Question 1. Simple example to create list item in listView.

****`activity_main.xml`** (contains the `ListView`):**

```
<!-- res/layout/activity_main.xml -->
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <ListView
        android:id="@+id/listView"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />
</RelativeLayout>
```

****`list_item.xml`** (defines the item layout for the `ListView`):**

```
<!-- res/layout/list_item.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="wrap_content"
    android:padding="16dp">

    <TextView
        android:id="@+id/textViewItem"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="18sp" />
```

```
</RelativeLayout>
```

`MainActivity.java`:

```
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.ListView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

        // Find the ListView in the layout
        ListView listView = findViewById(R.id.listView);

        // Create an array of strings to be displayed in the ListView
        String[] data = {"Item 1", "Item 2", "Item 3", "Item 4", "Item 5"};

        // Create an ArrayAdapter to manage the data and bind it to the ListView
        ArrayAdapter<String> adapter = new ArrayAdapter<>(
                this,
                R.layout.list_item,  // Custom layout for a single text item
                R.id.textViewItem,  // ID of the TextView in the custom layout
                data
```

```
        );


        // Set the adapter on the ListView
        listView.setAdapter(adapter);
    }
}
```

Explanation

- **XML Files**: Ensure the `activity_main.xml` contains only the `ListView`, and `list_item.xml` contains the layout for each item.

- **`ArrayAdapter`**: When using a custom layout, specify the layout resource ID for the item (`R.layout.list_item`) and the ID of the `TextView` within that layout (`R.id.textViewItem`).

Question 2. Array Adapter

Explanation

- **Context**: `this` refers to the current activity.
- **Resource Layout**: `android.R.layout.simple_list_item_1` is a built-in Android layout resource that displays a single `TextView`.
- **Data**: `data` is an array of strings that will be displayed in the `ListView`.

In this example, `ArrayAdapter` takes the array of strings, converts each string into a view using the built-in layout, and then displays these views in the `ListView`.

Question 3. Develop an android application to display id, name, and address of 5 students using ListView.

List_item.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="wrap_content"
    android:padding="16dp">
```

```
    <TextView
        android:id="@+id/textViewId"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="16sp" />

    <TextView
        android:id="@+id/textViewName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/textViewId"
        android:textSize="18sp"
        android:paddingTop="4dp" />

    <TextView
        android:id="@+id/textViewAddress"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/textViewName"
        android:textSize="14sp"
        android:paddingTop="4dp" />
</RelativeLayout>
```

Activity main.xml

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

    <ListView
        android:id="@+id/listView"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />
</RelativeLayout>
```

Student.java

```
package com.example.helloworld;

public class Student {
    private String id;
    private String name;
    private String address;
```

```
    public Student(String id, String name, String address){
        this.id = id;
        this.name = name;
        this.address = address;
    }

    public String getId(){
        return id;
    }
    public String getName(){
        return name;
    }
    public String getAddress(){
        return address;
    }

}
```

MainActivity.java

```
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

import java.util.ArrayList;
import java.util.List;

public class MainActivity extends AppCompatActivity {

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

    // Find the ListView in the layout
    ListView listView = findViewById(R.id.listView);

    // Create a list of students
```

```
        List<Student> students = new ArrayList<>();
        students.add(new Student("1", "Alice", "123 Main St"));
        students.add(new Student("2", "Bob", "456 Oak Ave"));
        students.add(new Student("3", "Charlie", "789 Pine Rd"));
        students.add(new Student("4", "David", "101 Maple Dr"));
        students.add(new Student("5", "Eve", "202 Birch Blvd"));

        // Create an ArrayAdapter with a custom layout for list items
        ArrayAdapter<Student> adapter = new ArrayAdapter<Student>(this, R.layout.list_item,
R.id.textViewId, students) {
            @Override
            public View getView(int position, View convertView, ViewGroup parent) {
                if (convertView == null) {
                    convertView = LayoutInflater.from(getContext()).inflate(R.layout.list_item, parent,
false);
                }

                Student student = getItem(position);

                TextView textViewId = convertView.findViewById(R.id.textViewId);
                TextView textViewName = convertView.findViewById(R.id.textViewName);
                TextView textViewAddress = convertView.findViewById(R.id.textViewAddress);

                textViewId.setText("ID: " + student.getId());
                textViewName.setText("Name: " + student.getName());
                textViewAddress.setText("Address: " + student.getAddress());

                return convertView;
            }
        };

        // Set the adapter on the ListView
        listView.setAdapter(adapter);
    }
}
```

Question 4. Develop an android application to display image, name, and address of 5 students using GridView.

List item.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:padding="16dp">

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="match_parent"
        android:layout_height="120dp" />

    <TextView
        android:id="@+id/name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="16sp"
        android:textStyle="bold"
        android:layout_margin="10dp"
        android:layout_below="@+id/imageView" />


    <TextView
        android:id="@+id/address"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="16sp"
        android:textStyle="bold"
        android:layout_margin="10dp"
        android:layout_below="@+id/name" />

</RelativeLayout>
```

Activity main.xml

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

    <GridView
        android:id="@+id/mygrid"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:numColumns="3"
        android:padding="10dp"
```

```
        android:horizontalSpacing="10dp"
        android:verticalSpacing="10dp"/>

</RelativeLayout>
```

Student.java

```
public class Student {
    public int imageId;
    public String name;
    public String address;

    public Student(int imageId, String name, String address) {
        this.imageId = imageId;
        this.name = name;
        this.address = address;
    }

}
```

ActivityMain.java

```
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ArrayAdapter;
import android.widget.GridView;
import android.widget.ImageView;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

import java.util.ArrayList;
import java.util.List;

public class MainActivity extends AppCompatActivity {

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

        GridView gridView = findViewById(R.id.mygrid);
```

```
        List<Student> students = new ArrayList<Student>();
        students.add(new Student(R.drawable.logo, "Ravi",
"Ktm"));
        students.add(new Student(R.drawable.logo, "Ravi",
"Ktm"));
        students.add(new Student(R.drawable.logo, "Ravi",
"Ktm"));
        students.add(new Student(R.drawable.logo, "Ravi",
"Ktm"));
        students.add(new Student(R.drawable.logo, "Ravi",
"Ktm"));

        ArrayAdapter<Student> adapter = new
ArrayAdapter<Student>(this, R.layout.list_item, R.id.imageView,
students){

            @Override
            public View getView(int position, View convertView,
ViewGroup parent){
                if(convertView == null) {
                    convertView =
LayoutInflater.from(getContext()).inflate(R.layout.list_item,
parent, false);
                }
                Student student = getItem(position);
                TextView name =
convertView.findViewById(R.id.name);
                TextView address =
convertView.findViewById(R.id.address);
                ImageView imageId =
convertView.findViewById(R.id.imageView);

                name.setText("Name: " + student.name);
                address.setText("Address: " + student.address);
                imageId.setImageResource(student.imageId);

                return convertView;
            }

        };
        gridView.setAdapter(adapter);

    }
}
```

Question 5: Write a code snippet for retrieving data from ListView and GridView.

Answer:

ListView

```
ListView listView = findViewById(R.id.listView);
String[] names = {"John", "Jane", "Bob", "Alice"};

ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_list_item_1, names);
listView.setAdapter(adapter);

listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {
   @Override
   public void onItemClick(AdapterView<?> parent, View view, int position, long id) {
      String selectedName = (String) parent.getItemAtPosition(position);
      Toast.makeText(MainActivity.this, "Selected: " + selectedName,
Toast.LENGTH_SHORT).show();
   }
});
```

GridView

```
GridView gridView = findViewById(R.id.gridView);
String[] names = {"John", "Jane", "Bob", "Alice"};

ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_list_item_1, names);
gridView.setAdapter(adapter);

gridView.setOnItemClickListener(new AdapterView.OnItemClickListener() {
```

```
        @Override
        public void onItemClick(AdapterView<?> parent, View view, int position, long id) {
            String selectedName = (String) parent.getItemAtPosition(position);
            Toast.makeText(MainActivity.this, "Selected: " + selectedName,
Toast.LENGTH_SHORT).show();
        }
    });
```

Question 6: Develop an image gallery using GridView. Your gallery should display at least drawable images. If any of the image is clicked it should be displayed in android activity in large size.

Grid View.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:padding="16dp">

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="match_parent"
        android:layout_height="120dp" />

</RelativeLayout>
```

Activity main.xml

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

    <GridView
        android:id="@+id/mygrid"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:numColumns="3"
        android:padding="10dp"
        android:horizontalSpacing="10dp"
        android:verticalSpacing="10dp"/>

</RelativeLayout>
```

MainActivity.java

```
import android.content.Intent;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.GridView;
import android.widget.ImageView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

        GridView gridView = findViewById(R.id.mygrid);

        Integer[] galleryImg = {
                R.drawable.logo, R.drawable.logo, R.drawable.logo,
                R.drawable.logo, R.drawable.logo
        };

        // Create an ArrayAdapter with a custom layout
        ArrayAdapter<Integer> adapter = new ArrayAdapter<Integer>(this,
R.layout.list_item, R.id.imageView, galleryImg) {
            @Override
            public View getView(int position, View convertView, ViewGroup
parent) {
                if (convertView == null) {
                    convertView =
LayoutInflater.from(getContext()).inflate(R.layout.list_item, parent, false);
                }
                ImageView imageView =
convertView.findViewById(R.id.imageView);
                imageView.setImageResource(getItem(position));
                imageView.setScaleType(ImageView.ScaleType.CENTER_CROP);
                return convertView;
            }
        };

        gridView.setAdapter(adapter);

        gridView.setOnItemClickListener(new AdapterView.OnItemClickListener()
{
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int
position, long id) {
                Intent intent = new Intent(MainActivity.this,
MainActivity2.class);
                intent.putExtra("ImageResourceId", galleryImg[position]); //
Use consistent key
                startActivity(intent);
```

```
            }
        });
    }
}
```

ActivityMain2.xml

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

public class MainActivity2 extends AppCompatActivity {

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

        ImageView imageView = findViewById(R.id.imageView);
        Intent intent = getIntent();
        int imageResourceId = intent.getIntExtra("ImageResourceId", -1); //
Use consistent key and default value
        if (imageResourceId != -1) {
            imageView.setImageResource(imageResourceId);
        }
    }
}
```

Question 7: Develop an android application to display id, name and address of 5 students using RecylerView.

RecylerView.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="vertical"
    android:padding="10dp">

    <TextView
        android:id="@+id/sid"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="ID"
        android:textSize="18sp" />

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

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Name"
        android:textSize="18sp" />

    <TextView
        android:id="@+id/saddress"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Address"
        android:textSize="18sp" />
</LinearLayout>
```

Activity Main.xml

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

    <androidx.recyclerview.widget.RecyclerView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/myview"
        android:scrollbars="vertical"/>

</RelativeLayout>
```

Student.java

```
package com.example.helloworld;

public class Student {
    private String sid;
    private String sname;
    private String saddress;
    public Student(String sid, String sname, String saddress) {
        this.sid = sid;
        this.sname = sname;
        this.saddress = saddress;

    }
    public String getSid(){
        return sid;
    }
    public String getSname(){
        return sname;
    }
    public String getSaddress(){
        return saddress;
    }
}
```

StudentAdapter.java

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

```
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;
import androidx.recyclerview.widget.RecyclerView;
import java.util.List;

public class StudentAdapter extends
RecyclerView.Adapter<StudentAdapter.StudentViewHolder> {

    private List<Student> studentList;

    public StudentAdapter(List<Student> studentList) {
        this.studentList = studentList;
    }
    @Override
    public StudentViewHolder onCreateViewHolder(ViewGroup parent, int
viewType) {
        View view =
LayoutInflater.from(parent.getContext()).inflate(R.layout.list_item, parent,
false);
        return new StudentViewHolder(view);
    }

    @Override
    public void onBindViewHolder(StudentViewHolder holder, int position) {
        Student student = studentList.get(position);
        holder.sid.setText("ID: " + student.getSid());
        holder.sname.setText("Name: " + student.getSname());
        holder.saddress.setText("Address: " + student.getSaddress());
    }
    @Override
    public int getItemCount() {
        return studentList.size();
    }
    static class StudentViewHolder extends RecyclerView.ViewHolder {
        TextView sid, sname, saddress;

        public StudentViewHolder(View itemView) {
            super(itemView);
            sid = itemView.findViewById(R.id.sid);
            sname = itemView.findViewById(R.id.sname);
            saddress = itemView.findViewById(R.id.saddress);
        }
    }
}
```

MainActivity.java

```
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;

import java.util.ArrayList;
import java.util.List;

public class MainActivity extends AppCompatActivity {
```

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

        RecyclerView recyclerView = findViewById(R.id.myview);
        recyclerView.setLayoutManager(new LinearLayoutManager(this));

        List<Student> students = new ArrayList<>();
        students.add(new Student("1", "Raj", "KTM"));
        students.add(new Student("2", "Ramesh", "DRN"));
        students.add(new Student("3", "Ravi", "BTM"));
        students.add(new Student("4", "Rajesh", "BRT"));

        StudentAdapter adapter = new StudentAdapter(students);
        recyclerView.setAdapter(adapter);
    }
}
```

Question 8: Develop an image gallery using RecyclerView. Your gallery should display at least drawable images. If any of the image is clicked it should be displayed in android activity in large size. (Also MVC pattern)

Recyler item.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="vertical"
    android:padding="10dp">

    <ImageView
        android:id="@+id/imgView"
        android:layout_width="match_parent"
        android:layout_height="120dp" />
</LinearLayout>
```

Activity main.xml

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

    <androidx.recyclerview.widget.RecyclerView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/myview"
        android:scrollbars="vertical"
        android:padding="10dp"/>
```

```
</RelativeLayout>
```

GalleryAdapter.java

```
import android.content.Context;
import android.content.Intent;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ImageView;

import androidx.recyclerview.widget.RecyclerView;

public class GalleryAdapter extends
RecyclerView.Adapter<GalleryAdapter.GalleryViewHolder> {
    private Integer[] imgView;
    private Context context;

    public GalleryAdapter(Context context, Integer[] imgView) {
        this.context = context;
        this.imgView = imgView;
    }

    @Override
    public GalleryViewHolder onCreateViewHolder(ViewGroup parent, int
viewType) {
        View view =
LayoutInflater.from(parent.getContext()).inflate(R.layout.list_item, parent,
false);
        return new GalleryViewHolder(view);
    }

    @Override
    public void onBindViewHolder(GalleryViewHolder holder, int position) {
        holder.imgView.setImageResource(imgView[position]);
        holder.imgView.setScaleType(ImageView.ScaleType.CENTER_CROP);

        holder.imgView.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent = new Intent(context, MainActivity2.class);
                intent.putExtra("ImageResourceId", imgView[position]);
                context.startActivity(intent);
            }
        });
    }

    @Override
    public int getItemCount() {
        return imgView.length;
    }

    static class GalleryViewHolder extends RecyclerView.ViewHolder {
        ImageView imgView;

        public GalleryViewHolder(View itemView) {
```

```
            super(itemView);
            imgView = itemView.findViewById(R.id.imgView);
        }
    }
}
```

Activity main.java

```
package com.example.helloworld;


import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import androidx.recyclerview.widget.GridLayoutManager;
import androidx.recyclerview.widget.RecyclerView;

public class MainActivity extends AppCompatActivity {

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

        RecyclerView recyclerView = findViewById(R.id.myview);
        recyclerView.setLayoutManager(new GridLayoutManager(this , 3));

        Integer[] imgView = {R.drawable.logo, R.drawable.logo,
R.drawable.logo, R.drawable.logo, R.drawable.logo};

        GalleryAdapter adapter = new GalleryAdapter(this, imgView);
        recyclerView.setAdapter(adapter);
    }
}
```

Activity_main2.xml

```
import android.content.Intent;
import android.os.Bundle;
import android.widget.ImageView;

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

public class MainActivity2 extends AppCompatActivity {

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

        ImageView imgView = findViewById(R.id.imgView);
        Intent intent = getIntent();
        int imgResouceId = intent.getIntExtra("ImageResourceId", -1);
```

```
        if(imgResouceId != -1){
            imgView.setImageResource(imgResouceId);
        }

    }
}
```

14. Write a code snippet for retrieving data from RecyclerView.

AdapterClass.java

```
import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.TextView;

import androidx.recyclerview.widget.RecyclerView;


public class NameAdapter extends RecyclerView.Adapter<NameAdapter.NameViewHolder> {

   private String[] names;


   public NameAdapter(String[] names) {

      this.names = names;

   }


   @Override

   public NameViewHolder onCreateViewHolder(ViewGroup parent, int viewType) {

      View view = LayoutInflater.from(parent.getContext()).inflate(R.layout.list_item, parent,
false);

      return new NameViewHolder(view);

   }

   @Override

   public void onBindViewHolder(NameViewHolder holder, int position) {
```

```
        holder.nameTextView.setText(names[position]);
    }

    @Override
    public int getItemCount() {
        return names.length;
    }

     public String getNameAtPosition(int position) {
         return names[position];
    }

    static class NameViewHolder extends RecyclerView.ViewHolder {
        TextView nameTextView;

        public NameViewHolder(View itemView) {
            super(itemView);
            nameTextView = itemView.findViewById(R.id.nameTextView);
        }
    }
}
```

ActivityClass.java

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

```
import androidx.appcompat.app.AppCompatActivity;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;

public class MainActivity extends AppCompatActivity {
    private NameAdapter adapter;

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

        RecyclerView recyclerView = findViewById(R.id.recyclerView);
        Button retrieveButton = findViewById(R.id.retrieveButton);

        String[] names = {"Alice", "Bob", "Charlie", "David", "Eve"};
        adapter = new NameAdapter(names);
        recyclerView.setLayoutManager(new LinearLayoutManager(this));
        recyclerView.setAdapter(adapter);

        retrieveButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                int position = 1; // Example position
                String name = adapter.getNameAtPosition(position);
                Toast.makeText(MainActivity.this, "Name: " + name, Toast.LENGTH_SHORT).show();
            }
```

```
    });
  }
}
```

Past Year Question

2021. Question 7.

Develop an android application to display 8 programming language in ListView.

List_item.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="vertical"
    android:padding="10dp">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="16dp"
        android:textStyle="bold"
        android:textColor="@android:color/holo_blue_dark"
        android:id="@+id/plang" />


</LinearLayout>
```

Activity_main.xml

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

    <ListView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/myListView" />

</RelativeLayout>
```

Activity_main.java

```
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.ListView;
```

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

public class MainActivity extends AppCompatActivity {

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

        ListView myListView = findViewById(R.id.myListView);

        String[] plang = {"Java", "Swift", "C", "C++", "PhP", "Go", "Ruby",
"R", "Python", "JavaScript"};

        ArrayAdapter<String>  adapter = new ArrayAdapter<>(this,
R.layout.list_item, R.id.plang, plang);
        myListView.setAdapter(adapter);

    }
}
```