Practical-16

Recycler View

Activity_main.xml

```
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <android.support.v7.widget.RecyclerView
        android:id="@+id/rvAnimals"
        android:layout_width="match_parent"
        android:layout_height="match_parent"/>

</RelativeLayout>
```

recyclerview_row.xml

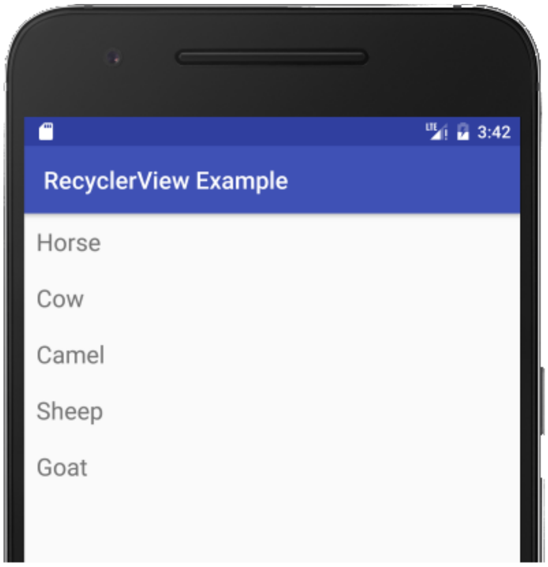
```
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:padding="10dp">

    <TextView
        android:id="@+id/tvAnimalName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="20sp"/>

</LinearLayout>
```

MyRecyclerViewAdapter.java

```
public class MyRecyclerViewAdapter extends
RecyclerView.Adapter<MyRecyclerViewAdapter.ViewHolder> {

    private List<String> mData;
    private LayoutInflater mInflater;
    private ItemClickListener mClickListener;

    // data is passed into the constructor
    MyRecyclerViewAdapter(Context context, List<String> data) {
        this.mInflater = LayoutInflater.from(context);
        this.mData = data;
    }
    // inflates the row layout from xml when needed
    @Override
    public ViewHolder onCreateViewHolder(ViewGroup parent, int viewType) {
        View view = mInflater.inflate(R.layout.recyclerview_row, parent, false);
        return new ViewHolder(view);
    }
    // binds the data to the TextView in each row
    @Override
    public void onBindViewHolder(ViewHolder holder, int position) {
        String animal = mData.get(position);
        holder.myTextView.setText(animal);
    }
    // total number of rows
    @Override
    public int getItemCount() {
        return mData.size();
    }
    // stores and recycles views as they are scrolled off screen
    public class ViewHolder extends RecyclerView.ViewHolder implements
View.OnClickListener {
        TextView myTextView;

        ViewHolder(View itemView) {
            super(itemView);
            myTextView = itemView.findViewById(R.id.tvAnimalName);
            itemView.setOnClickListener(this);
        }
        @Override
        public void onClick(View view) {
            if (mClickListener != null) mClickListener.onItemClick(view, getAdapterPosition());
        }
    }
    // convenience method for getting data at click position
    String getItem(int id) {
        return mData.get(id);
    }
    // allows clicks events to be caught
    void setClickListener(ItemClickListener itemClickListener) {
        this.mClickListener = itemClickListener;
    }

    // parent activity will implement this method to respond to click events
    public interface ItemClickListener {
        void onItemClick(View view, int position);
    }
}
```

MainActivity.java

```
public class MainActivity extends AppCompatActivity implements
MyRecyclerViewAdapter.ItemClickListener {

    MyRecyclerViewAdapter adapter;

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

        // data to populate the RecyclerView with
        ArrayList<String> animalNames = new ArrayList<>();
        animalNames.add("Horse");
        animalNames.add("Cow");
        animalNames.add("Camel");
        animalNames.add("Sheep");
        animalNames.add("Goat");

        // set up the RecyclerView
        RecyclerView recyclerView = findViewById(R.id.rvAnimals);
        recyclerView.setLayoutManager(new LinearLayoutManager(this));
        adapter = new MyRecyclerViewAdapter(this, animalNames);
        adapter.setClickListener(this);
        recyclerView.setAdapter(adapter);
    }

    @Override
    public void onItemClick(View view, int position) {
        Toast.makeText(this, "You clicked " + adapter.getItem(position) + " on row number " +
position, Toast.LENGTH_SHORT).show();
    }
}
```



Horse
Cow
Camel
Sheep
Goat

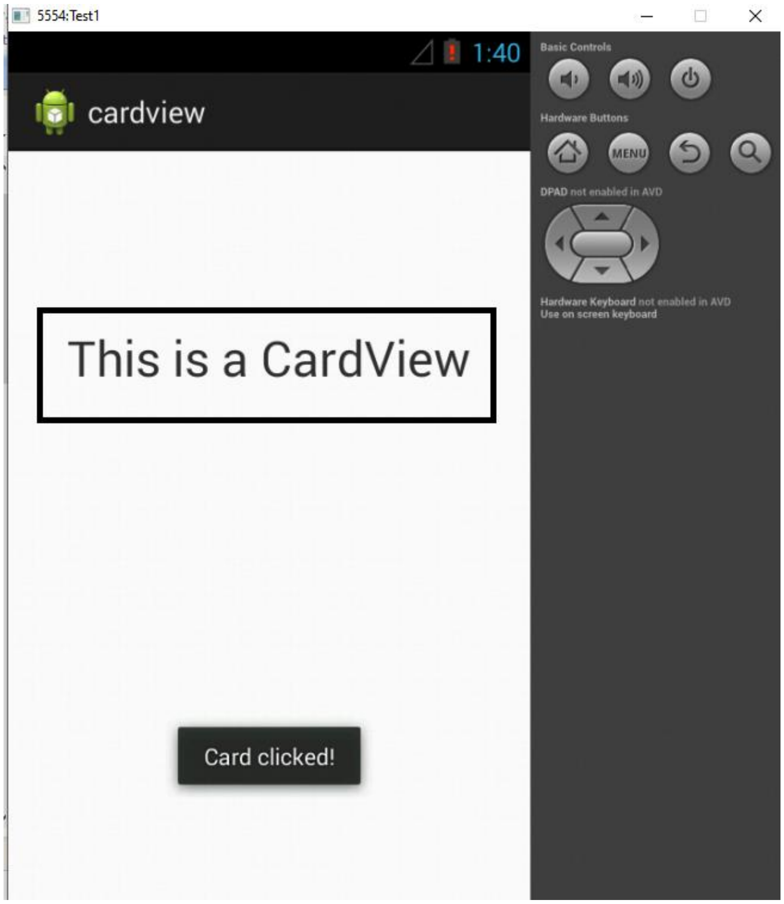
CardView

Activity_main.xml

```
<RelativeLayoutxmlns: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:padding="16dp"
tools:context=".MainActivity">

<androidx.cardview.widget.CardView android:id="@+id/cardView"
android:layout_width="match_parent"
android:layout_height="wrap_content"
app:cardCornerRadius="8dp"
app:cardElevation="4dp"
app:cardBackgroundColor="#FFFFFF">

<TextView android:id="@+id/textView"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="This is a CardView"
android:textSize="16sp"
android:padding="16dp" />

</androidx.cardview.widget.CardView>
</RelativeLayout>
```

MainActivity.java

```
import androidx.appcompat.app.AppCompatActivity;
import androidx.cardview.widget.CardView;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity
{
private CardViewcardView;

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

    cardView = findViewById(R.id.cardView);
     cardView.setOnClickListener(new View.OnClickListener()
{
@Override
public void onClick(View v)
{
 Toast.makeText(MainActivity.this, "Card clicked!",Toast.LENGTH_SHORT).show();           }
});
}
```



This is a CardView

Card clicked!