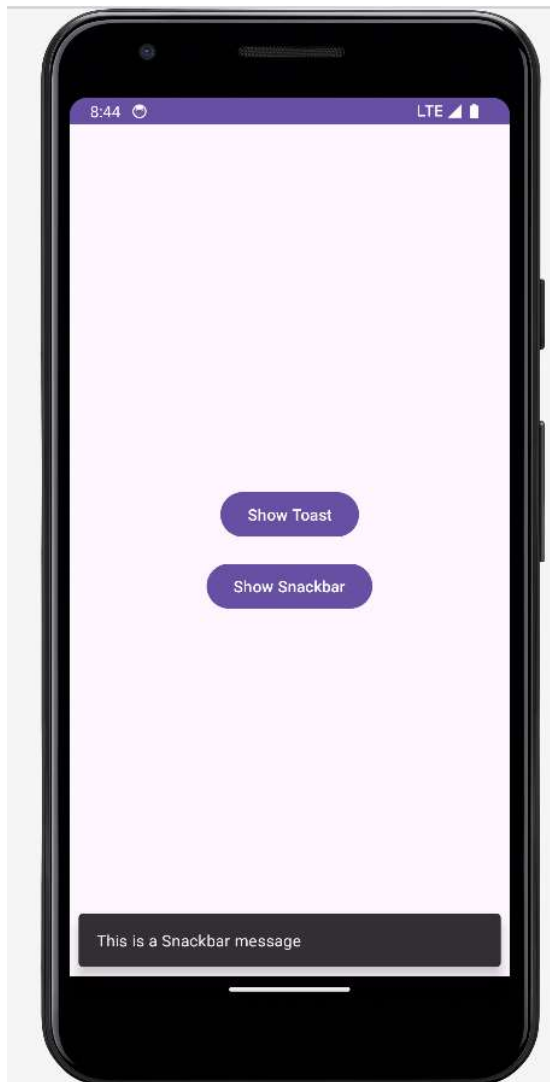
private void showToast() {
    Toast.makeText(getApplicationContext(), "This is a Toast message", Toast.LENGTH_SHORT).show();
}

private void showSnackbar() {
    Snackbar.make(findViewById(android.R.id.content), "This is a Snackbar message",
    Snackbar.LENGTH_SHORT).show();
}
}

```

Output:





Practical 10

Aim: Create a CRUD operation using SQLite API.

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">

    <!-- Header TextView -->
    <TextView
        android:id="@+id/regist"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="30dp"
        android:gravity="center_horizontal"
        android:padding="5dp"
        android:text="Register Form"
        android:textAlignment="center"
        android:textColor="@color/purple_700"
        android:textSize="30sp" />

    <!-- EditText for Username -->
    <EditText
        android:id="@+id/usernameEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/regist"
        android:layout_marginStart="10dp"
        android:layout_marginTop="50dp"
        android:layout_marginEnd="10dp"
        android:hint="Enter UserName"
        android:inputType="text" />

    <EditText
        android:id="@+id/nameEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Full Name"
        android:layout_below="@id/usernameEditText"
        android:layout_marginStart="10dp"
        android:layout_marginTop="20dp"
        android:layout_marginEnd="10dp"
    />

    <!-- EditText for Password -->
    <EditText
        android:id="@+id/emailEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/nameEditText"
        android:layout_marginStart="10dp"
        android:layout_marginTop="20dp"
        android:layout_marginEnd="10dp"
        android:hint="Enter Email"
        android:inputType="textEmailAddress" />
```

```

<EditText
    android:id="@+id/phoneNumberEditText"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/emailEditText"
    android:layout_marginStart="10dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="10dp"
    android:hint="Enter Phone number"
    android:inputType="text|phone" />

<EditText
    android:id="@+id/passwordEditText"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/phoneNumberEditText"
    android:layout_marginStart="10dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="10dp"
    android:hint="Enter Password"
    android:inputType="textPassword" />

<Button
    android:id="@+id/registerButton"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/passwordEditText"
    android:layout_marginStart="10dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="10dp"
    android:text="Register" />
</RelativeLayout>

```

MainActivity.java

```

package com.example.registration;

import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    DBHelper dbHelper;

    EditText usernameEditText, phoneNumberEditText, nameEditText, emailEditText, passwordEditText;
    Button registerButton;

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

```



```

usernameEditText = findViewById(R.id.usernameEditText);
phoneNumberEditText = findViewById(R.id.phoneNumberEditText);
nameEditText = findViewById(R.id.nameEditText);
emailEditText = findViewById(R.id.emailEditText);
passwordEditText = findViewById(R.id.passwordEditText);
registerButton = findViewById(R.id.registerButton);

dbHelper = new DBHelper(MainActivity.this);

registerButton.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {

        String username = usernameEditText.getText().toString().trim();
        String phoneNumber = phoneNumberEditText.getText().toString().trim();
        String name = nameEditText.getText().toString().trim();
        String email = emailEditText.getText().toString().trim();
        String password = passwordEditText.getText().toString().trim();

        if (username.isEmpty() || phoneNumber.isEmpty() || name.isEmpty() || email.isEmpty() ||
password.isEmpty()) {
            Toast.makeText(MainActivity.this, "Please fill in all fields", Toast.LENGTH_SHORT).show();
        } else {

            Toast.makeText(MainActivity.this, "Registration successful", Toast.LENGTH_SHORT).show();
        }

    }
});
}

private void validateuser(String username, String email, String name, String password, String phoneNumber) {
    Cursor c = dbHelper.checkUser(email);

    if(c.getCount() == 1) {
        while(c.moveToNext()) {
            String passwd = c.getString(2);
            /*
            if(password.equals(passwd)){

            } else {

            }*/
            Boolean result = dbHelper.insertData(username, phoneNumber, name, email, password);
            if(result) {

            } else {

            }
        }
    } else {

```

```

    }
}
}

```

DBHelper.java

```
package com.example.registration;
```

```

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

```

```
import androidx.annotation.Nullable;
```

```

public class DBHelper extends SQLiteOpenHelper {
    public static final String dbname="college.db";
    public static final String tablename="students";
    public DBHelper(@Nullable Context context) {
        super(context, dbname, null,1);
    }

```

```

    @Override
    public void onCreate(SQLiteDatabase sqLiteDatabase) {
        sqLiteDatabase.execSQL("create table "+tablename+"(id int PRIMARY KEY AUTOINCREMENT,username
        TEXT,phonenumber TEXT,name TEXT,email TEXT,password TEXT)");
    }

```

```

    @Override
    public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {

        sqLiteDatabase.execSQL("drop table if exists "+tablename);
    }

```

```

    public Boolean insertData(String username,String phonenumber,String name,String email,String password)
    {
        SQLiteDatabase db=this.getWritableDatabase();
        ContentValues contentValues=new ContentValues();
        contentValues.put("username",username);
        contentValues.put("phonenumber",phonenumber);
        contentValues.put("email",email);
        contentValues.put("name",name);
        contentValues.put("password",password);

        long result = db.insert(tablename,null,contentValues);
        if(result==-1){
            return false;
        }
        else {
            return true;
        }
    }

```

```

    public boolean deleteData(int id){
        SQLiteDatabase db=this.getWritableDatabase();
    }

```

```

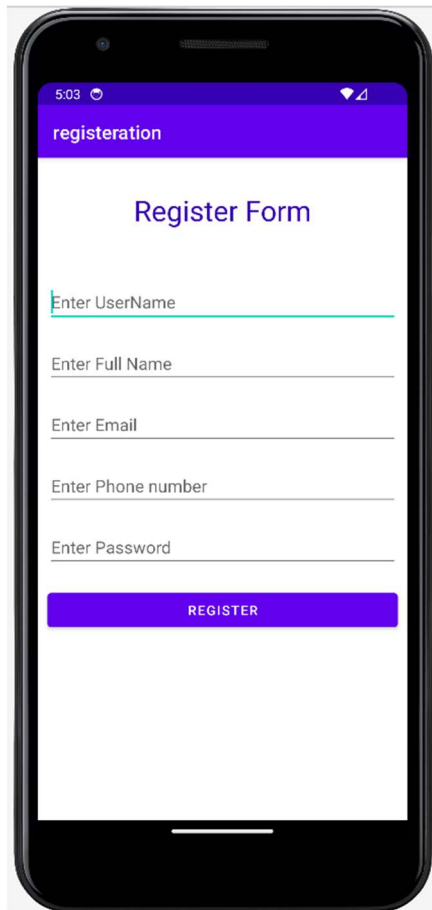
        db.execSQL("delete from "+ tabelname+" where id="+id );
        return true;
    }
    public boolean deleteAllData(){
        SQLiteDatabase db=this.getWritableDatabase();
        db.execSQL("delete from "+ tabelname );
        return true;
    }
    public Cursor readData(){
        SQLiteDatabase db=this.getWritableDatabase();
        Cursor cursor=db.rawQuery("select*from "+tabelname,null);
        return cursor;
    }

    public Cursor readSingleData(int id){
        SQLiteDatabase db=this.getWritableDatabase();
        Cursor cursor=db.rawQuery("select*from "+tabelname +"where id="+id,null);
        return cursor;
    }

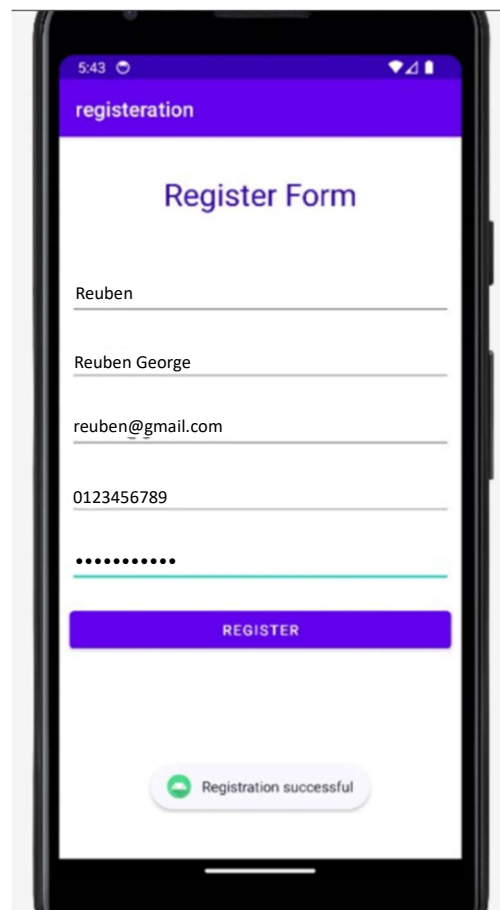
    public Cursor checkUser(String email){
        SQLiteDatabase db=this.getWritableDatabase();
        Cursor cursor=db.rawQuery("select * from "+tabelname+" where email='"+email+"'",null);
        return cursor;
    }
}

```

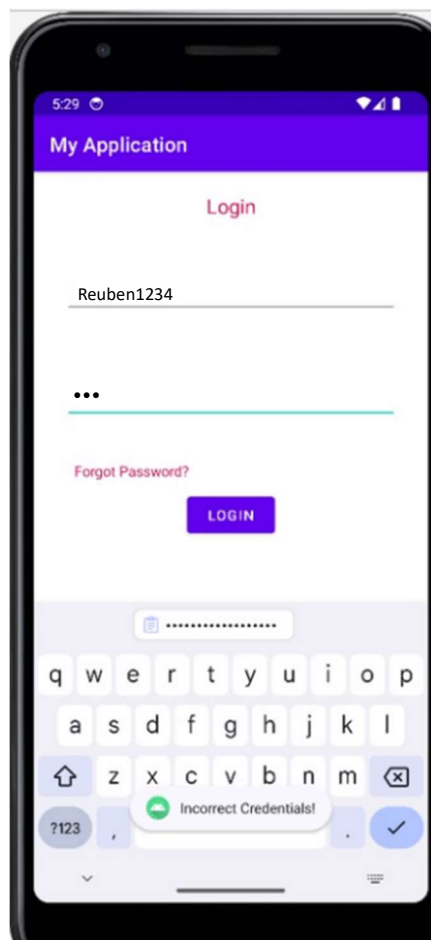
Ouput:



A smartphone screen displaying a registration form. The status bar at the top shows the time 5:03 and signal strength. The app's header is purple with the text "registration". Below the header, the title "Register Form" is centered. The form consists of six input fields with placeholder text: "Enter UserName", "Enter Full Name", "Enter Email", "Enter Phone number", and "Enter Password". A purple button labeled "REGISTER" is positioned below the password field.



A smartphone screen displaying the registration form with filled data. The status bar shows the time 5:43. The app's header is purple with the text "registration". The title "Register Form" is centered. The input fields contain the following text: "Reuben", "Reuben George", "reuben@gmail.com", and "0123456789". The password field is masked with dots. A purple button labeled "REGISTER" is below the password field. At the bottom, a green message bubble with a checkmark icon says "Registration successful".



A smartphone screen displaying a login screen. The status bar shows the time 5:29. The app's header is purple with the text "My Application". Below the header, the title "Login" is centered. The form has two input fields: the first contains "Reuben1234" and the second is masked with dots. Below the password field is a link that says "Forgot Password?". A purple button labeled "LOGIN" is below the "Forgot Password?" link. A keyboard is visible at the bottom of the screen. A green message bubble with a checkmark icon and the text "Incorrect Credentials!" is displayed above the keyboard.