

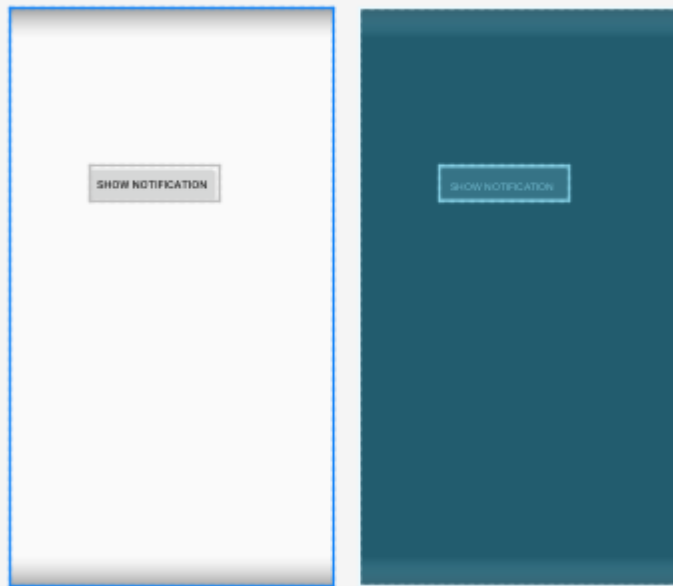
Date:
Lab Session No: 07

7.a. Implement Android Notifications

Aim: Develop an android application to Implement Android Notifications (BigTextStyle, BigPictureStyle, InboxStyle)

Software's /IDE Tools:
Android Development Kit / Android Studio

Application User interface design:



Application Programming Interface:

API / PACKAGES	CLASSES / INTERFACES	METHODS	DESCRIPTION
import androidx.appcompat.app.AppCompatActivity;	AppCompatActivity	protected void onCreate(Bundle savedInstanceState)	onCreate(Bundle) is where you initialize your activity. When Activity is started and application is not loaded, then both onCreate() methods will be called.

import android.w idget.Butt on;	Button	setOnClickListener()	setOnClickListener() performs the action present in it when button is pressed.
--	--------	----------------------	--

Code/Implementation:

// Develop an android application to Implement Android Notifications

// Project Name : Notifications

/*

Lab Session No.	07
Author	: SIRISHA
Date	:
Roll Number	: 188W5A0526
Description	: Implementation of Notifications
Softwares required	: Android Studio
Topics Covered	: Notifications

*/

a) Big TextStyle Notification**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" >

    <Button
        android:id="@+id/btnShow"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Show Notification"
        android:layout_marginTop="200dp" android:layout_marginLeft="100dp"/>

</LinearLayout>
```

MainActivity.java

```
package com.example.bigstylenotification;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.NotificationCompat;

import android.app.NotificationChannel; import
android.app.NotificationManager; import
android.app.PendingIntent; import
android.content.Context;
import android.content.Intent;
import android.graphics.Bitmap; import
android.graphics.BitmapFactory; import
android.os.Bundle;
import android.util.Log; import
android.view.View; import
android.widget.Button;

public class MainActivity extends AppCompatActivity { private
    NotificationManager notificationManager; @Override
    protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button btnNotify = (Button)findViewById(R.id.btnShow);
```

```

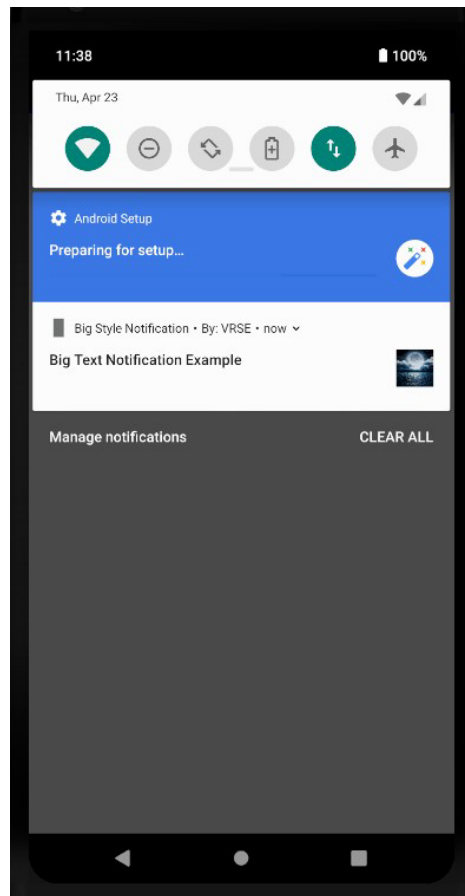
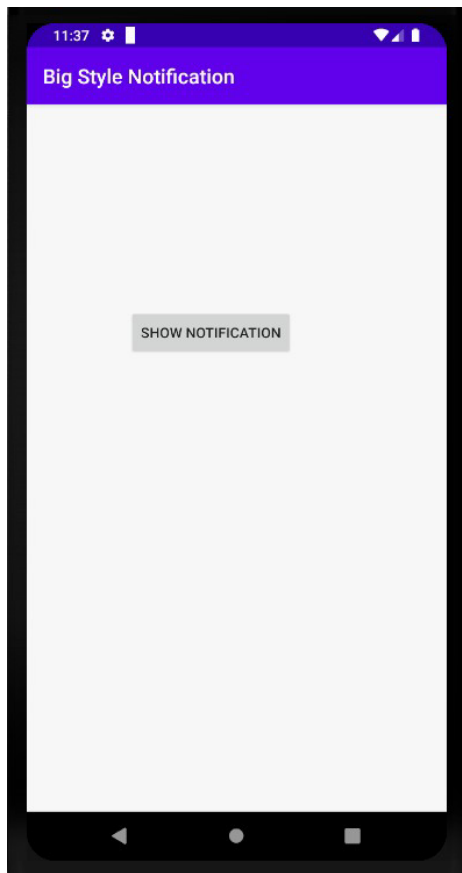
        btnNotify.setOnClickListener(new View.OnClickListener() { @Override
            public void onClick(View v) {
                //To set large icon in notification
                Bitmap licon = BitmapFactory.decodeResource(getResources(),
R.drawable.img);

                //Assign BigText style notification
                notificationManager = (NotificationManager)
getSystemService(NOTIFICATION_SERVICE);
                NotificationCompat.BigTextStyle bigText = new
NotificationCompat.BigTextStyle();
                bigText.bigText("Welcome to VRSEC, Hope you will enjoy a lot in
campus");
                bigText.setSummaryText("By: VRSE"); NotificationChannel
notificationChannel = new
NotificationChannel("my_channel_id_01", "My Notifications",
NotificationManager.IMPORTANCE_LOW);
                notificationChannel.setSound(null,null);

notificationManager.createNotificationChannel(notificationChannel);
                NotificationCompat.Builder mBuilder = new
NotificationCompat.Builder(MainActivity.this, "my_channel_id_01")
                    .setSmallIcon(R.drawable.paris)
                    .setContentTitle("Big Text Notification Example")
                    .setLargeIcon(licon)
                    .setStyle(bigText);
                mBuilder.setSound(null);
                // Set the intent to fire when the user taps on notification.
                Intent resultIntent = new Intent(MainActivity.this, MainActivity.class);
                PendingIntent pendingIntent =
PendingIntent.getActivity(MainActivity.this, 0, resultIntent, 0);
                mBuilder.setContentIntent(pendingIntent);
                // Sets an ID for the notification
                int mNotificationId = 001;
                // It will display the notification in notification bar
                notificationManager.notify(mNotificationId, mBuilder.build());
            }
        });
    }
}

```

Output:



b) Inbox Style

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" >

    <Button
        android:id="@+id/btnShow"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Show Notification"
        android:layout_marginTop="200dp" android:layout_marginLeft="100dp"/>

</LinearLayout>
```

MainActivity.java

```
package com.example.inboxstylenotification;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.NotificationCompat;

import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.app.PendingIntent; import
android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity
{ private NotificationManager notificationManager;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    { super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button btnNotify = (Button)findViewById(R.id.btnShow);
        btnNotify.setOnClickListener(new View.OnClickListener()
        {
            @Override
            public void onClick(View v) {
                //Implement inbox style notification
                NotificationCompat.InboxStyle iStyle = new
                NotificationCompat.InboxStyle();
                iStyle.addLine("Message 1.");
                iStyle.addLine("Message 2.");
                iStyle.addLine("Message 3.");
                iStyle.addLine("Message 4.");
                iStyle.addLine("Message 5.");
                iStyle.setSummaryText("+2 more");
                notificationManager = (NotificationManager)
                getSystemService(NOTIFICATION_SERVICE);
                NotificationChannel notificationChannel =
                new NotificationChannel("my_channel_id_01", "My Notifications",
                NotificationManager.IMPORTANCE_LOW);
                notificationChannel.setSound(null,null);
                NotificationCompat.Builder mBuilder = new
                NotificationCompat.Builder(MainActivity.this,"my_channel_id_01")
                    .setSmallIcon(R.drawable.img)
```

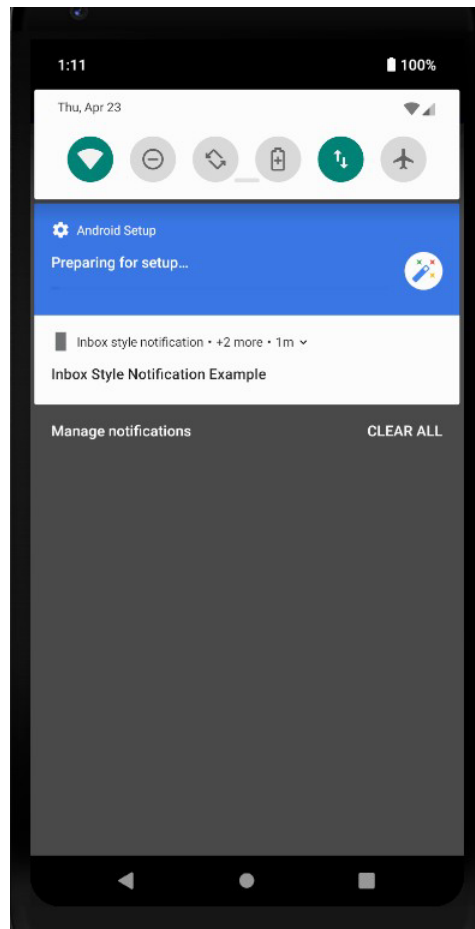
```

        .setContentTitle("Inbox Style Notification Example")
        .setStyle(iStyle);
        mBuilder.setSound(null);
        // Set the intent to fire when the user taps on notification.
        Intent resultIntent = new Intent(MainActivity.this, MainActivity.class);
        PendingIntent pendingIntent =
PendingIntent.getActivity(MainActivity.this, 0, resultIntent, 0);
        mBuilder.setContentIntent(pendingIntent);
        // Sets an ID for the notification
        int mNotificationId = 001;

        // It will display the notification in notification bar
        notificationManager.notify(mNotificationId, mBuilder.build());
    }
}
}

```

Output



c) BigPicture Style Notification

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" >

    <Button
        android:id="@+id/btnShow"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Show Notification"
        android:layout_marginTop="200dp" android:layout_marginLeft="100dp"/>

</LinearLayout>
```

MainActivity.java

```
package com.example.bigpicturestylenotification;
```

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

```
import androidx.core.app.NotificationCompat;
```

```
import android.app.NotificationChannel; import
```

```
android.app.NotificationManager; import
```

```
android.app.PendingIntent; import
```

```
android.content.Intent;
```

```
import android.graphics.BitmapFactory;
```

```
import android.net.Uri; import
```

```
android.os.Bundle; import
```

```
android.view.View; import
```

```
android.widget.Button;
```

```
public class MainActivity extends AppCompatActivity { private
    NotificationManager notificationManager; @Override
    protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button btnNotify = (Button)findViewById(R.id.btnShow);
        btnNotify.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Assign big picture notification
                notificationManager = (NotificationManager)
getSystemService(NOTIFICATION_SERVICE);
                NotificationCompat.BigPictureStyle bpStyle = new
NotificationCompat.BigPictureStyle();
                bpStyle.bigPicture(BitmapFactory.decodeResource(getResources(),
R.drawable.paris)).build();
                // Set the intent to fire when the user taps on notification.
                Intent rIntent = new Intent(Intent.ACTION_VIEW,
Uri.parse("http://tutlane.com/"));
                PendingIntent pendingIntent =
PendingIntent.getActivity(MainActivity.this, 0, rIntent, 0);
                NotificationChannel notificationChannel = new
NotificationChannel("my_channel_id_03", "My Notifications",
NotificationManager.IMPORTANCE_LOW);
                notificationChannel.setSound(null,null);

                notificationManager.createNotificationChannel(notificationChannel);
                NotificationCompat.Builder mBuilder = new
```

```

NotificationCompat.Builder(MainActivity.this,"my_channel_id_03")
    .setSmallIcon(R.drawable.img)
    .setContentTitle("Big Picture Notification Example")
    .addAction(R.drawable.ic_share, "Share", pendingIntent)
    .setStyle(bpStyle);
mBuilder.setSound(null);

mBuilder.setContentIntent(pendingIntent);
// Sets an ID for the notification
int mNotificationId = 1;

// It will display the notification in notification bar
notificationManager.notify(mNotificationId, mBuilder.build());
    }
});
}
}

```

ic_share.xml

```

<?xml version="1.0" encoding="utf-8"?>
<vector xmlns:android="http://schemas.android.com/apk/res/android"
    android:width="108dp"
    android:height="108dp"
    android:viewportWidth="108"
    android:viewportHeight="108">
    <path
        android:fillColor="#3DDC84"
        android:pathData="M0,0h108v108h-108z" />
    <path
        android:fillColor="#00000000"
        android:pathData="M9,0L9,108"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M19,0L19,108"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M29,0L29,108"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M39,0L39,108"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M49,0L49,108"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M59,0L59,108"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M69,0L69,108"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />

```

```

<path
    android:fillColor="#00000000"
    android:pathData="M79,0L79,108"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M89,0L89,108"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M99,0L99,108"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M0,9L108,9"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M0,19L108,19"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M0,29L108,29"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M0,39L108,39"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M0,49L108,49"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M0,59L108,59"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M0,69L108,69"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M0,79L108,79"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M0,89L108,89"
    android:strokeWidth="0.8"
    android:strokeColor="#33FFFFFF" />
<path
    android:fillColor="#00000000"
    android:pathData="M0,99L108,99"

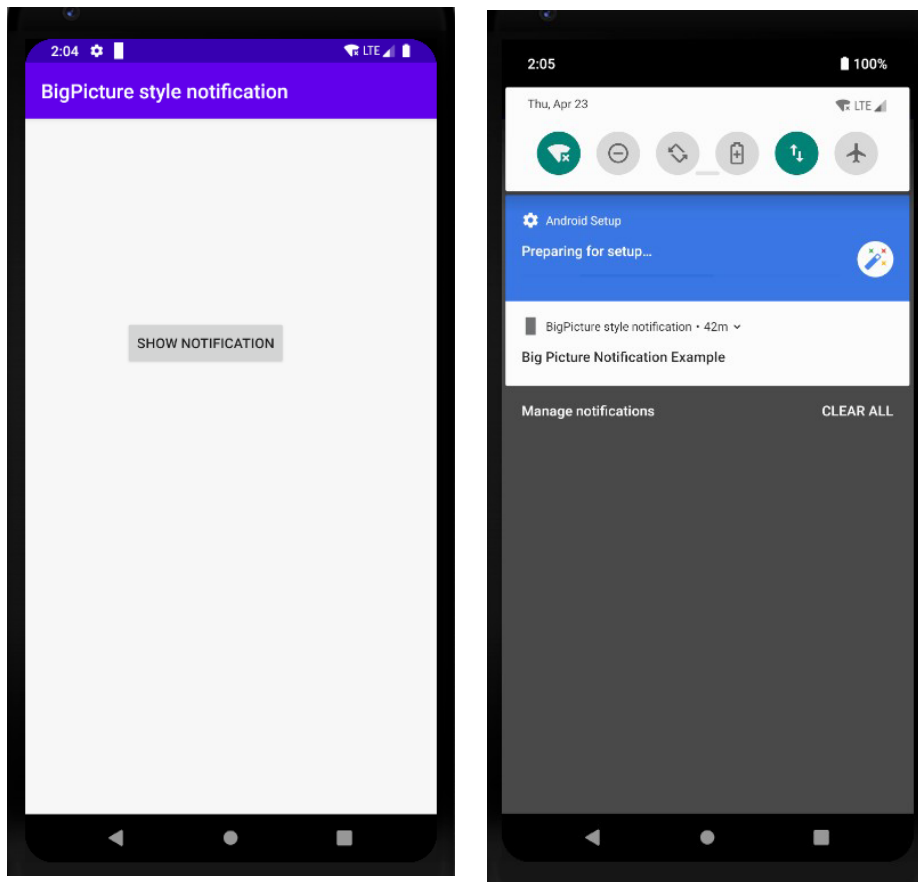
```

```

        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M19,29L89,29"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M19,39L89,39"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M19,49L89,49"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M19,59L89,59"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M19,69L89,69"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M19,79L89,79"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M29,19L29,89"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M49,19L49,89"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M59,19L59,89"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M69,19L69,89"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
    <path
        android:fillColor="#00000000"
        android:pathData="M79,19L79,89"
        android:strokeWidth="0.8"
        android:strokeColor="#33FFFFFF" />
</vector>

```

Output



Result:

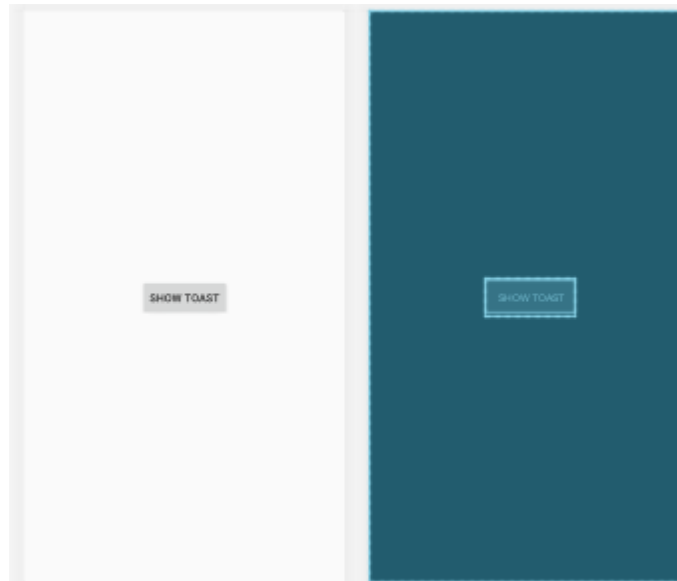
Implementation of the Notifications was done successfully.

7.b. Implementation of Android Custom Toast

Aim: Develop an android application to implement Android Custom Toast
Software's /IDE Tools:

Android Development Kit / Android Studio

Application User interface design:



Application Programming Interface:

API / PACKAGES	CLASSES / INTERFACES	METHODS	DESCRIPTION
import androidx.appcompat.AppCompatActivity;	AppCompatActivity	protected void onCreate(Bundle savedInstanceState)	onCreate(Bundle) is where you initialize your activity. When Activity is started and application is not loaded, then both onCreate() methods will be called.
import android.widget.Button;	Button	setOnClickListener()	setOnClickListener() performs the action present in it when button is pressed.

Code/Implementation:

```
// Develop an android application to demonstrate Custom Toast
// Project Name : Toast
```

```

/*
    Lab Session No.           : 07
    Author                    : SIRISHA
    Date                      :
    Roll Number               : 188W5A0526
    Description                : Implementation of
                              Toast
    Softwares required        : Android Studio
    Topics Covered             : custom Toast
*/

```

Custom_toast.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingLeft="10dp"
    android:paddingRight="10dp"
    android:id="@+id/custom_toast_layout"
    android:background="#80CC28">
    <ImageView
        android:src="@drawable/land"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginRight="10dp"/>
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="13dp"
        android:textColor="#FFF"
        android:textStyle="bold"
        android:textSize="15dp"
        android:id="@+id/txtvw"/>

</LinearLayout>

```

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">
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/btnshow" android:text="Show
        Custom Toast"
        android:layout_marginTop="150dp"
        android:layout_marginLeft="110dp"/>

</LinearLayout>

```

MainActivity.java

```
package com.example.customtoast;
```

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

```
import android.os.Bundle;
```

```
import android.view.Gravity; import
```

```
android.view.LayoutInflater; import
```

```
android.view.View;
```

```
import android.view.ViewGroup; import
```

```
android.widget.Button; import
```

```
android.widget.TextView; import
```

```
android.widget.Toast;
```

```
public class MainActivity extends AppCompatActivity { @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

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

```
        Button btn=(Button)findViewById(R.id.btnshow); btn.setOnClickListener(new
```

```
        View.OnClickListener() {
```

```
            @Override
```

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

```
                LayoutInflater inflater=getLayoutInflater();
```

```
                View
```

```
                layout=inflater.inflate(R.layout.custom_toast,(ViewGroup)findViewById(R.id.custom_toast_layout));
```

```
                TextView tv=(TextView)layout.findViewById(R.id.txtvw);
```

```
                tv.setText("Custom Toast Notification");
```

```
                Toast toast=new Toast(getApplicationContext());
```

```
                toast.setGravity(Gravity.CENTER_VERTICAL,0,100);
```

```
                toast.setDuration(Toast.LENGTH_LONG); toast.setView(layout);
```

```
                toast.show();
```

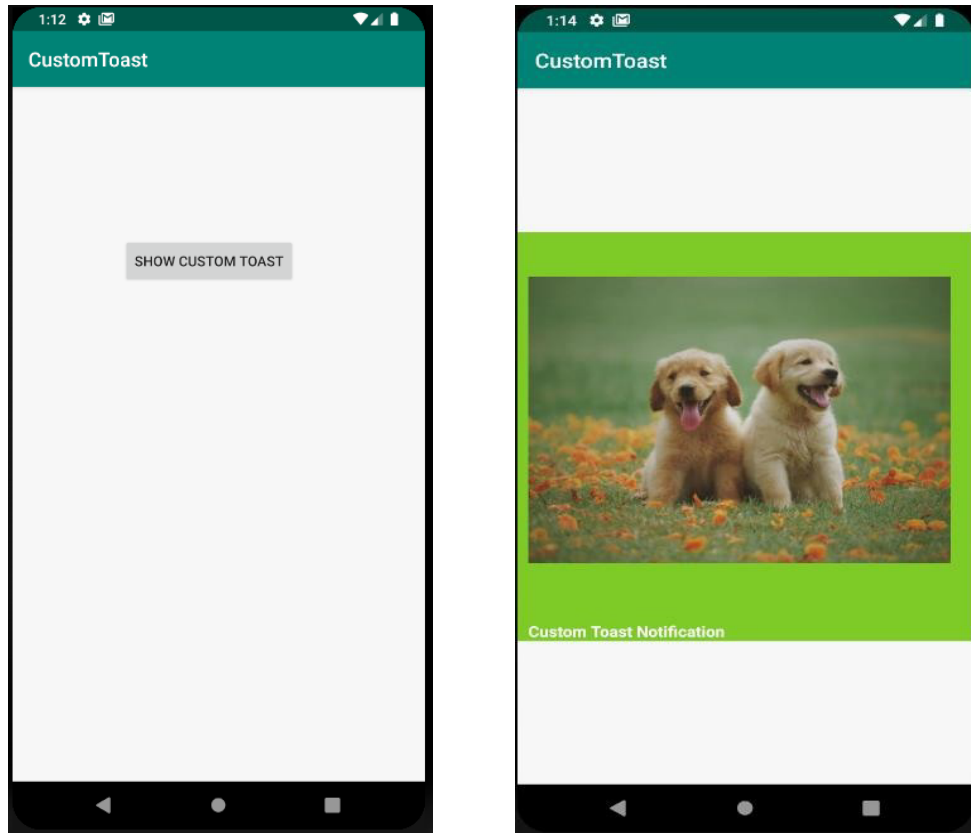
```
            }
```

```
        });
```

```
    }
```

```
}
```


Output



Result

Implementation of the Custom toast program was done successfully.

Date:
Lab Session No: 08

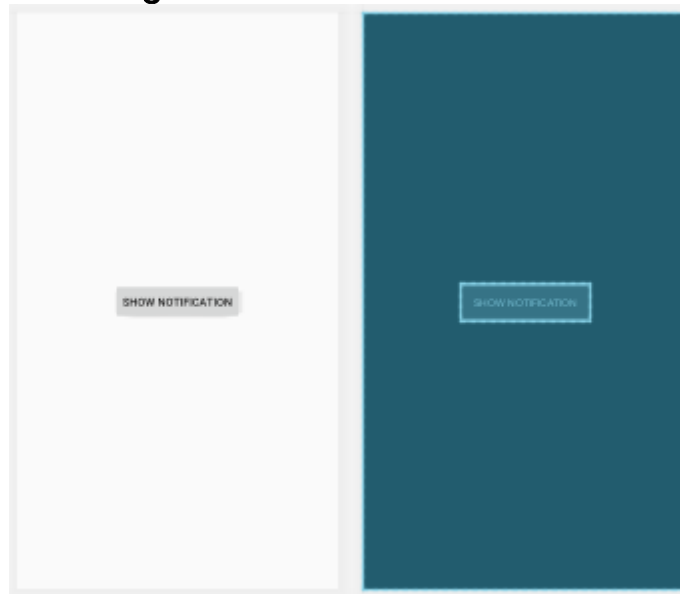
8.a. Implementation of Progress Notifications

Aim: Develop an android application to Implement Progress Notification

Software's /IDE Tools:

Android Development Kit / Android Studio

Application User interface design:



Application Programming Interface:

API / PACKAGES	CLASSES / INTERFACES	METHODS	DESCRIPTION
import androidx.appcompat.app.AppCompatActivity;	AppCompatActivity	protected void onCreate(Bundle savedInstanceState)	onCreate(Bundle) is where you initialize your activity. When Activity is started and application is not loaded, then both onCreate() methods will be called.
import android.widget.Button;	Button	setOnClickListener()	setOnClickListener() performs the action present in it when button is pressed.

Code/Implementation:

// Develop an android application to Implement Progress Notification

// Project Name : Progress Notification

/*

Lab Session No.	08
Author	: SIRISHA
Date	:
Roll Number	: 188W5A0526
Description	: Implementation of Progress Notification
Softwares required	: Android Studio
Topics Covered	: Progress Notification

*/

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:text="Show
Notification" android:id="@+id/b"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

package com.example.progressnotification;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.NotificationCompat;

import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.content.Context;
import android.graphics.Color;
import android.os.Build;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity
{ private NotificationManager mNotifyManager;
  private NotificationCompat.Builder mbuilder;
  int id=1;

```

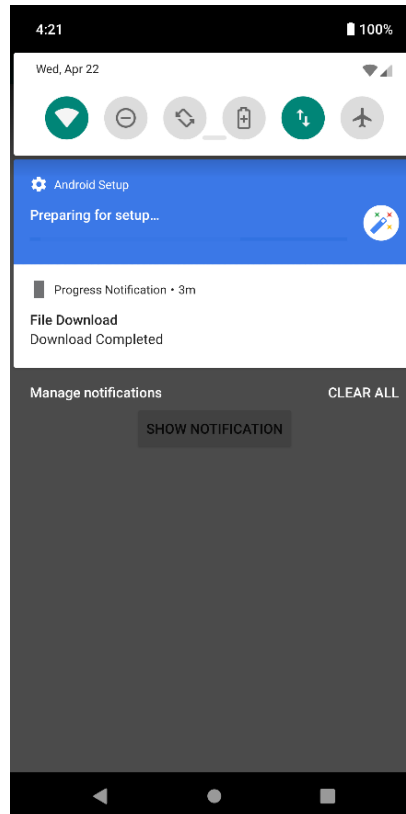
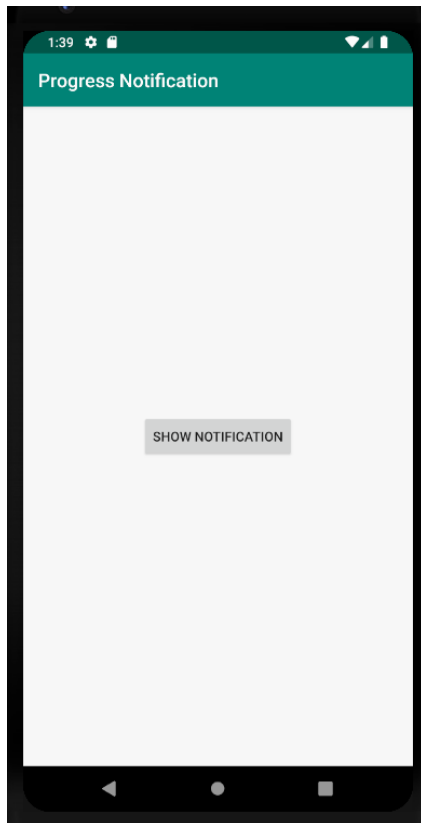
```

@Override
protected void onCreate(Bundle savedInstanceState)
{
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    Button b1=(Button)findViewById(R.id.b);
    b1.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {

mNotifyManager=(NotificationManager)getSystemService(Context.NOTIFICATION_SERVICE);
        NotificationChannel notificationChannel = new
NotificationChannel("my_channel_id_01", "My Notifications", NotificationManager.IMPORTANCE_LOW);
        notificationChannel.setSound(null,null);
        mNotifyManager.createNotificationChannel(notificationChannel);
        mbuilder=new
NotificationCompat.Builder(MainActivity.this,"my_channel_id_01");
        mbuilder.setSound(null);
        mbuilder.setTitle("File Download");
        mbuilder.setText("Download in progress..");
        mbuilder.setSmallIcon(R.drawable.img);
        new Thread(new Runnable()
        {
            @Override
            public void run() {
                int incr;
                for(incr=0;incr<=100;incr+=5)
                {
                    mbuilder.setProgress(100,incr,false);
                    mNotifyManager.notify(id,mbuilder.build());
                    try{
                        Thread.sleep(1000);
                    }
                    catch(InterruptedException e)
                    {
                        Log.d("TAG","sleep failure");
                    }
                }
                mbuilder.setText("Download Completed");
                mbuilder.setProgress(0,0,false);
                mNotifyManager.notify(id,mbuilder.build());
            }
        }).start();
        });
    }
}

```

Output:



Result:

Implementation of the Progress Notification was done successfully.

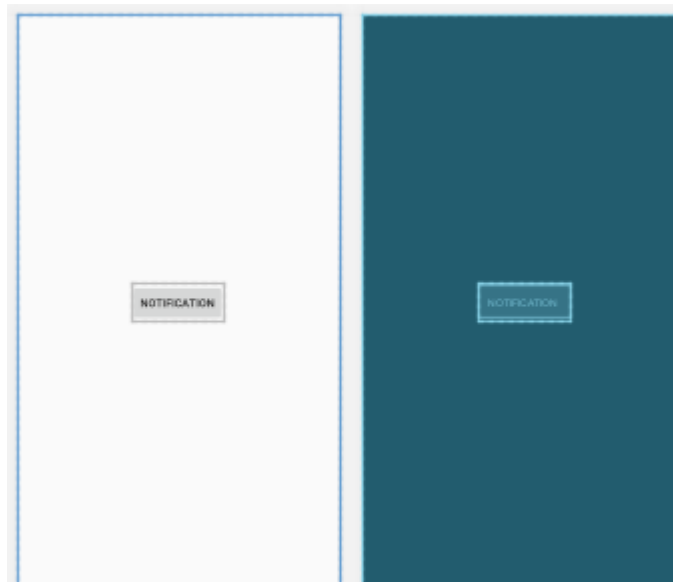
8.b. Implementation of Push Notification

Aim: Develop an android application to implement Push Notification

Software's /IDE Tools:

Android Development Kit / Android Studio

Application User interface design:



Application Programming Interface:

API / PACKAGES	CLASSES / INTERFACES	METHODS	DESCRIPTION
import androidx.appcompat.app.AppCompatActivity;	AppCompatActivity	protected void onCreate(Bundle savedInstanceState)	onCreate(Bundle) is where you initialize your activity. When Activity is started and application is not loaded, then both onCreate() methods will be called.
import android.widget.Button;	Button	setOnClickListener()	setOnClickListener() performs the action present in it when button is pressed.

Code/Implementation:

// Develop an android application to demonstrate Push Notification

// Project Name : Push Notification

/*

Lab Session No.	08
Author	: SIRISHA
Date	:
Roll Number	: 188W5A0526
Description	: Implementation of Push Notification
Softwares required	: Android Studio
Topics Covered	: Push Notification

*/

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/b"
        android:layout_marginStart="8dp"
        android:layout_marginBottom="8dp"
        android:layout_marginTop="8dp"
        android:layout_marginEnd="8dp"
        android:onClick="openNotification" android:text="Notification"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"/>
</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

package com.example.pushnotification;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.NotificationCompat;

import android.app.NotificationChannel; import
android.app.NotificationManager; import
android.app.PendingIntent; import
android.content.Intent;
import android.os.Build; import
android.os.Bundle; import
android.view.View;

public class MainActivity extends AppCompatActivity {

```

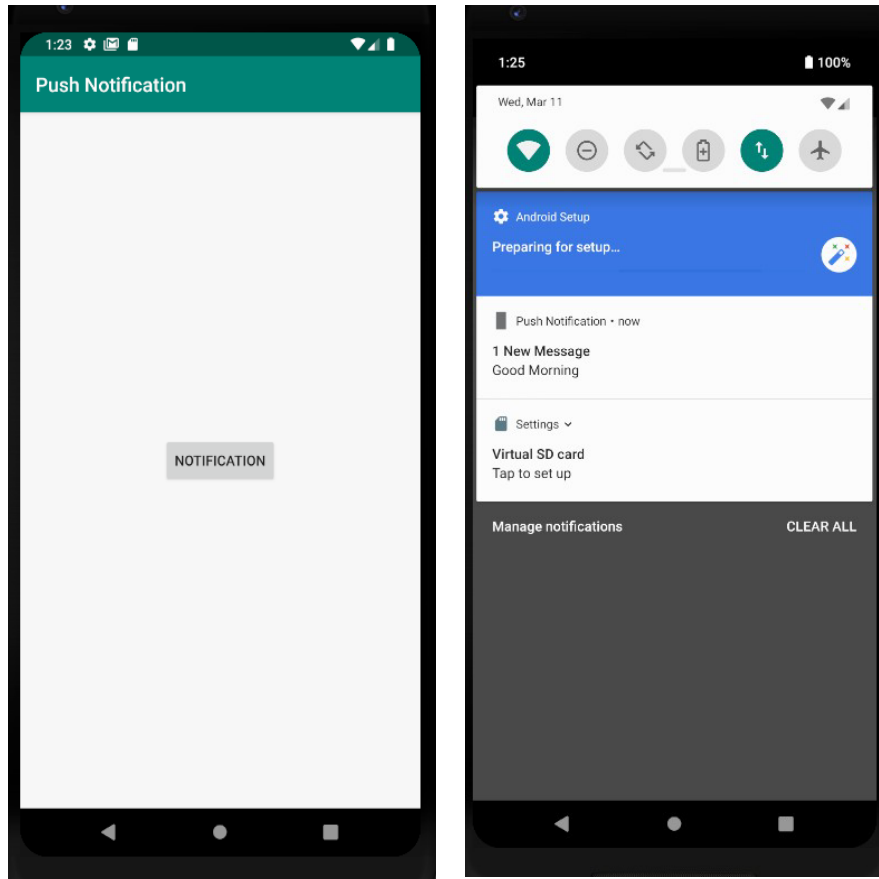
```

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

public void openNotification(View view)
{
    NotificationManager
manager=(NotificationManager)getSystemService(NOTIFICATION_SERVICE);
    if(Build.VERSION.SDK_INT>=Build.VERSION_CODES.O)
    {
        NotificationChannel mychannel=new NotificationChannel("default","My
Notification",NotificationManager.IMPORTANCE_DEFAULT);
        manager.createNotificationChannel(mychannel);
    }
    Intent intent=new Intent(this,MainActivity.class);
    PendingIntent
pd=PendingIntent.getActivity(this,1,intent,PendingIntent.FLAG_UPDATE_CURRENT);
    NotificationCompat.Builder notification=new
NotificationCompat.Builder(this,"default");
    notification.setContentTitle("1 New Message");
    notification.setContentText("Good Morning");
    notification.setSmallIcon(R.drawable.img);
    notification.setAutoCancel(true);
    notification.setContentIntent(pd);
    manager.notify(1,notification.build());
}
}

```


Output



Result

Implementation of the Custom Push Notification was done successfully.

Date:
Lab Session No.: 09

9.a. Implement Android Camera

Aim: Develop an android application to Implement Camera

Software's /IDE Tools:

Android Development Kit / Android Studio

Application User interface design:

Application Programming Interface:

API / PACKAGES	CLASSES / INTERFACES	METHODS	DESCRIPTION
import androidx.appcompat.app.AppCompatActivity;	AppCompatActivity	protected void onCreate(Bundle savedInstanceState)	onCreate(Bundle) is where you initialize your activity. When Activity is started and application is not loaded, then both onCreate() methods will be called.
import android.widget.Button;	Button	setOnClickListener()	setOnClickListener() performs the action present in it when button is pressed.

Code/Implementation:

// Develop an android application to Implement Camera

// Project Name : Camera

/*

Lab Session No.	: 09
Author	: SIRISHA
Date	:
Roll Number	: 188W5A0526
Description	: Implementation of
Softwares required	Camera
Topics Covered	: Android Studio
	: Camera

*/

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/btn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Take a photo" android:textStyle="bold"
        android:layout_centerHorizontal="true"
        android:layout_alignParentBottom="true"/>
    <ImageView
        android:layout_width="fill_parent"
        android:layout_height="fill_parent"
        android:id="@+id/capimg"
        android:layout_above="@+id/btn"/>

</RelativeLayout>

```

MainActivity.java

```

package com.example.camera;

import androidx.appcompat.app.AppCompatActivity; import
android.content.Intent;
import android.graphics.Bitmap;
import android.os.Bundle;
import android.provider.MediaStore; import
android.view.View;
import android.widget.Button; import
android.widget.ImageView; import
android.widget.Toast;

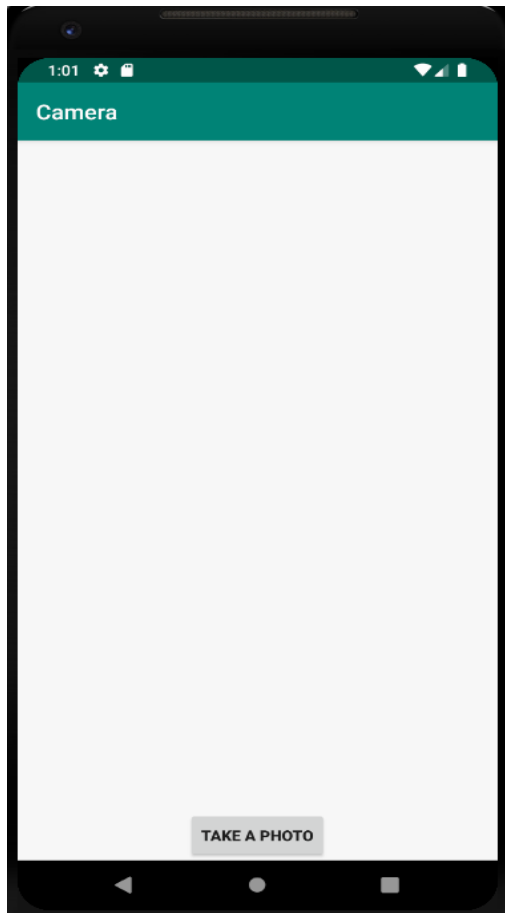
public class MainActivity extends AppCompatActivity {

    private Button btnCapture; private
    ImageView imgCapture;
    private static final int Image_Capture_Code = 1; @Override
    protected void onCreate(Bundle savedInstanceState)
    { super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main); btnCapture
        =(Button)findViewById(R.id.btn);
        imgCapture = (ImageView) findViewById(R.id.capimg);
        btnCapture.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent clnt = new Intent(MediaStore.ACTION_IMAGE_CAPTURE);
                startActivityForResult(clnt,Image_Capture_Code);
            }
        });
    }
}

```

```
        }  
    });  
}  
@Override  
protected void onActivityResult(int requestCode, int resultCode, Intent data)  
{  
    if (requestCode == Image_Capture_Code) { if  
        (resultCode == RESULT_OK) {  
            Bitmap bp = (Bitmap) data.getExtras().get("data");  
            imgCapture.setImageBitmap(bp);  
        } else if (resultCode == RESULT_CANCELED) { Toast.makeText(this, "Cancelled",  
            Toast.LENGTH_LONG).show();  
        }  
    }  
}  
}
```

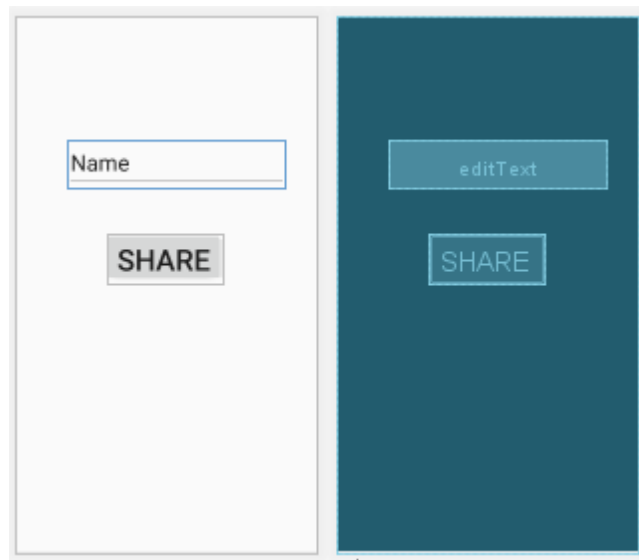
Output:



Result:
Implementation of the Camera was done successfully.

9.b) Implementation of Android Audio Player, Video Player**Aim:** Develop an android application to implement Audio Player, Video Player**Software's /IDE Tools:**

Android Development Kit / Android Studio

Application User interface design:**Application Programming Interface:**

API / PACKAGES	CLASSES / INTERFACES	METHODS	DESCRIPTION
import androidx.appcompat.app.AppCompatActivity;	AppCompatActivity	protected void onCreate(Bundle savedInstanceState)	onCreate(Bundle) is where you initialize your activity. When Activity is started and application is not loaded, then both onCreate() methods will be called.
import android.widget.Button;	Button	setOnClickListener()	setOnClickListener() performs the action present in it when button is pressed.

Code/Implementation:

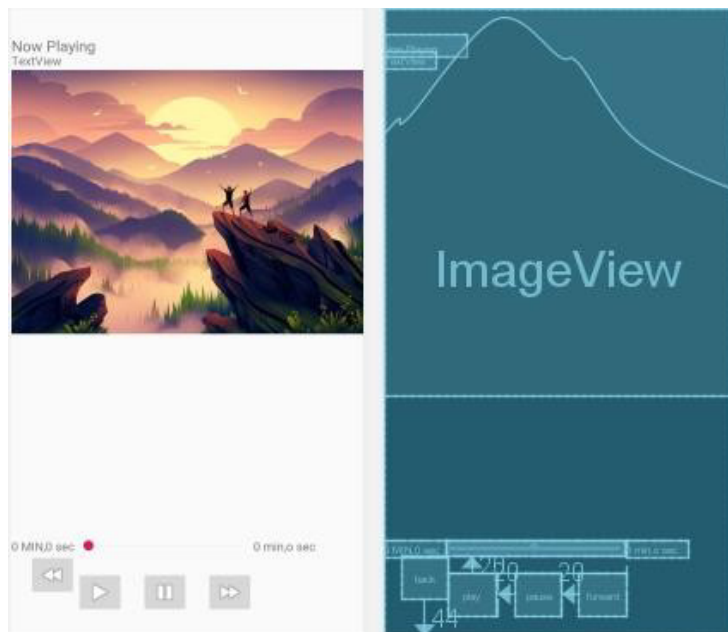
// Develop an android application to demonstrate Audio Player, Video Player

// Project Name : Media

/*

Lab Session No.	09
Author	: SIRISHA
Date	:
Roll Number	: 188W5A0526
Description	: Implementation of Audio Player, Video Player
Softwares required	: Android Studio
Topics Covered	: Audio Player, Video Player

*/

(i) Audio Player**Application User interface design:****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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/tv1" android:text="Now
        Playing" android:layout_marginTop="30dp"
        android:textAppearance="?android:attr/textAppearanceMedium"/>
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/sname"
        android:layout_marginTop="50dp"
        android:text="TextView"/>
    <ImageView

```

```

        android:layout_width="match_parent"
        android:layout_height="450dp"
        android:id="@+id/logo"
        android:src="@drawable/land"/>
<ImageButton
    android:layout_width="wrap_content"
    android:layout_height="wrap_content" android:id="@+id/back"
    android:layout_alignParentBottom="true"
    android:layout_marginBottom="44dp"
    android:layout_marginLeft="20dp"
    android:src="@android:drawable/ic_media_rew"/>
<ImageButton
    android:layout_width="wrap_content"
    android:layout_height="wrap_content" android:id="@+id/play"
    android:layout_marginTop="20dp"
    android:layout_alignTop="@+id/back"
    android:layout_toRightOf="@+id/back"
    android:src="@android:drawable/ic_media_play"/>
<ImageButton
    android:layout_width="wrap_content"
    android:layout_height="wrap_content" android:id="@+id/pause"
    android:layout_alignTop="@+id/play"
    android:layout_marginLeft="20dp"
    android:layout_toRightOf="@+id/play"
    android:src="@android:drawable/ic_media_pause"/>
<ImageButton
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/forward"
    android:layout_alignTop="@+id/pause"
    android:layout_marginLeft="20dp"
    android:layout_toRightOf="@+id/pause"
    android:contentDescription="@+id/imageButton3"
    android:src="@android:drawable/ic_media_ff"/>
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/starttime"
    android:layout_alignTop="@+id/sbar"
    android:text="0 MIN,0 sec"/>
<SeekBar
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/sbar" android:layout_above="@+id/back"
    android:layout_toLeftOf="@+id/songtime"
    android:layout_toRightOf="@+id/starttime"/>
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/songtime"
    android:layout_toRightOf="@+id/forward"
    android:layout_alignTop="@+id/sbar" android:text="0
min,0 sec"/>

</RelativeLayout>

```


MainActivity.java

```

package com.example.audioplayer;
import androidx.appcompat.app.AppCompatActivity; import
android.media.MediaPlayer;
import android.os.Bundle; import
android.os.Handler; import
android.view.View;
import android.widget.ImageButton; import
android.widget.SeekBar; import
android.widget.TextView; import
android.widget.Toast;

import java.security.interfaces.RSAKey; import
java.util.concurrent.TimeUnit;

public class MainActivity extends AppCompatActivity {
    private ImageButton forwardbtn, backwardbtn, pausebtn, playbtn; private MediaPlayer
    mPlayer;
    private TextView songName, startTime, songTime; private
    SeekBar songPrgs;
    private static int oTime =0, sTime =0, eTime =0, fTime = 5000, bTime = 5000; private Handler hdlr = new
    Handler();

    @Override
    protected void onCreate(Bundle savedInstanceState)
    { super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      backwardbtn = (ImageButton) findViewById(R.id.back); forwardbtn =
      (ImageButton) findViewById(R.id.forward); playbtn = (ImageButton)
      findViewById(R.id.play); pausebtn = (ImageButton)
      findViewById(R.id.pause); songName = (TextView)
      findViewById(R.id.sname); startTime = (TextView)
      findViewById(R.id.starttime); songTime = (TextView)
      findViewById(R.id.songtime); songName.setText("Undipova song");
      mPlayer=MediaPlayer.create(MainActivity.this,R.raw.undipova); songPrgs =
      (SeekBar) findViewById(R.id.sbar); songPrgs.setClickable(false);
      pausebtn.setEnabled(false); playbtn.setOnClickListener(new
      View.OnClickListener() {
          @Override
          public void onClick(View v) { Toast.makeText(MainActivity.this, "Playing
              Audio",
                  Toast.LENGTH_SHORT).show();
              mPlayer.start();
              eTime = mPlayer.getDuration();
              sTime = mPlayer.getCurrentPosition(); if (oTime
              == 0) {
                  songPrgs.setMax(eTime);
                  oTime = 1;
              }
              songTime.setText(String.format("%d min, %d sec",
                  TimeUnit.MILLISECONDS.toMinutes(eTime),
                  TimeUnit.MILLISECONDS.toSeconds(eTime) -
                  TimeUnit.MINUTES.toSeconds(TimeUnit.MILLISECONDS.toMinutes(eTime))));
              startTime.setText(String.format("%d min, %d sec",
                  TimeUnit.MILLISECONDS.toMinutes(sTime),
                  TimeUnit.MILLISECONDS.toSeconds(sTime) -
                  TimeUnit.MINUTES.toSeconds(TimeUnit.MILLISECONDS.toMinutes(sTime))));
              songPrgs.setProgress(sTime);
              hdlr.postDelayed(UpdateSongTime, 100);
              pausebtn.setEnabled(true);
              playbtn.setEnabled(false);
          }
      });
    }
  
```

```

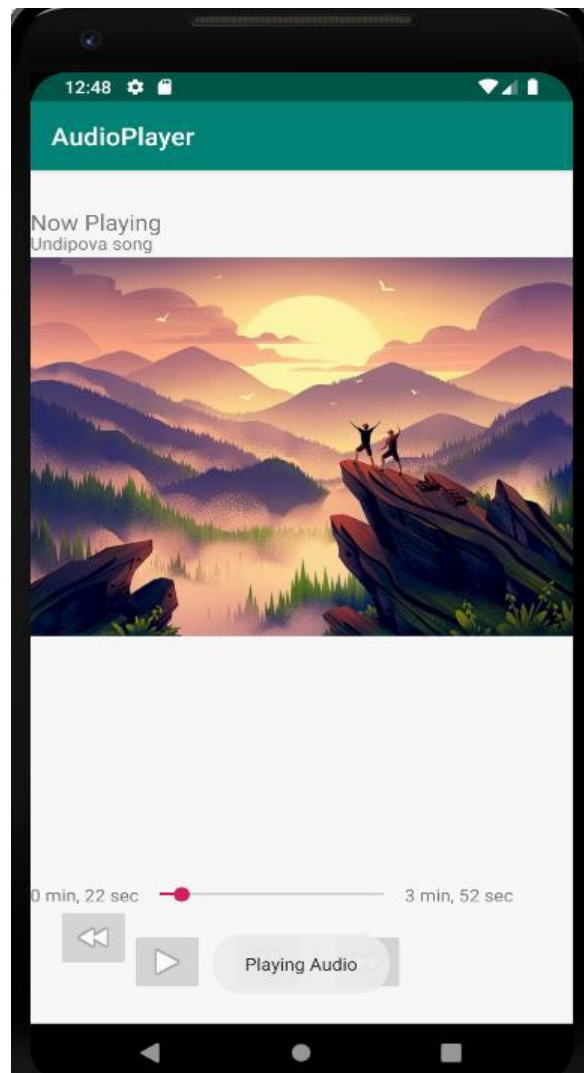
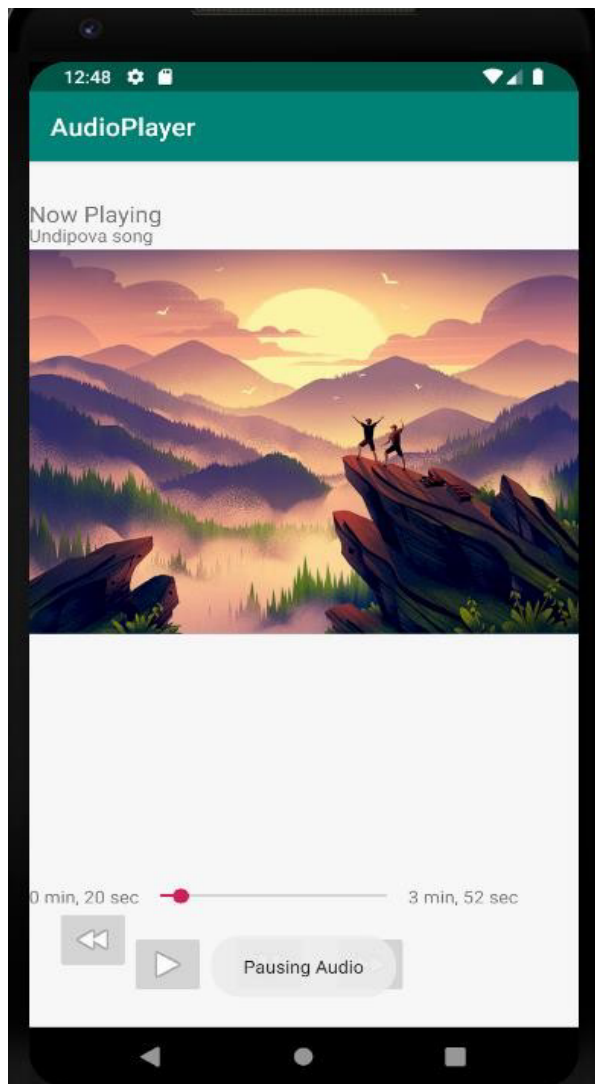
    }
});
pausebtn.setOnClickListener(new View.OnClickListener() { @Override
    public void onClick(View v)
    { mPlayer.pause();
      pausebtn.setEnabled(false);
      playbtn.setEnabled(true);
      Toast.makeText(getApplicationContext(), "Pausing Audio",
        Toast.LENGTH_SHORT).show();

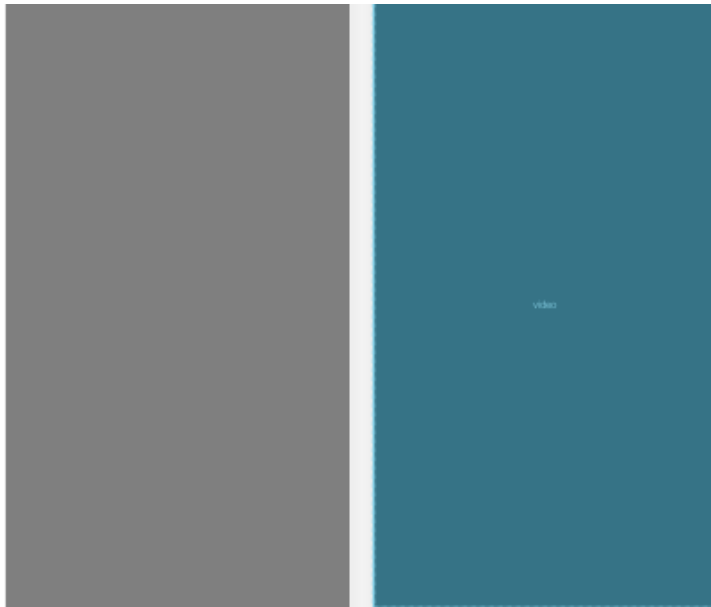
    }
});
forwardbtn.setOnClickListener(new View.OnClickListener() { @Override
    public void onClick(View v) {
        if ((sTime + fTime) <= eTime) { sTime =
            sTime + fTime;
            mPlayer.seekTo(sTime);
        } else {
            Toast.makeText(getApplicationContext(), "Cannot
              jump forward 5 seconds",
Toast.LENGTH_SHORT).show();
        }
        if (!playbtn.isEnabled())
            { playbtn.setEnabled(true);
        }
    }
});
backwardbtn.setOnClickListener(new View.OnClickListener() { @Override
    public void onClick(View v) { if ((sTime -
        bTime) > 0) {
            sTime = sTime - bTime; mPlayer.seekTo(sTime);
        } else {
            Toast.makeText(getApplicationContext(), "Cannot jump backward
5 seconds", Toast.LENGTH_SHORT).show();
        }
        if (!playbtn.isEnabled())
            { playbtn.setEnabled(true);
        }
    }
});
}

private Runnable UpdateSongTime = new Runnable() { @Override
    public void run() {
        sTime = mPlayer.getCurrentPosition();
        startTime.setText(String.format("%d min, %d sec",
TimeUnit.MILLISECONDS.toMinutes(sTime),
        TimeUnit.MILLISECONDS.toSeconds(sTime) -
TimeUnit.MINUTES.toSeconds(TimeUnit.MILLISECONDS.toMinutes(sTime))));
        songPrgs.setProgress(sTime);
        hdlr.postDelayed(this, 100);
    }
};
}

```

Output



(i) Video Player**Application User interface design:****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">
    <VideoView
        android:id="@+id/video"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_gravity="center"/>
</RelativeLayout>
```

MainActivity.java

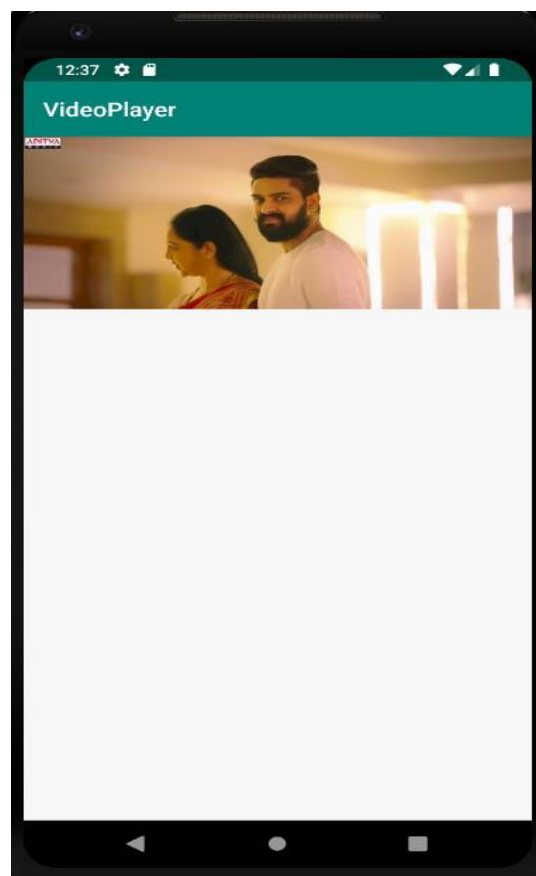
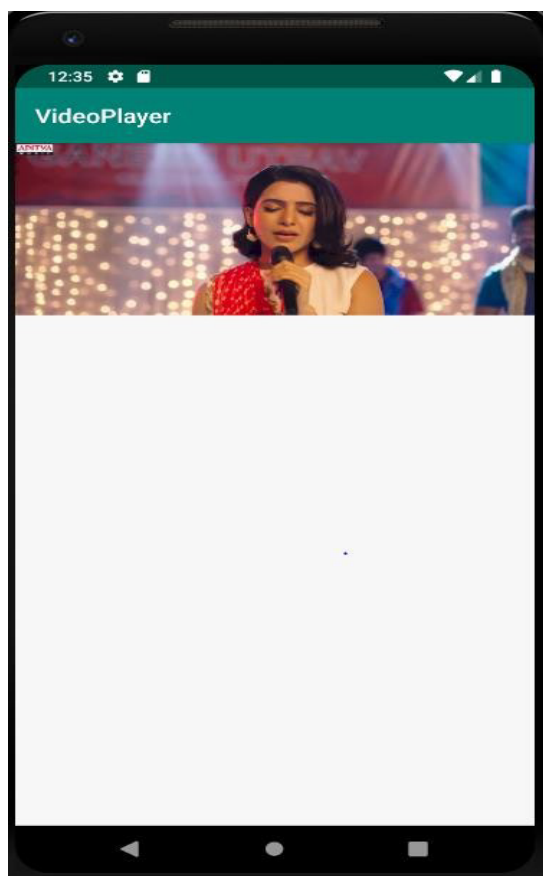
```
package com.example.videoplayer;

import androidx.appcompat.app.AppCompatActivity; import
android.net.Uri;
import android.os.Bundle;
import android.widget.MediaController; import
android.widget.VideoView;

public class MainActivity extends AppCompatActivity { @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

```
setContentView(R.layout.activity_main);
VideoView videoView =(VideoView)findViewById(R.id.video); MediaController
mediaController= new MediaController(this);
mediaController.setAnchorView(videoView);
Uri uri = Uri.parse("android.resource://" + getPackageName() + "/" + R.raw.video);
//Starting VideoView By Setting MediaController and URI
videoView.setMediaController(mediaController);
videoView.setVideoURI(uri);
videoView.requestFocus();
videoView.start();
    }
}
```

Output:



Result:

Implementation of the Audio Player and Video Player were done successfully.

Date:
Lab Session No.: 10

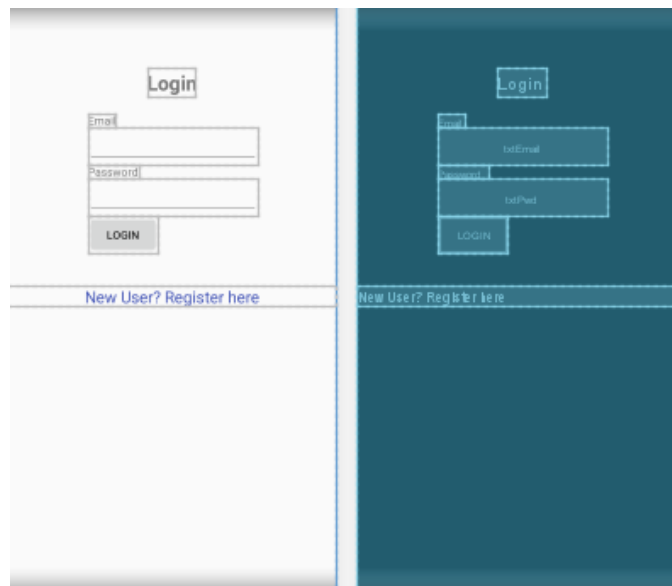
Aim: Develop an android application to implement login and registration screens.

Software's /IDE Tools:

Android Development Kit / Android Studio

Application User interface design:

Application Programming Interface:



API / PACKAGES	CLASSES / INTERFACES	METHODS	DESCRIPTION
import android.support.design.widget.TextInputLayout; import android.support.design.widget.TextInputEditText;	AppCompatActivity	protected void onCreate(Bundle savedInstanceState)	onCreate(Bundle) is where you initialize your activity. When Activity is started and application is not loaded, then both onCreate() methods will be called.
import android.support.design.widget.Button;	Button	setOnClickListener()	setOnClickListener() performs the action present in it when button is pressed.

Code/Implementation:

// Develop an android application to implement login and registration screens.

// Project Name : LoginRegistration

/*

Lab Session No.	10
Author	: SIRISHA
Date	:
Roll Number	: 188W5A0526
Description	: Implementation of Registration and Login
Softwares required	: Android Studio
Topics Covered	: Explicit Intent

*/

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical" android:layout_width="match_parent"
    android:layout_height="match_parent">
    <TextView
        android:id="@+id/loginscrn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="80dp"
        android:text="Login" android:textSize="25dp"
        android:textStyle="bold"
        android:layout_gravity="center"/>
    <TextView
        android:id="@+id/fstTxt"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="100dp"
        android:layout_marginTop="20dp"
        android:text="Email"/>
    <EditText
        android:id="@+id/txtEmail"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="100dp"
        android:ems="10"/>
    <TextView
        android:id="@+id/secTxt"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Password"
        android:layout_marginLeft="100dp" />
    <EditText
        android:id="@+id/txtPwd"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="100dp"
        android:inputType="textPassword"
        android:ems="10" />
    <Button
        android:id="@+id/btnLogin"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```

        android:layout_marginLeft="100dp"
        android:text="Login" />
    <TextView
        android:id="@+id/lnkRegister"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="40dp"
        android:text="New User? Register here"
        android:gravity="center" android:textSize="20dp"
        android:textColor="#3F51B5"/>
</LinearLayout>

```

MainActivity.java

```

package com.example.loginregister;

import androidx.appcompat.app.AppCompatActivity; import
android.content.Intent;
import android.os.Bundle;
import android.text.method.LinkMovementMethod; import
android.view.View;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity { @Override
    protected void onCreate(Bundle savedInstanceState)
    { super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      TextView register = (TextView)findViewById(R.id.lnkRegister);
      register.setMovementMethod(LinkMovementMethod.getInstance());

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

          }
      });
    }
}

```

registration.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical" android:layout_width="match_parent"
    android:layout_height="match_parent">
    <TextView
        android:id="@+id/loginscrn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="80dp"
        android:text="Registration"
        android:textSize="25dp" android:textStyle="bold"
        android:layout_gravity="center"/>

```



```

<TextView
    android:id="@+id/fstTxt"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="100dp"
    android:layout_marginTop="20dp"
    android:text="Full Name"/>
<EditText
    android:id="@+id/txtName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="100dp"
    android:ems="10"/>
<TextView
    android:id="@+id/secTxt"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Email"
    android:layout_marginLeft="100dp" />
<EditText
    android:id="@+id/txtEmail"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="100dp"
    android:ems="10" />
<TextView
    android:id="@+id/thirdTxt"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Password"
    android:layout_marginLeft="100dp" />
<EditText
    android:id="@+id/txtPwd"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="100dp"
    android:inputType="textPassword"
    android:ems="10" />
<Button
    android:id="@+id/btnLogin"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="100dp"
    android:text="Login" />
<TextView android:id="@+id/lnkLogin"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="40dp" android:text="Already
Registered? Login here" android:gravity="center"
    android:textSize="20dp" android:textColor="#3F51B5"
    android:onClick="test"/>
</LinearLayout>

```

RegistrationActivity.java

```

package com.example.loginregister; import
android.content.Intent; import
android.os.Bundle;
import android.text.method.LinkMovementMethod; import
android.view.View;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class Registrationactivity extends AppCompatActivity { @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.registration);
        TextView login = (TextView)findViewById(R.id.lnkLogin);
        login.setMovementMethod(LinkMovementMethod.getInstance());
        login.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(Registrationactivity.this, MainActivity.class);
                startActivity(intent);
            }
        });
    }
}

```

AndroidManifest.xml

```

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

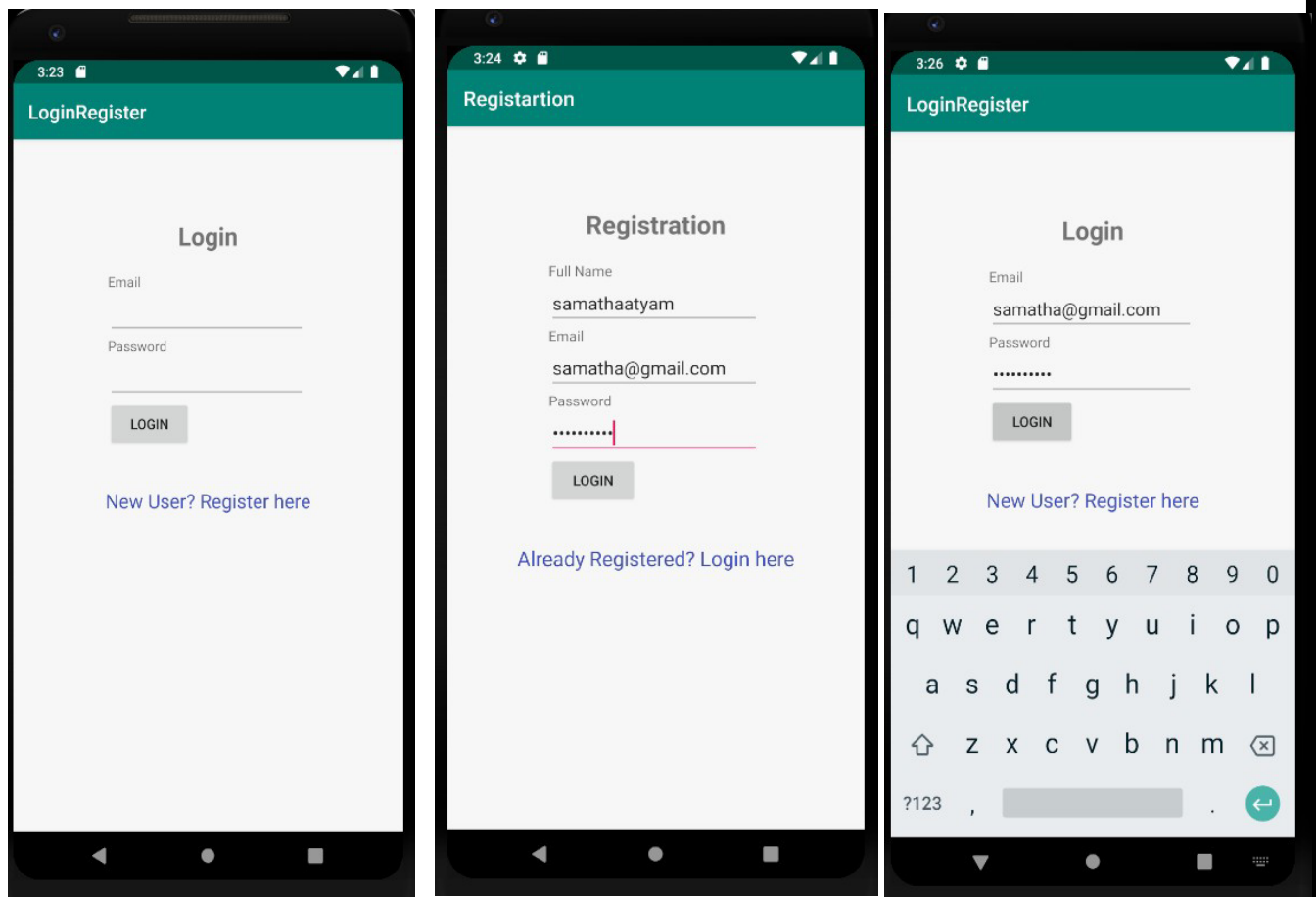
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">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

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

</manifest>

```

Output:



Result:

Implementation of the Login and Registration screens was done successfully.

Date:
Lab Session No.: 11

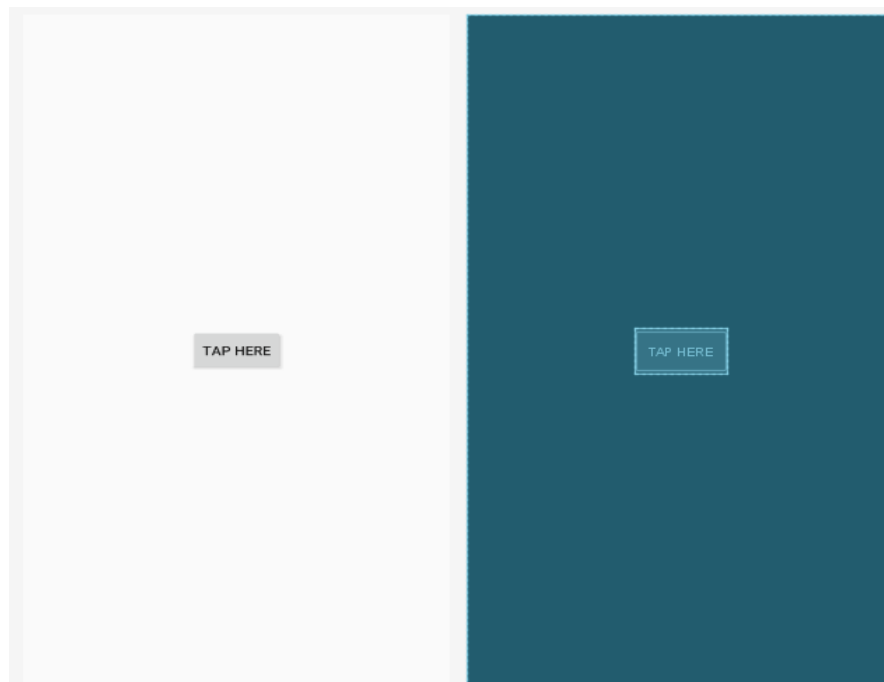
11. Develop an android application to implement Android Tabs Layout

Aim: Develop an android application to Implement Tabs

Layout Software's /IDE Tools:

Android Development Kit / Android Studio

Application User interface design:



Application Programming Interface:

API / PACKAGES	CLASSES / INTERFACES	METHODS	DESCRIPTION
import androidx.appcompat.app.AppCompatActivity;	AppCompatActivity	protected void onCreate(Bundle savedInstanceState)	onCreate(Bundle) is where you initialize your activity. When Activity is started and application is not loaded, then both onCreate() methods will be called.
import android.widget.Button;	Button	setOnClickListener()	setOnClickListener() performs the action present in it when button is pressed.

Code/Implementation:

// Develop an android application to Implement Tabs Layout

// Project Name : Tabs

/*

Lab Session No.	11
Author	: SIRISHA
Date	:
Roll Number	: 188W5A0526
Description	: Implementation of Tabs Layout
Softwares required	: Android Studio
Topics Covered	: Tabs Layout

*/

MainActivity.java**package** com.example.tabs;**import** androidx.appcompat.app.AppCompatActivity;**import** androidx.appcompat.widget.Toolbar;**import** androidx.viewpager.widget.ViewPager;**import** android.os.Bundle;//import com.google.android.support.design:26.1.0; **import**com.google.android.material.tabs.TabLayout; **public class** MainActivity**extends** AppCompatActivity {**@Override****protected void** onCreate(Bundle savedInstanceState)

```

    { super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      Toolbar toolbar = (Toolbar)findViewById(R.id.tool_bar);
      setSupportActionBar(toolbar);

```

```

      TabLayout tabLayout = (TabLayout) findViewById(R.id.tab_layout);
      tabLayout.addTab(tabLayout.newTab().setText("Home"));
      tabLayout.addTab(tabLayout.newTab().setText("About"));
      tabLayout.addTab(tabLayout.newTab().setText("Contact"));
      tabLayout.setTabGravity(TabLayout.GRAVITY_FILL);

```

final ViewPager viewPager =(ViewPager)findViewById(R.id.**view_pager**);

```

      TabsAdapter tabsAdapter = new TabsAdapter(getSupportFragmentManager(),
          tabLayout.getTabCount());
      viewPager.setAdapter(tabsAdapter);
      viewPager.addOnPageChangeListener(new TabLayout.
          TabLayoutOnPageChangeListener(tabLayout));

```

```

      tabLayout.addOnTabSelectedListener(new TabLayout.OnTabSelectedListener()
      {

```

@Override**public void** onTabSelected(TabLayout.Tab tab)

```

        {
            viewPager.setCurrentItem(tab.getPosition());
        }
        @Override
        public void onTabUnselected(TabLayout.Tab tab)
        {

        }
        @Override
        public void onTabReselected(TabLayout.Tab tab)
        {

        }
    }
});
}
}

```

activity_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    android:id="@+id/main_layout"
    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">

    <android.support.v7.widget.Toolbar
        android:id="@+id/tool_bar"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:background="?attr/colorPrimary"
        android:elevation="6dp"
        android:minHeight="?attr/actionBarSize"
        android:theme="@style/ThemeOverlay.AppCompat.Dark.ActionBar"
        app:popupTheme="@style/ThemeOverlay.AppCompat.Light"/>

    <android.support.design.widget.TabLayout android:id="@+id/tab_layout"
        android:layout_width="match_parent" android:layout_height="wrap_content"
        android:layout_below="@+id/tool_bar" android:background="?attr/colorPrimary"
        android:elevation="6dp" android:minHeight="?attr/actionBarSize"
        android:theme="@style/ThemeOverlay.AppCompat.Dark.ActionBar"/>

    <android.support.v4.view.ViewPager
        android:id="@+id/view_pager"
        android:layout_width="match_parent"
        android:layout_height="fill_parent"
        android:layout_below="@id/tab_layout"/>

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Tap here"/>
</RelativeLayout>

```


homelayout.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent" android:layout_height="match_parent"
    android:orientation="vertical">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:text="Home Tab"
        android:textAppearance="?android:attr/textAppearanceLarge"/>
</RelativeLayout>
```

HomeFragment.java

```
package com.example.tabs;

//import android.app.Fragment;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import androidx.fragment.app.Fragment;
public class HomeFragment extends Fragment
{
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup viewGroup, Bundle savedInstanceState)
    {
        return inflater.inflate(R.layout.homelayout, viewGroup, false);
    }
}
```

aboutlayout.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent" android:layout_height="match_parent"
    android:orientation="vertical">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:text="About Tab"
        android:textAppearance="?android:attr/textAppearanceLarge"/>
</RelativeLayout>
```

AboutFragment.java

```
package com.example.tabs;

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

import androidx.fragment.app.Fragment;
```

```

public class AboutFragment extends Fragment
{
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup viewGroup, Bundle savedInstanceState)
    {
        return inflater.inflate(R.layout.aboutlayout, viewGroup, false);
    }
}

```

contactlayout.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent" android:layout_height="match_parent"
    android:orientation="vertical">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true" android:text="Contact
        Tab"
        android:textAppearance="?android:attr/textAppearanceLarge"/>
</RelativeLayout>

```

ContactFragment.java

```

package com.example.tabs;

```

```

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

```

```

import androidx.fragment.app.Fragment;

```

```

public class ContactFragment extends Fragment
{
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup viewGroup, Bundle savedInstanceState)
    {
        return inflater.inflate(R.layout.contactlayout, viewGroup, false);
    }
}

```

TabsAdapter.java

```

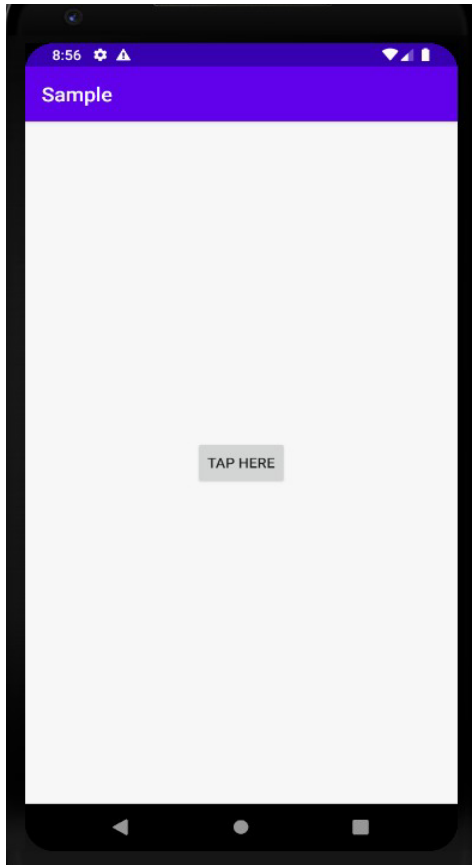
package com.example.tabs;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentStatePagerAdapter;

public class TabsAdapter extends FragmentStatePagerAdapter
{
    int mNumOfTabs;
    public TabsAdapter(FragmentManager fm, int NoofTabs)
    {
        super(fm);
        this.mNumOfTabs = NoofTabs;
    }
    @Override

```

```
public int getCount()
{
    return mNumOfTabs;
}
@Override
public Fragment getItem(int position)
{
    switch (position)
    {
        case 0:
            HomeFragment home1 = new HomeFragment();
            return home1;
        case 1:
            AboutFragment about = new AboutFragment();
            return about;
        case 2:
            ContactFragment contact = new ContactFragment();
            return contact;
        default:
            return null;
    }
}
```

Output:



Result:

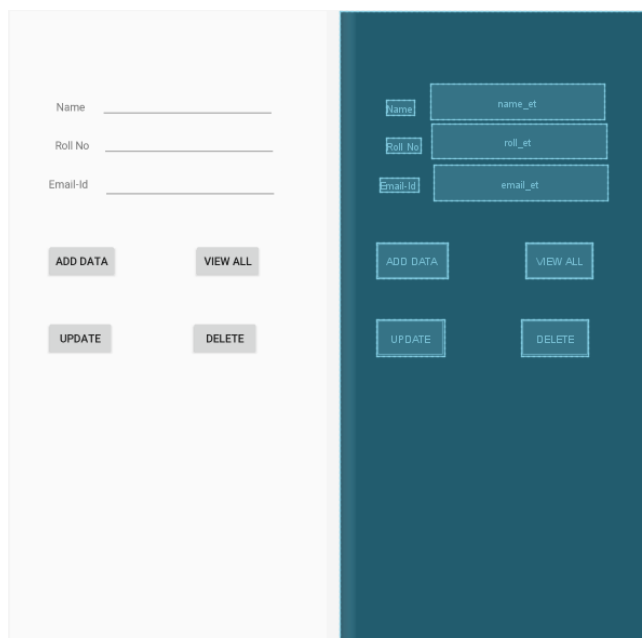
Implementation of the Tabs Layout was done successfully.

Date:

Lab Session No.: 12

Aim: Develop an android application using SQLite to perform CRUD Operations.**Software's /IDE Tools:**

Android Development Kit / Android Studio

Application User interface design:**Application Programming Interface:**

API / PACKAGES	CLASSES / INTERFACES	METHODS	DESCRIPTION
import androidx.appcompat.app.AppCompatActivity;	AppCompatActivity	protected void onCreate(Bundle savedInstanceState)	onCreate(Bundle) is where you initialize your activity. When Activity is started and application is not loaded, then both onCreate() methods will be called.
import android.widget.Button;	Button	setOnClickListener()	setOnClickListener() performs the action present in it when button is pressed.

import android. w idget.Edi t Text;	EditText	getText()	Determines the minimum type that getText() will return. If set, specifies that this TextView has a textual input method and should automatically capitalize what the user types.
---	----------	-----------	--

Code/Implementation:

// Develop an android application using SQLite to perform CRUD Operations

// Project Name : Sqlite App

/*

Lab Session No.	12
Author	: SIRISHA
Date	:
Roll Number	: 188W5A0526
Description	: Performing CURD Operations
Softwares required	: Android Studio
Topics Covered	: Sqlite Database

*/

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="wrap_content"
android:layout_height="wrap_content"
tools:context=".MainActivity">

    <TextView
        android:id="@+id/name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="54dp"
        android:layout_marginTop="61dp" android:text="Name"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/name_et" android:layout_width="226dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="52dp"
        android:layout_marginTop="49dp"
        app:layout_constraintStart_toEndOf="@+id/name"
        app:layout_constraintTop_toTopOf="parent" />

    <TextView
        android:id="@+id/roll" android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="46dp"
        android:layout_marginTop="45dp" android:text="Roll No"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/name" />

```

```

<EditText
    android:id="@+id/roll_et" android:layout_width="226dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="52dp" android:layout_marginTop="16dp"
    app:layout_constraintStart_toEndOf="@+id/roll"
    app:layout_constraintTop_toBottomOf="@+id/name_et" />

<TextView
    android:id="@+id/email" android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="46dp"
    android:layout_marginBottom="65dp" android:text="Email-Id"
    app:layout_constraintBottom_toTopOf="@+id/view"
    app:layout_constraintStart_toStartOf="parent" />

<EditText
    android:id="@+id/email_et" android:layout_width="226dp"
    android:layout_height="wrap_content"
    android:layout_marginStart="48dp" android:layout_marginTop="26dp"
    app:layout_constraintStart_toEndOf="@+id/email"
    app:layout_constraintTop_toBottomOf="@+id/roll_et" />

<Button
    android:id="@+id/view"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="59dp"
    android:layout_marginTop="49dp" android:text="View All"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/email_et" />

<Button
    android:id="@+id/delete" android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="59dp"
    android:layout_marginTop="39dp" android:text="Delete"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/view" />

<Button
    android:id="@+id/add" android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="71dp"
    android:layout_marginTop="49dp" android:text="ADD Data"
    app:layout_constraintStart_toEndOf="@+id/view"
    app:layout_constraintTop_toBottomOf="@+id/email_et" />

<Button
    android:id="@+id/update" android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="78dp"
    android:layout_marginTop="39dp" android:text="Update"
    app:layout_constraintStart_toEndOf="@+id/delete"

```

```
app:layout_constraintTop_toBottomOf="@+id/add" />
```

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

MainActivity.java

```
package com.example.sqliteapp; import
android.app.AlertDialog; import
android.database.Cursor; import
android.os.Bundle; import
android.view.Menu; import
android.view.MenuItem; import
android.view.View; import
android.widget.Button; import
android.widget.EditText; import
android.widget.TextView; import
android.widget.Toast;
```

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

```
import android.os.Bundle;
public class MainActivity extends AppCompatActivity { DatabaseHelper
    myDb;
    EditText editName, editEmail, editId; Button
    btnAddData;
    Button btnviewAll; Button
    btnDelete; Button
    btnviewUpdate; TextView tv;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState)
```

```
{ super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    myDb = new DatabaseHelper(this);
```

```
    editName = (EditText) findViewById(R.id.name_et); editId = (EditText)
    findViewById(R.id.roll_et); editEmail = (EditText)
    findViewById(R.id.email_et); btnAddData = (Button)
    findViewById(R.id.add); btnviewAll = (Button) findViewById(R.id.view);
    btnviewUpdate = (Button) findViewById(R.id.update); btnDelete =
    (Button) findViewById(R.id.delete);
```

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

```
        @Override
```

```
        public void onClick(View v) { Integer
```

```
            deletedRows =
```

```
myDb.deleteData(editId.getText().toString());
```

```
            if (deletedRows > 0) Toast.makeText(MainActivity.this,
                "Data
```

```
Deleted", Toast.LENGTH_LONG).show();
```

```
            else
```

```
                Toast.makeText(MainActivity.this, "Data
```

```
not Deleted", Toast.LENGTH_LONG).show();
```

```
        }
```

```
    }
```

```
);
```

```
    btnviewUpdate.setOnClickListener( new
```

```
        View.OnClickListener() {
```

```
            @Override
```

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

```
                boolean isUpdate = myDb.updateData(editName.getText().toString(),
                editId.getText().toString(), editEmail.getText().toString());
```

```
                if (isUpdate == true) Toast.makeText(MainActivity.this, "Data Updated",
                Toast.LENGTH_LONG).show();
```



```

        else
            Toast.makeText(MainActivity.this, "Data not Updated",
Toast.LENGTH_LONG).show();
    }

    );

    btnAddData.setOnClickListener(
        new View.OnClickListener()
        { @Override
        public void onClick(View v) {
            boolean isInserted = myDb.insertData(editName.getText().toString(),
editId.getText().toString(), editEmail.getText().toString());
            if (isInserted == true) Toast.makeText(MainActivity.this, "Data Inserted",
Toast.LENGTH_LONG).show();
            else
                Toast.makeText(MainActivity.this, "Data not Inserted",
Toast.LENGTH_LONG).show();
        }
    );

    btnviewAll.setOnClickListener(
        new View.OnClickListener()
        { @Override
        public void onClick(View v) { Cursor res =
            myDb.getAllData(); if (res.getCount() == 0)
            {

                tv.setText("Nothing found"); return;
            }

            StringBuffer buffer = new StringBuffer();
            while (res.moveToNext()) {
                buffer.append("Name : " + res.getString(0) + "\n"); buffer.append("Id : "
+ res.getString(1) + "\n"); buffer.append("Email : " + res.getString(2) +
"\n");
            }
            showMessage("Student Data", buffer.toString());
        }
    );
}

public void showMessage(String title, String Message) { AlertDialog.Builder builder =
    new AlertDialog.Builder(this); builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(Message);
    builder.show();
}
}

```

DatabaseHelper.java

```

package com.example.sqliteapp; import
android.content.ContentValues; import
android.content.Context; import
android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

public class DatabaseHelper extends SQLiteOpenHelper {

```

```

public static final String DATABASE_NAME = "Student.db"; public static
final String TABLE_NAME = "students"; public static final String COL_1 =
"NAME";
public static final String COL_2 = "ID"; public static final
String COL_3 = "EMAIL";

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

@Override
public void onCreate(SQLiteDatabase db) {
    db.execSQL("create table " + TABLE_NAME + " (NAME TEXT,ID TEXT,EMAIL TEXT)");
}

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

public boolean insertData(String name,String id,String email) { SQLiteDatabase db =
    this.getWritableDatabase(); ContentValues contentValues = new
    ContentValues(); contentValues.put(COL_1,name);
    contentValues.put(COL_2,id); contentValues.put(COL_3,email);
    long result = db.insert(TABLE_NAME,null ,contentValues);
    if(result == -1)
        return false;
    else
        return true;
}

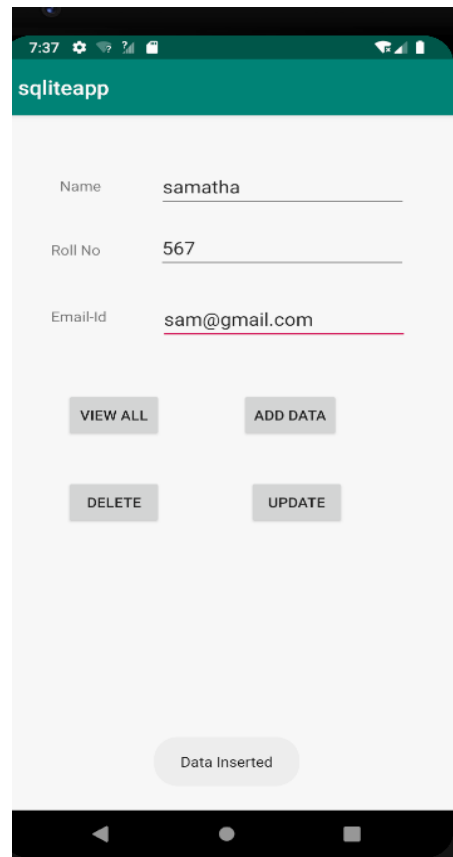
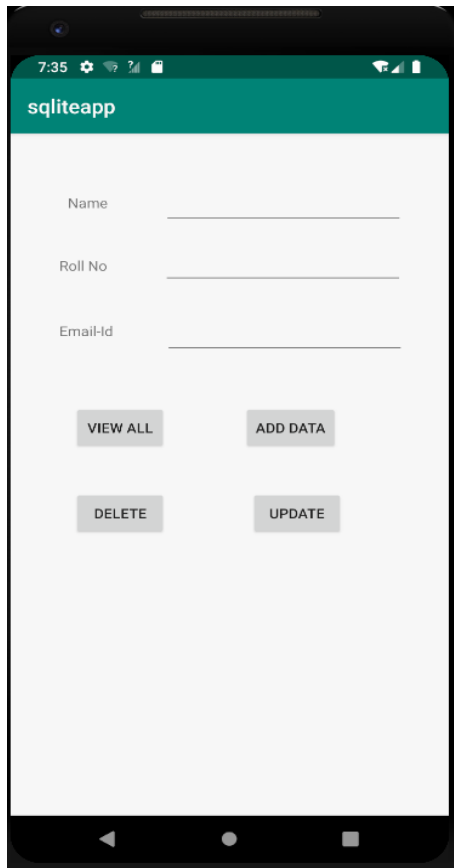
public Cursor getAllData() {
    SQLiteDatabase db = this.getWritableDatabase();
    Cursor res = db.rawQuery("select * from " + TABLE_NAME,null); return res;
}

public boolean updateData(String name,String id,String email) { SQLiteDatabase db =
    this.getWritableDatabase(); ContentValues contentValues = new
    ContentValues(); contentValues.put(COL_1,name);
    contentValues.put(COL_2,id); contentValues.put(COL_3,email);
    db.update(TABLE_NAME, contentValues, "ID = ?",new String[] { id });
    return true;
}

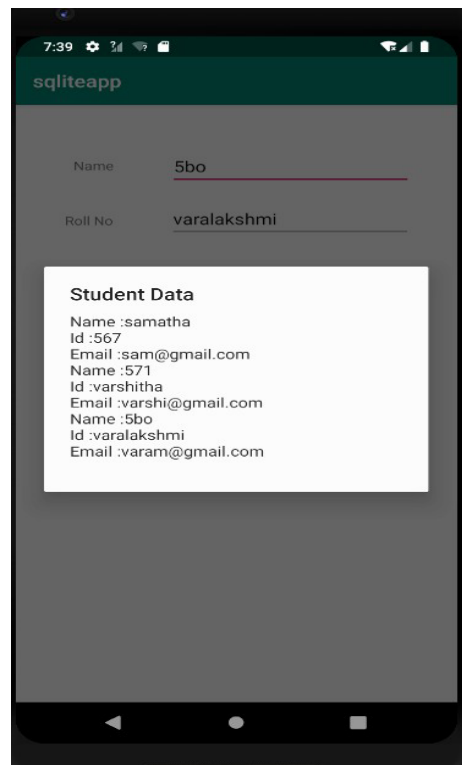
public Integer deleteData (String id) { SQLiteDatabase db =
    this.getWritableDatabase();
    return db.delete(TABLE_NAME, "ID = ?",new String[] {id});
}
}

```

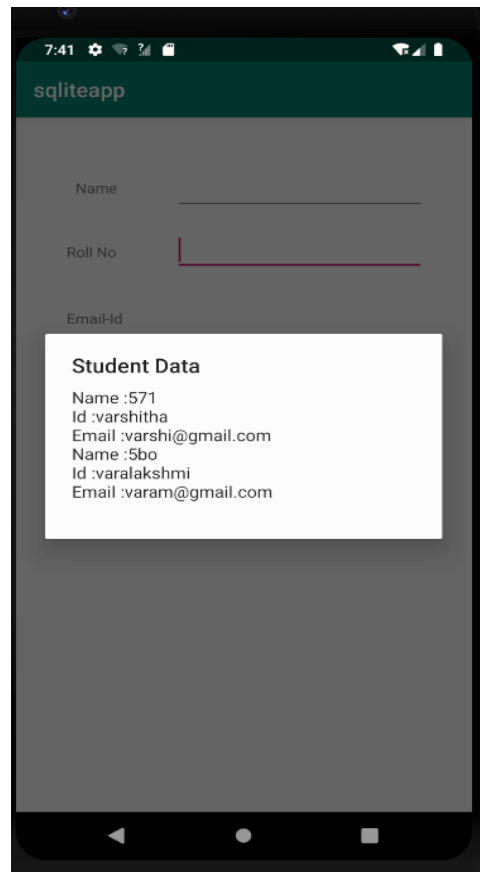
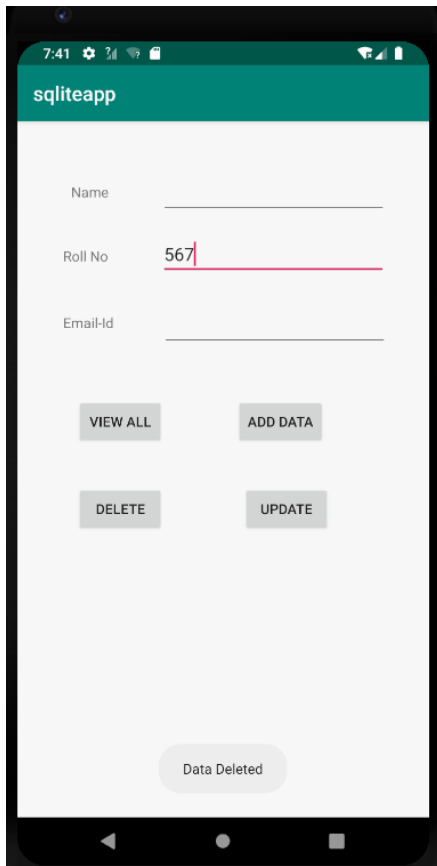
Output: Inserting Data



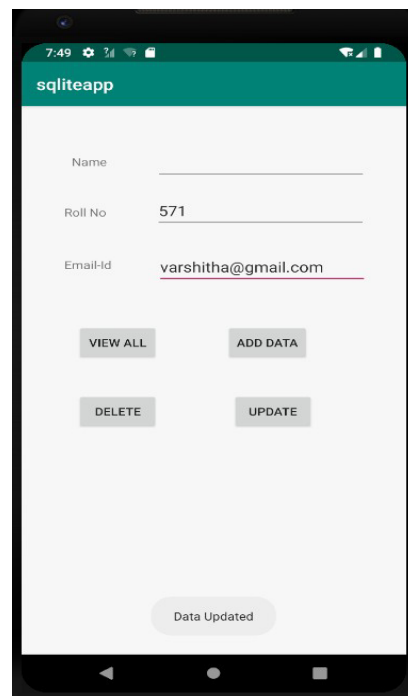
Viewing Data:



Deleting Data:



Updating Data



Result:

Performing CURD operations using Sqlite was done successfully.