Lab 6
Working with UI Controls – 2

1. Create an application for a progress bar in android

🞣 Color.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="black">#FF000000</color>
    <color name="white">#FFFFFFFF</color>
    <color name="Orange">#C62828</color>
</resources>
```

🞣 activity_main.xml

```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">
    <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:background="@color/orange">
        <ProgressBar
            android:id="@+id/pBar"
            style="?android:attr/progressBarStyleHorizontal"
            android:layout_width="237dp"
            android:layout_height="64dp"
            android:layout_marginLeft="100dp"
            android:layout_marginTop="200dp"
            android:indeterminate="true"
            android:background="#AA9999"
            android:backgroundTint="#ACB69D" />
        <Button
            android:id="@+id/btnShow"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_below="@+id/pBar"
            android:layout_marginLeft="130dp"
            android:layout_marginTop="-139dp"
            android:backgroundTint="#BF1E1E"
            android:text="DOWNLOAD START" />
    </RelativeLayout>

</androidx.constraintlayout.widget.ConstraintLayout>
```
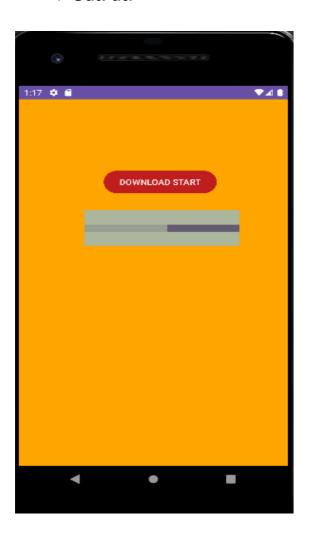
🞣 MainActivity.java

```java
package com.example.lab6_uicontrols;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
```

```java
import android.widget.ProgressBar;
public class MainActivity extends AppCompatActivity {
  private ProgressBar pgsBar; // Declare pgsBar here
  @Override
  protected void onCreate(Bundle savedInstanceState)
{
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    pgsBar = findViewById(R.id.pBar); // Initialize pgsBar here
    Button btn = findViewById(R.id.btnShow);
    btn.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        simulateDownload();
      }
    private void simulateDownload() {
      new Thread(new Runnable() {
        @Override
        public void run() {
          for (int progress = 0; progress <= 100; progress++) {
            try {
              Thread.sleep(100);
            } catch (InterruptedException e) {
              e.printStackTrace();
            }
            final int currentProgress = progress;
            runOnUiThread(new Runnable()
{

              @Override
              public void run() {
                pgsBar.setProgress(currentProgress);
              }
            });
          }
        }
      })
            .start();
    }
  });
  }
}
```

OutPut:

2. Create a Spinner component Ui application in android

+ activity_demo.xml

```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">

    <Spinner
        android:id="@+id/countrySpinner"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="40dp"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent" />

    <TextView
        android:id="@+id/selectedCountryText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="Selected Country: "
        android:textSize="18sp"
        app:layout_constraintTop_toBottomOf="@id/countrySpinner"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent" />

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

+ Main Activity.java

```java
package com.example.lab6_uicontrols;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Spinner;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity
{
    private Spinner countrySpinner;
    private TextView selectedCountryText;
```

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

        countrySpinner = findViewById(R.id.countrySpinner);
        selectedCountryText = findViewById(R.id.selectedCountryText);

        // Define an array of countries
        // Define an array of countries
        String[] countries = {"Select Country", "India", "Russia", "Japan", "USA"};

        // Create an ArrayAdapter for the spinner
        ArrayAdapter<String> adapter = new ArrayAdapter<>(this, android.R.layout.simple_spinner_item, countries);

        // Specify the layout to use for the spinner's dropdown menu
        adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);

        // Set the adapter for the spinner
        countrySpinner.setAdapter(adapter);

        // Set an item selected listener to capture the selected country
        countrySpinner.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() {
            @Override
            public void onItemSelected(AdapterView<?> parentView, View selectedItemView, int position, long id) {
                if (position > 0) {
                    // Get the selected country from the spinner
                    String selectedCountry = parentView.getItemAtPosition(position).toString();

                    // Display the selected country in the TextView
                    selectedCountryText.setText("Selected Country: " + selectedCountry);
                } else {
                    // If "Select Country" is selected, clear the TextView
                    selectedCountryText.setText("Selected Country: ");
                }
            }

            @Override
            public void onNothingSelected(AdapterView<?> parentView) {
                // Do nothing if nothing is selected
            }
        });
    }
}
```

⬇ Output:

3. Create a Date Picker Ui application in android

✚ acivity_main.xml

```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">

    <!-- The RelativeLayout containing your Spinner, Button, and TextView -->
    <RelativeLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true">

        <Spinner
            android:id="@+id/dateSpinner"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_centerHorizontal="true"
            android:layout_marginTop="20dp" />

        <Button
            android:id="@+id/buttonGetDate"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_below="@+id/dateSpinner"
            android:layout_marginLeft="100dp"
            android:text="Get Date" />

        <TextView
            android:id="@+id/textViewSelectedDate"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_below="@+id/buttonGetDate"
            android:layout_marginLeft="100dp"
            android:layout_marginTop="10dp"
            android:textStyle="bold"
            android:textSize="18dp" />

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

✚ Android mainactivity.java

```java
package com.example.lab6_uicontrols;
import android.os.Bundle;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.Spinner;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
import java.util.ArrayList;
import java.util.Calendar;
import java.util.List;
```

```java
public class MainActivity extends AppCompatActivity {

    private Spinner dateSpinner;
    private Button buttonGetDate;
    private TextView textViewSelectedDate;

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

        dateSpinner = findViewById(R.id.dateSpinner);
        buttonGetDate = findViewById(R.id.buttonGetDate);
        textViewSelectedDate = findViewById(R.id.textViewSelectedDate);

        // Generate a list of dates from 2000-01-01 to 2030-12-31
        List<String> dateList = generateDateList();

        // Create an ArrayAdapter for the spinner
        ArrayAdapter<String> adapter = new ArrayAdapter<>(this, android.R.layout.simple_spinner_item, dateList);
        adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);

        // Set the adapter for the spinner
        dateSpinner.setAdapter(adapter);

        buttonGetDate.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Get the selected date from the Spinner
                String selectedDate = dateSpinner.getSelectedItem().toString();
                textViewSelectedDate.setText("Selected Date: " + selectedDate);
            }
        });
    }

    // Generate a list of dates from 2000-01-01 to 2030-12-31
    private List<String> generateDateList() {
        List<String> dateList = new ArrayList<>();
        Calendar calendar = Calendar.getInstance();

        for (int year = 2000; year <= 2030; year++) {
            for (int month = 0; month < 12; month++) {
                calendar.set(year, month, 1);
                int daysInMonth = calendar.getActualMaximum(Calendar.DAY_OF_MONTH);

                for (int day = 1; day <= daysInMonth; day++) {
                    dateList.add(String.format("%04d-%02d-%02d", year, month + 1, day));
                }
            }
        }

        return dateList;
    }
}
```

OutPut:

4. Create a Time picker Ui application in android
✚ activity_lab6.xml

```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:background="#EFEFEF"> <!-- Background color -->
  <TimePicker
    android:id="@+id/timePicker1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="20dp"
    android:layout_gravity="center_horizontal"
    android:background="#FFFFFF" /> <!-- TimePicker background color -->
  <Button
    android:id="@+id/button1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/timePicker1"
    android:layout_marginTop="10dp"
    android:layout_marginLeft="160dp"
    android:text="Get Time" />
  <TextView
    android:id="@+id/textView1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/button1"
    android:layout_marginLeft="120dp"
    android:layout_marginTop="10dp"
    android:textStyle="bold"
    android:textSize="18dp" />
</RelativeLayout>
```
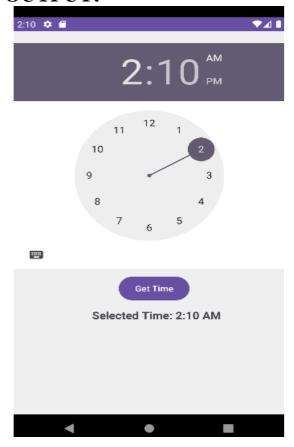
✚ Lab6_Activity.java

```java
package com.example.lab6_uicontrols;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.TimePicker;
public class MainActivity extends AppCompatActivity {
    TimePicker picker;
    Button btnGet;
    TextView tvw;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        tvw = findViewById(R.id.textView1);
        picker = findViewById(R.id.timePicker1);
        picker.setIs24HourView(false); // Set to 12-hour format
        btnGet = findViewById(R.id.button1);
```

```
        btnGet.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
            int hour, minute;
            String am_pm;
            if (android.os.Build.VERSION.SDK_INT >= android.os.Build.VERSION_CODES.M) {
              hour = picker.getHour();
              minute = picker.getMinute();
            } else {
              hour = picker.getCurrentHour();
              minute = picker.getCurrentMinute();
            }
            if (hour >= 12) {
              am_pm = "PM";
              if (hour > 12) {
                hour = hour - 12;
              }
            } else {
              am_pm = "AM";
              if (hour == 0) {
                hour = 12;
              }}
                tvw.setText("Selected Time: " + hour + ":" + String.format("%02d", minute) + " " + am_pm);
          }
        });
    }
  }
```

OUTPUT:

5. Create a Rating bar Ui application in android

✚ activity_lab6_last.xml

```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">

    <RatingBar
        android:id="@+id/ratingBar"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:numStars="7"
        android:stepSize="1.0"
        android:layout_centerInParent="true"
    />

    <TextView
        android:id="@+id/ratingText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/ratingBar"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp"
        android:text="Rating: 0.0"
    />

</RelativeLayout>
```

✚ Lab6 Activity.java

```java
package com.example.lab6_uicontrols;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.RatingBar;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    private RatingBar ratingBar;
    private TextView ratingText;

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

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

        // Set an OnRatingBarChangeListener to track changes in the rating
        ratingBar.setOnRatingBarChangeListener(new RatingBar.OnRatingBarChangeListener() {
```

```
        @Override
        public void onRatingChanged(RatingBar ratingBar, float rating, boolean fromUser) {
            // Display the selected rating in the TextView
            ratingText.setText("Rating: " + rating);
        }
    });
    }
}
```

OUTPUT: