

ANDROID TUTORIAL



L - 6

3rd Sem, MCA

LAB - 5

L5

9. Create an android application to display a list of bank names in a **spinner** and when you select the particular bank name, the logo and IFSC-code of the selected bank should be displayed using **custom toast**.
10. Create an android application to depict the option **menu** with following features:
 - a) Toast menu option to display a Toast message.
 - b) Exit menu to **close** the App.
 - c) President menu should open a new activity with two **fragments**. First fragment should contain a **listview** of all presidents of Independent India.
 - d) When you select any president's name, corresponding details should be visible in the second fragment.
 - e) Details should include: Name, Presidential period, Qualification, Professional experience, Lifetime, Special Achievements, & Image, etc.

LAB - 6

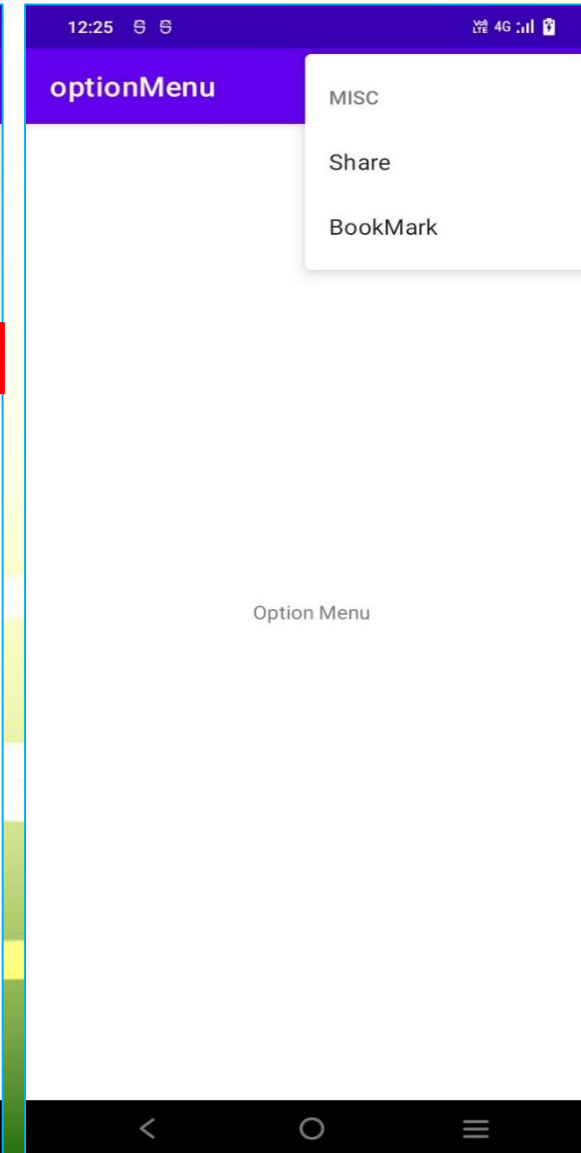
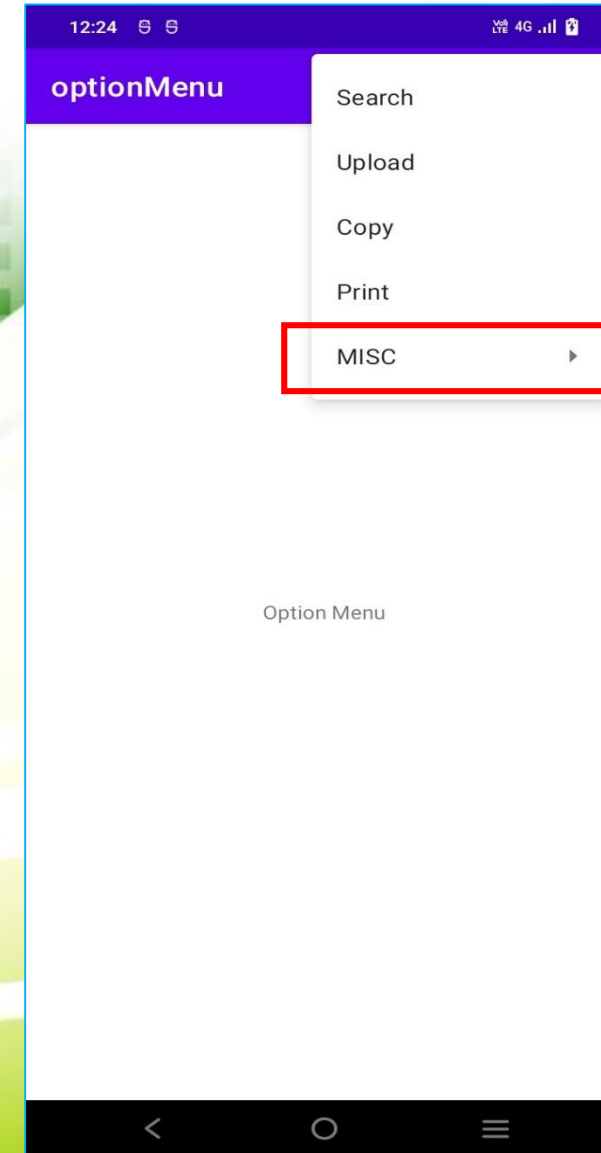
L6

11. For the Project in L5/T10; add the following features:
 - a) Gallery menu should open an image gallery of all presidents' using gridview.
 - b) Display the selected grid image in full screen mode.

12. Create android applications to demonstrate the use of following;
 - a) Date picker and Time picker.
 - b) Floating Action Button.
 - c) Progress bar.
 - d) Sub-Menu

SUB MENU

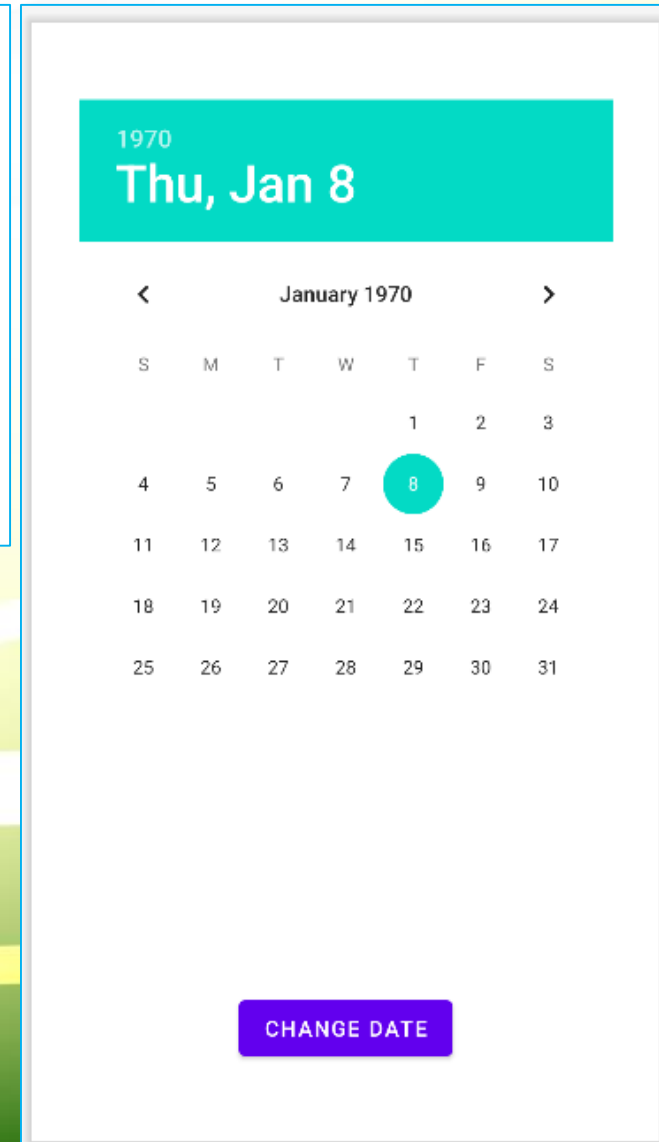
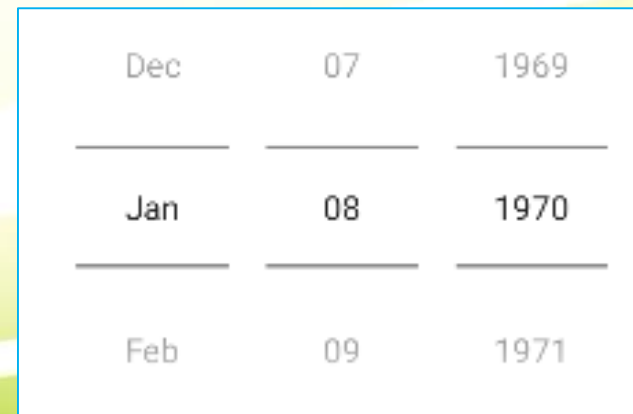
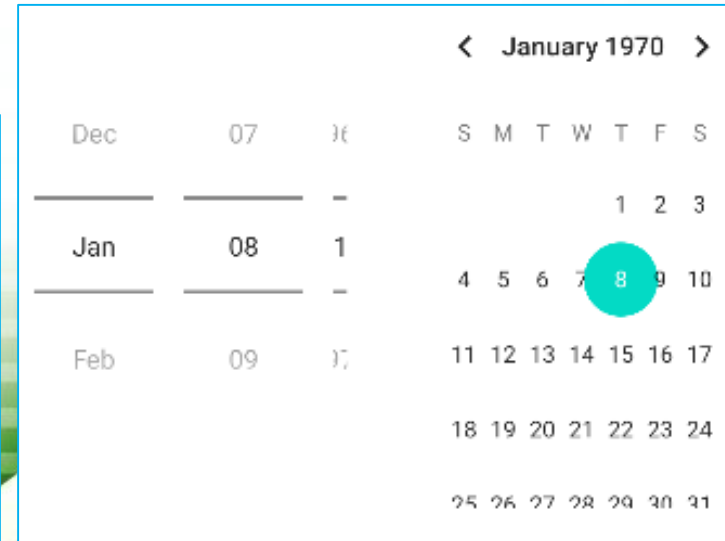
```
<item android:id="@+id/copy_item"
    android:title="Copy" />
<item android:id="@+id/print_item"
    android:title="Print" />
<item android:id="@+id/misc_item"
    android:title="MISC" >
    <menu>
        <item
            android:id="@+id/share_item"
            android:title="Share" />
        <item
            android:id="@+id/bookmark_item"
            android:title="BookMark" />
    </menu>
</item>
</menu>
```



DATE PICKER

```
<DatePicker
    android:id="@+id/datePicker"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_above="@+id/textView1"
    android:layout_centerHorizontal="true"
    android:layout_marginBottom="30dp"
    android:datepickerMode="calendar"
    android:visibility="visible" />
```

```
android:datepickerMode="spinner"
android:calendarViewShown="false"
```



DATE PICKER

```
textView1 = (TextView) findViewById(R.id.textView1);
picker = (DatePicker) findViewById(R.id.datePicker);
displayDate = (Button) findViewById(R.id.button1);

displayDate.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        textView1.setText("Change Date: " + getCurrentDate());
    }
});

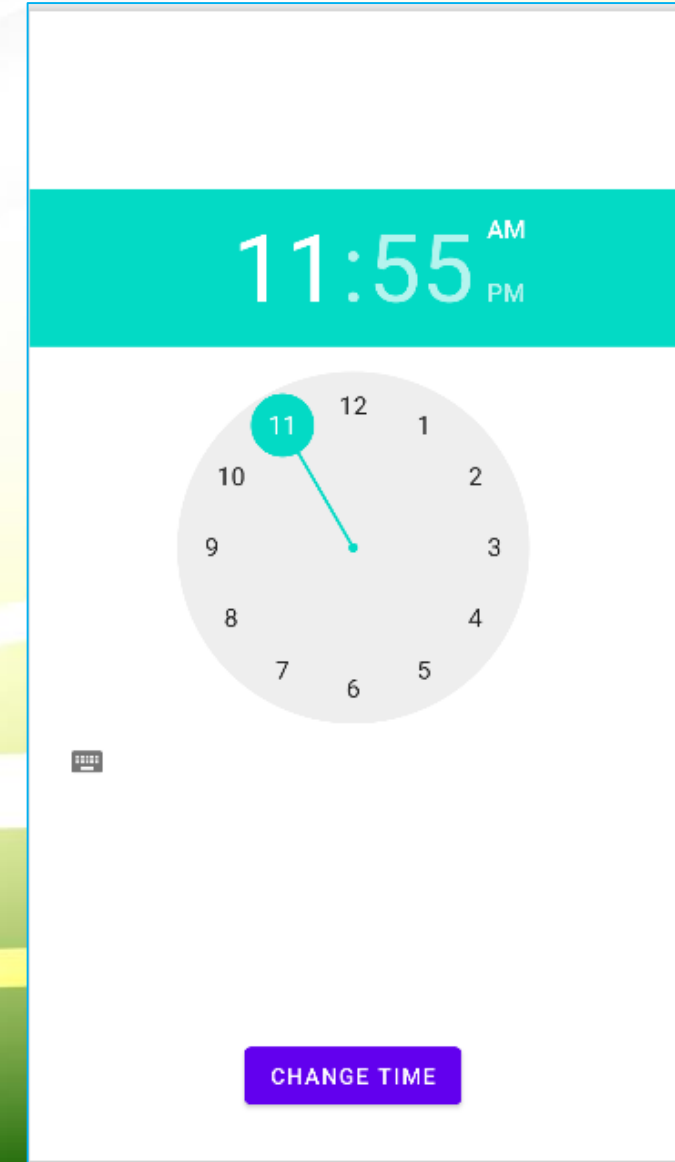
public String getCurrentDate(){
    StringBuilder builder=new StringBuilder();
    builder.append((picker.getMonth() + 1)+"/"); //month is 0 based
    builder.append(picker.getDayOfMonth()+"/");
    builder.append(picker.getYear());
    return builder.toString();
}
```

TIME PICKER

```
<TimePicker  
    android:id="@+id/timePicker"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_above="@+id/textView1"  
    android:layout_centerHorizontal="true"  
    android:layout_marginBottom="30dp" />
```

```
android:timePickerMode="spinner"
```

10	56	
<hr/>		
11	:	57
<hr/>		
12	58	PM



TIME PICKER

```
textView1=(TextView)findViewById(R.id.textView1);
timepicker=(TimePicker)findViewById(R.id.timePicker);
btntime=(Button)findViewById(R.id.button1);

timepicker.setIs24HourView(true);

btntime.setOnClickListener(new View.OnClickListener(){
    @Override
    public void onClick(View view) { textView1.setText(getCurrentTime()); }
});

}

public String getCurrentTime(){
    String currentTime="Current Time: "+timepicker.getCurrentHour()+":"+timepicker.getCurrentMinute();
    return currentTime;
}
```


FLOATING ACTION BUTTON (FAB)

```
</RelativeLayout>

<com.google.android.material.floatingactionbutton.FloatingActionButton
    android:id="@+id/fab"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="bottom|right"

    android:src="@drawable/ic_baseline_add_24"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.97"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.97" />

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

IMAGE VIEW

DATE PICKER

TIME PICKER

TOGGLE BUTTON

CUSTOM TOAST

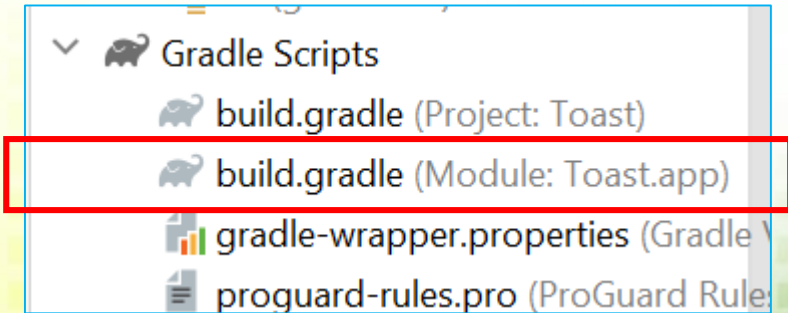
PROGRESS BAR

SPINNER

EXIT

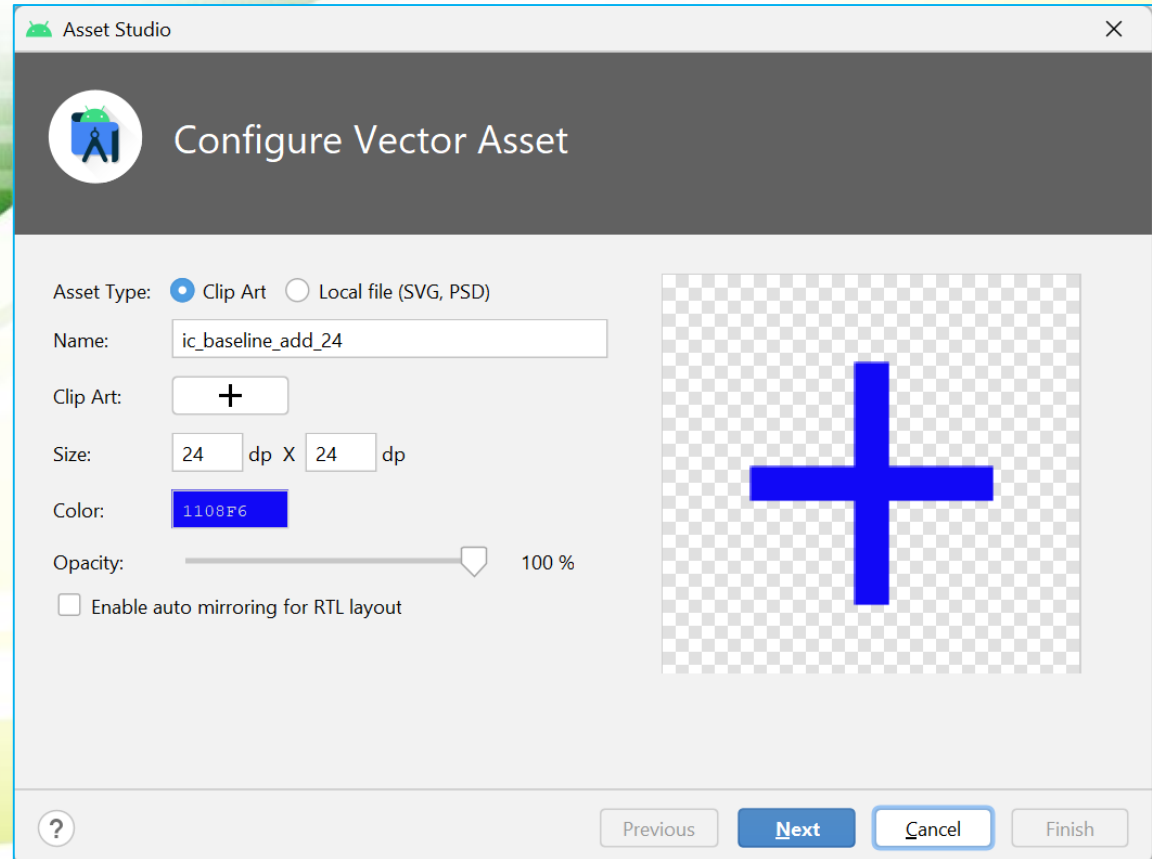
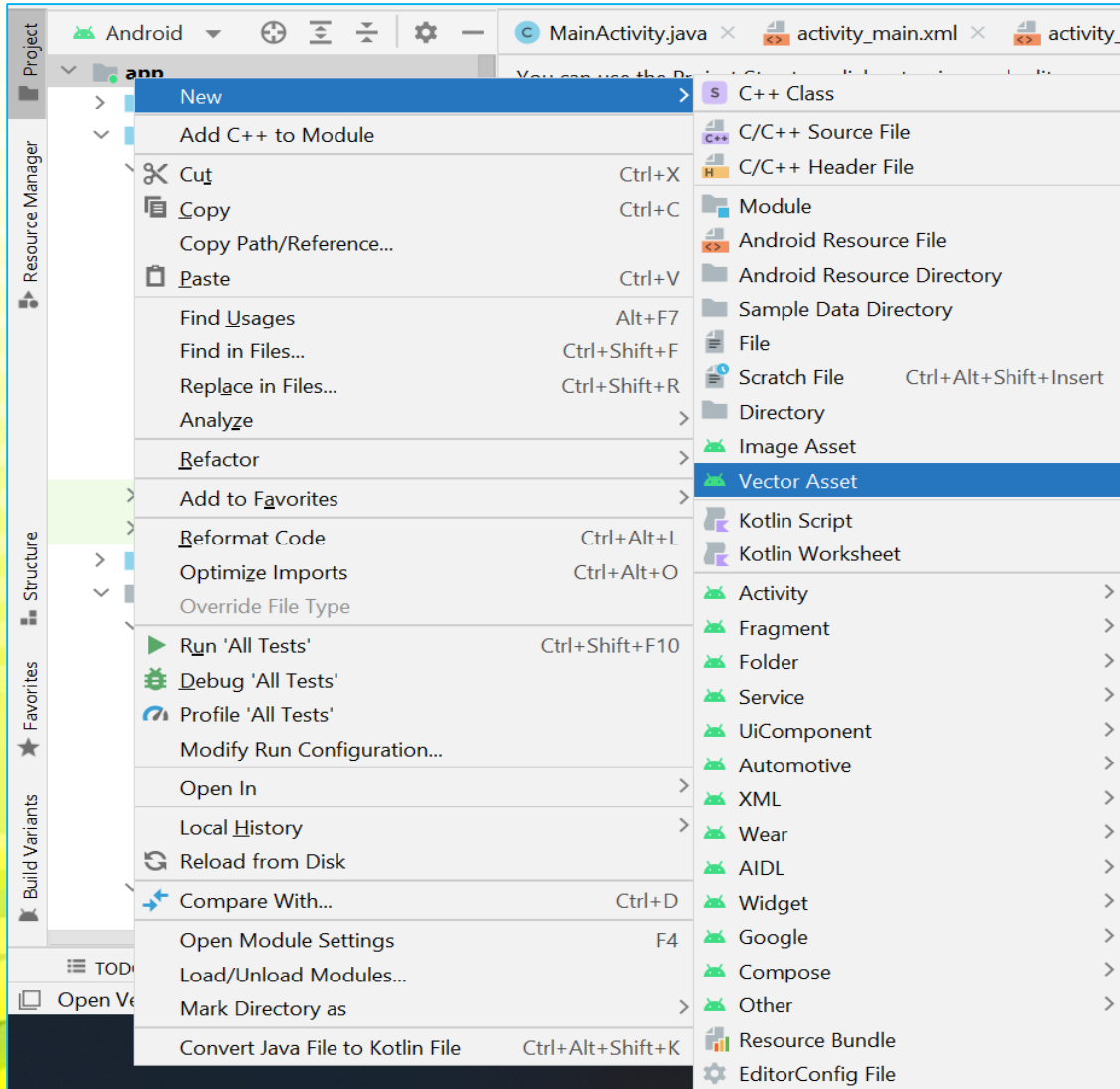


FLOATING ACTION BUTTON (FAB)



```
dependencies {  
  
    implementation 'androidx.appcompat:appcompat:1.3.1'  
    implementation 'com.google.android.material:material:1.4.0'  
    implementation 'androidx.constraintlayout:constraintlayout:2.1.1'  
    testImplementation 'junit:junit:4.+'  
    androidTestImplementation 'androidx.test.ext:junit:1.1.3'  
    androidTestImplementation 'androidx.test.espresso:espresso-core:3.4.0'  
}
```

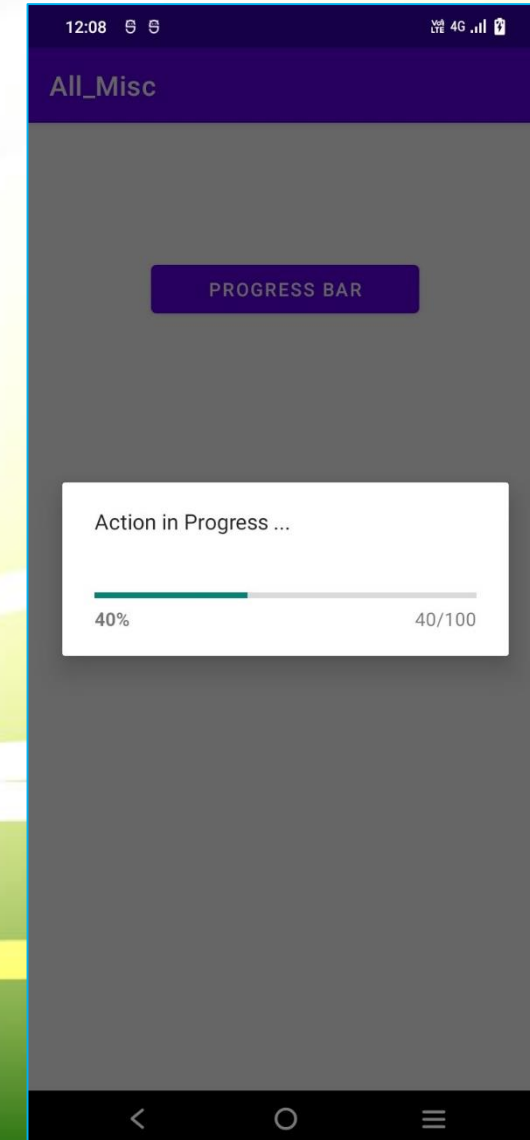
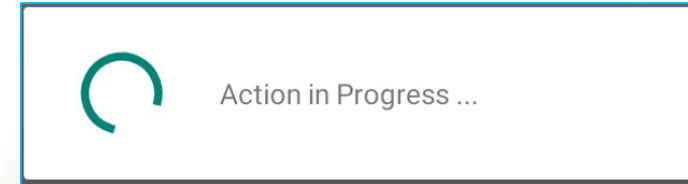
FLOATING ACTION BUTTON (FAB)



PROGRESS BAR

```
Button btnStartProgress;
ProgressDialog progressBar;
private int progressBarStatus;
private Handler progressBarHandler = new Handler();
private long fileSize;
```

```
@Override
public void onClick(View v) {
    // creating progress bar dialog
    progressBar = new ProgressDialog(v.getContext());
    progressBar.setCancelable(false);
    progressBar.setMessage("Action in Progress ...");
    progressBar.setProgressStyle(ProgressDialog.STYLE_SPINNER);
    progressBar.setProgress(0);
    progressBar.setMax(100);
    progressBar.show();
}
```



PROGRESS BAR

```
//reset progress bar and filesize status  
progressBarStatus = 0;  
fileSize = 0;
```

```
new Thread(new Runnable() {  
    public void run() {  
        while (progressBarStatus < 100) {  
            progressBarStatus = doOperation(); // TODO performing operation  
            try {Thread.sleep( millis: 1000);}   
            catch (InterruptedException e) {e.printStackTrace();}  
            // Updating the progress bar  
            progressBarHandler.post(new Runnable() {  
                public void run() { progressBar.setProgress(progressBarStatus); }  
            });  
        }  
        // performing operation if file is downloaded,  
        if (progressBarStatus >= 100) {  
            // sleeping for 1 second after operation completed  
            try{Thread.sleep( millis: 1000);}   
            catch (InterruptedException e){e.printStackTrace();}  
            // close the progress bar dialog  
            progressBar.dismiss();  
        }  
    }  
}).start();
```


PROGRESS BAR

```
// checking how much file is downloaded and updating the filesize
public int doOperation() {
    //The range of ProgressDialog starts from 0 to 10000
    while (filesize <= 10000) {
        filesize++;
        if (filesize == 1000)
            return 10;
        else if (filesize == 2000)
            return 20;
        else if (filesize == 3000)
            return 30;
        else if (filesize == 4000)
            return 40;
    }//end of while
    return 100;
}//end of doOperation
```

FRAGMENT

```
<fragment  
    android:id="@+id/presfragment"  
    class="com.example.fragment.FirstFragment"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent"  
    android:layout_below="@id/spinner"  
    android:layout_marginTop="10dp"  
    android:paddingTop="50dp" />
```

Select suitable option from the MENU.



fragment

President Info
Presidential Period

Lifetime
Qualification
Achievement

FRAGMENT

```
FirstFragment presidentInfo = (FirstFragment)getFragmentManager().findFragmentById(R.id.presfragment);  
presidentInfo.change(position);
```

```
@Override  
public View onCreateView(LayoutInflater inflater, ViewGroup container,  
                           Bundle savedInstanceState) {  
  
    view = inflater.inflate(R.layout.fragment_first, container, attachToRoot: false);  
  
    name = (TextView) view.findViewById(R.id.info);
```

```
public void change(int position) {  
    name.setText(presidents[position]);
```

LISTVIEW_1

<ListView

```

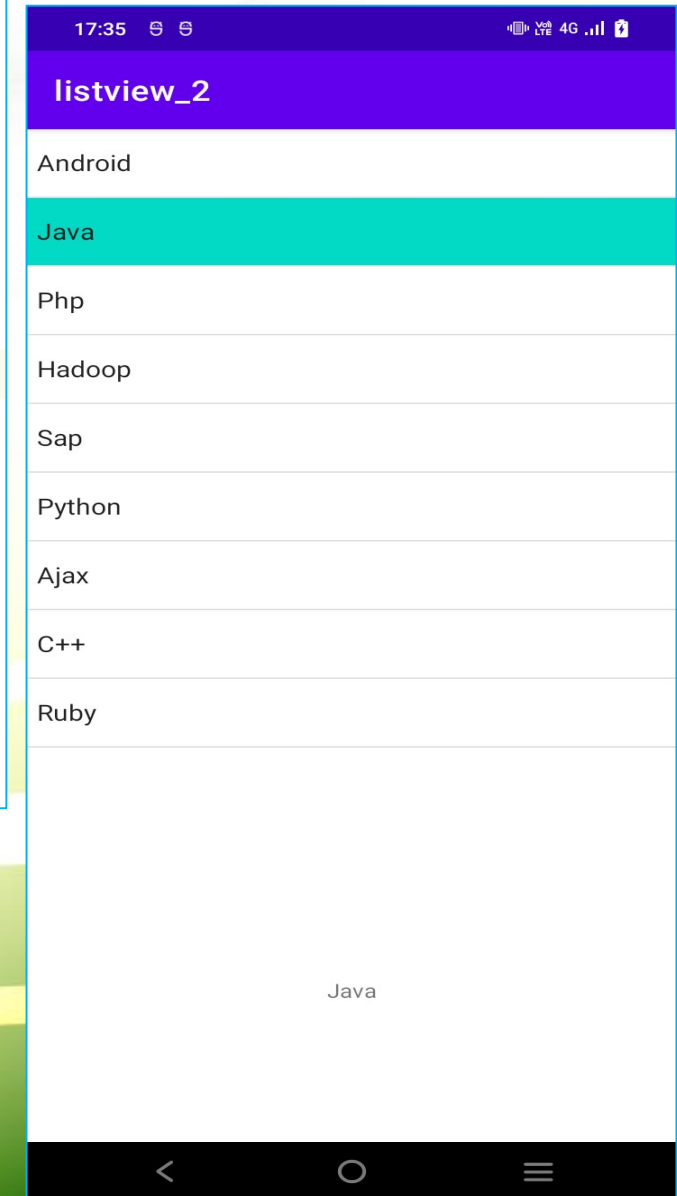
    android:id="@+id/listView1"
    android:layout_width="406dp"
    android:layout_height="445dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    tools:ignore="MissingConstraints"
    android:listSelector="@color/teal_200"
    tools:layout_editor_absoluteY="1dp" />

```

```

<resources>
    <string name="app_name">listview_2</string>
    <string-array name="array_technology">
        <item>Android</item>
        <item>Java</item>
        <item>Php</item>
        <item>Hadoop</item>
        <item>Sap</item>
        <item>Python</item>
        <item>Ajax</item>
        <item>C++</item>
        <item>Ruby</item>
        <item>Rails</item>
        <item>.Net</item>
        <item>Perl</item>
    </string-array>
</resources>

```



LISTVIEW_1

```
listView=(ListView)findViewById(R.id.listView1);
textView=(TextView)findViewById(R.id.textView1);
listItem = getResources().getStringArray(R.array.array_technology);

final ArrayAdapter<String> adapter = new ArrayAdapter<String>(context: this,
    android.R.layout.simple_list_item_1, android.R.id.text1, listItem);
listView.setAdapter(adapter);

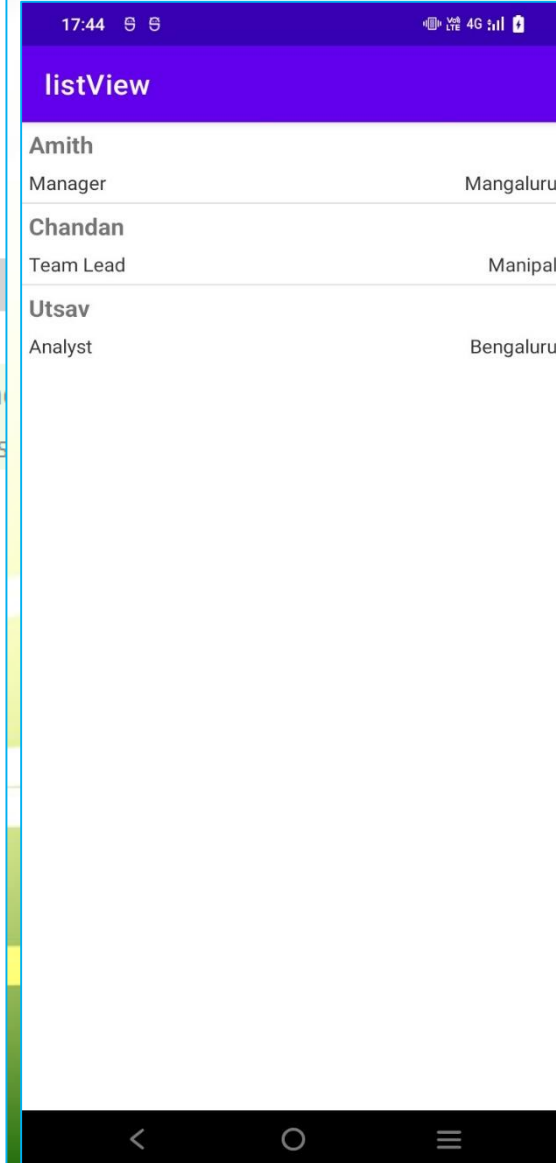
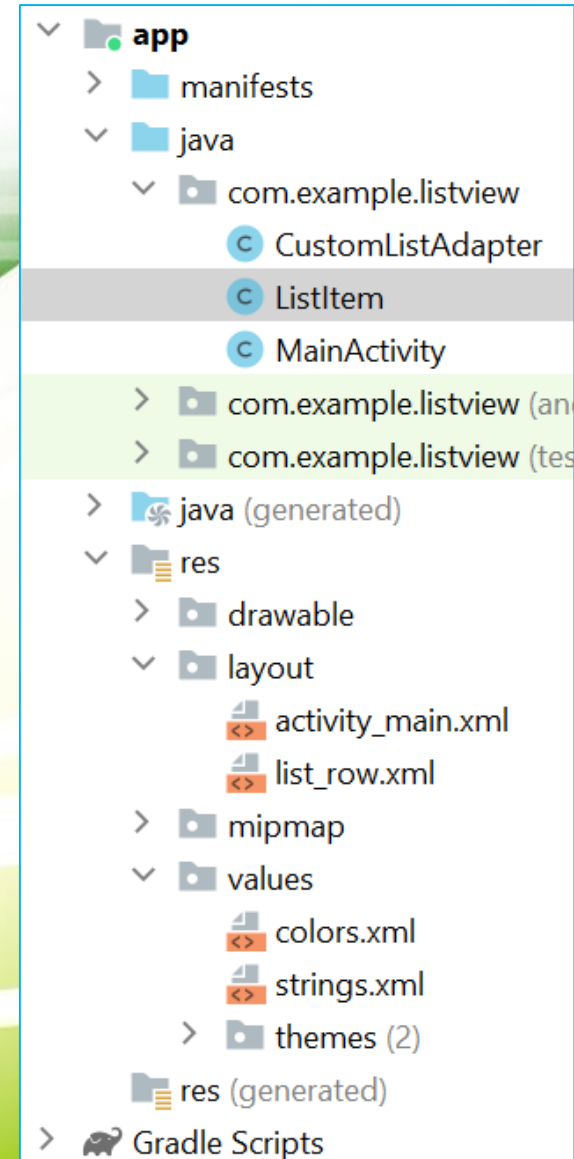
listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {
    @Override
    public void onItemClick(AdapterView<?> adapterView, View view, int position, long l) {
        // TODO Auto-generated method stub
        String value=adapter.getItem(position);
        textView.setText(value);
        Toast.makeText(getApplicationContext(),value,Toast.LENGTH_SHORT).show();
    }
});
```


LISTVIEW_2

```
<ListView
    android:id="@+id/user_list"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:dividerHeight="1dp"
    android:listSelector="@color/teal_200"/>
```

```
<TextView
    android:id="@+id/name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textStyle="bold"
    android:textSize="17dp" />
```

```
<TextView
    android:id="@+id/designation"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/name"
    android:layout_marginTop="7dp"
    android:textColor="#343434"
    android:textSize="14dp" />
```



LISTVIEW_2

```
package com.example.listview;

public class ListItem {
    private String name;
    private String designation;
    private String location;

    public String getName() { return name; }
    public String getDesignation() { return designation; }
    public String getLocation() { return location; }

    public void setName(String name) { this.name = name; }
    public void setDesignation(String designation) { this.designation = designation; }
    public void setLocation(String location) { this.location = location; }
}
```

LISTVIEW_2

```
public class MainActivity extends AppCompatActivity {  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
        ArrayList userList = getListData();  
        final ListView lv = (ListView) findViewById(R.id.user_list);  
        lv.setAdapter(new CustomListAdapter( aContext: this, userList));  
        lv.setOnItemClickListener(new AdapterView.OnItemClickListener() {  
            @Override  
            public void onItemClick(AdapterView<?> a, View v, int position, long id) {  
                ListItem user = (ListItem) lv.getItemAtPosition(position);  
                Toast.makeText( context: MainActivity.this, text: "Selected :" + " " + user.getName()+  
            }  
        });  
    }  
}
```

LISTVIEW_2

```
private ArrayList getListData() {  
    ArrayList<ListItem> results = new ArrayList<>();  
    ListItem user1 = new ListItem();  
    user1.setName("Amith");  
    user1.setDesignation("Manager");  
    user1.setLocation("Mangaluru");  
    results.add(user1);  
    ListItem user2 = new ListItem();  
    user2.setName("Chandan");  
    user2.setDesignation("Team Lead");  
    user2.setLocation("Manipal");  
    results.add(user2);  
    return results;  
}
```

LISTVIEW_2

```
public class CustomListAdapter extends BaseAdapter {  
    private ArrayList<ListItem> listData;  
    private LayoutInflater inflater;  
    public CustomListAdapter(Context aContext, ArrayList<ListItem> listData) {  
        this.listData = listData;  
        inflater = LayoutInflater.from(aContext);  
    }  
    @Override  
    public int getCount() { return listData.size(); }  
    @Override  
    public Object getItem(int position) { return listData.get(position); }  
    @Override  
    public long getItemId(int position) { return position; }  
    static class ViewHolder {  
        TextView uName;  
        TextView uDesignation;  
        TextView uLocation;  
    }  
}
```

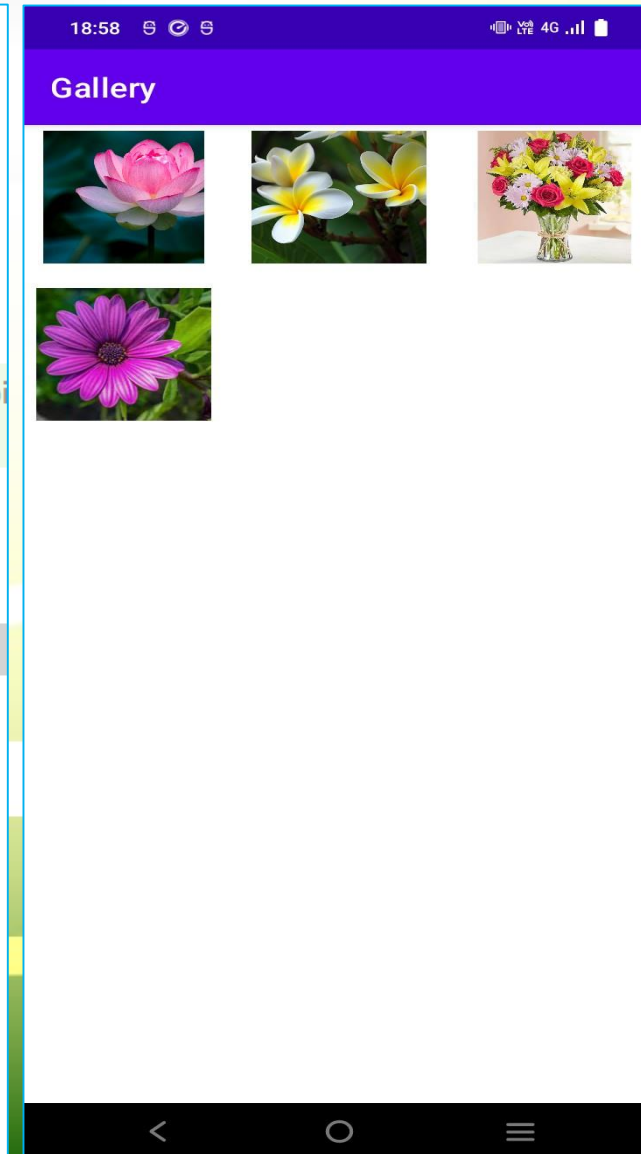
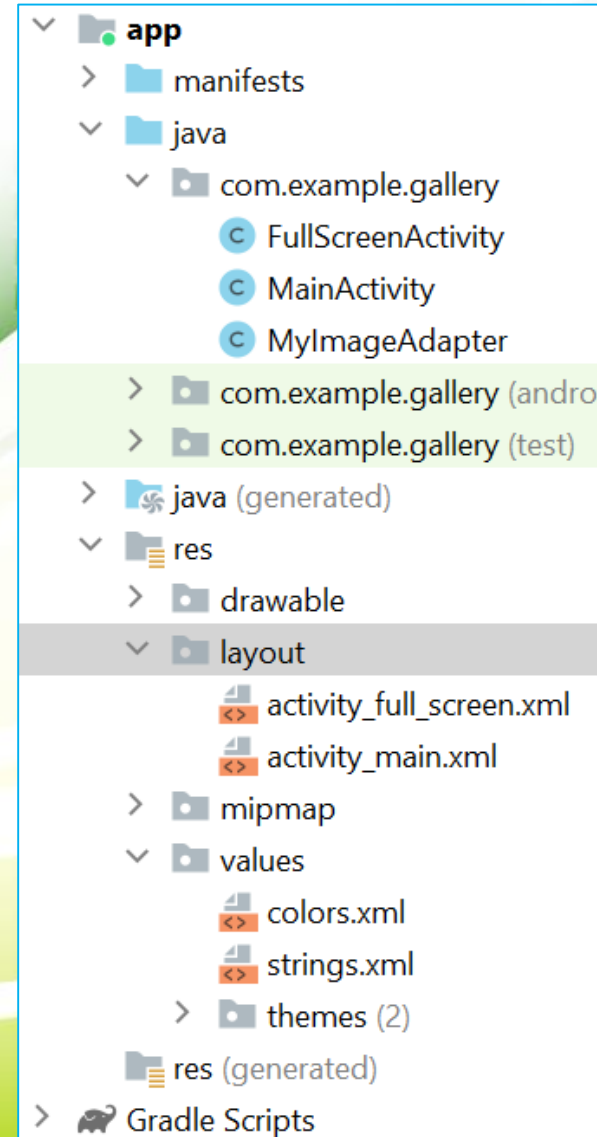

LISTVIEW_2

```
public View getView(int position, View v, ViewGroup vg) {  
    ViewHolder holder;  
    if (v == null) {  
        v = inflater.inflate(R.layout.list_row, root: null);  
        holder = new ViewHolder();  
        holder.uName = (TextView) v.findViewById(R.id.name);  
        holder.uDesignation = (TextView) v.findViewById(R.id.designation);  
        holder.uLocation = (TextView) v.findViewById(R.id.location);  
        v.setTag(holder);  
    } else {  
        holder = (ViewHolder) v.getTag();  
    }  
    holder.uName.setText(listData.get(position).getName());  
    holder.uDesignation.setText(listData.get(position).getDesignation());  
    holder.uLocation.setText(listData.get(position).getLocation());  
    return v;  
}
```

GALLERY

```
<GridView
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/gridview"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:columnWidth="110dp"
    android:numColumns="auto_fit"
    android:verticalSpacing="10dp"
    android:horizontalSpacing="10dp"
    android:stretchMode="columnWidth"
    android:gravity="center" />
```

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



GALLERY

```
public class MainActivity extends AppCompatActivity {  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
  
        GridView gv = (GridView) findViewById(R.id.gridview);  
        gv.setAdapter(new MyImageAdapter(c: this));  
    }  
}
```

```
gv.setOnItemClickListener(new AdapterView.OnItemClickListener() {  
    public void onItemClick(AdapterView<?> parent, View v, int position, long id) {  
        Intent i = new Intent(getApplicationContext(), FullScreenActivity.class);  
        i.putExtra(name: "id", position);  
        startActivity(i);  
    }  
});
```

GALLERY

```
public class MyImageAdapter extends BaseAdapter {
    private Context mContext;

    // Add all our images to arraylist
    public Integer[] thumbImages = {
        R.drawable.img1, R.drawable.img2,
        R.drawable.img3, R.drawable.img4
    };
};
```

```
public MyImageAdapter(Context c) { mContext = c; }

public int getCount() { return thumbImages.length; }

public Object getItem(int position) { return null; }

public long getItemId(int position) { return 0; }
```

```
// create a new ImageView for each item referenced by the Adapter
public View getView(int position, View convertView, ViewGroup parent) {

    ImageView imageView = new ImageView(mContext);
    imageView.setLayoutParams(new GridView.LayoutParams(w: 200, h: 200));
    imageView.setScaleType(ImageView.ScaleType.CENTER_CROP);
    imageView.setPadding(left: 8, top: 8, right: 8, bottom: 8);
    imageView.setImageResource(thumbImages[position]);

    return imageView;
}
```


FULLSCREEN

```
public class FullScreenActivity extends AppCompatActivity {  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_full_screen);  
  
        Intent i = getIntent();  
        int position = i.getExtras().getInt(key: "id");  
        Toast.makeText(context: FullScreenActivity.this, text: "Item " + position + " clicked",  
  
        MyImageAdapter myImageAdapter = new MyImageAdapter(c: this);  
  
        ImageView imageView = (ImageView) findViewById(R.id.full_image_view);  
        imageView.setImageResource(myImageAdapter.thumbImages[position]);  
    }  
}
```