MainActivity.java

```java
package com.example.bagpack;

import android.os.Bundle;
import android.view.View;
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.Spinner;
import android.widget.TextView;
import android.widget.Toast;
import android.app.AlertDialog;
import android.content.DialogInterface;

import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.appcompat.app.AppCompatActivity;

import java.util.ArrayList;
import java.util.HashMap;
import java.util.List;
import java.util.Map;

public class MainActivity extends AppCompatActivity {

    private EditText itemInput;
    private Button addButton;
    private ListView itemList;
    private ArrayAdapter<String> adapter;
    private Map<String, List<String>> categoryItemsMap;
    private Spinner categorySpinner;

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

```java
        itemInput = findViewById(R.id.edit_text_item_input);
        addButton = findViewById(R.id.button_add);
        itemList = findViewById(R.id.list_view_item_list);
        categorySpinner = findViewById(R.id.spinner_category);

        categoryItemsMap = new HashMap<>();
        initializeCategories();
        // Use the custom item layout (item_view.xml) for the ArrayAdapter
        adapter = new ArrayAdapter<String>(this, R.layout.item_view,
R.id.itemTextView, new ArrayList<String>()) {
            @NonNull
            @Override
            public View getView(int position, @Nullable View convertView,
@NonNull ViewGroup parent) {
                View view = super.getView(position, convertView, parent);

                CheckBox itemCheckbox = view.findViewById(R.id.itemCheckbox);
                TextView itemTextView = view.findViewById(R.id.itemTextView);

                String item = getItem(position);
                if (item != null) {
                    itemTextView.setText(item);

                    // Set a long-click listener for each item
                    view.setOnLongClickListener(v -> {
                        String selectedCategory =
categorySpinner.getSelectedItem().toString();
                        List<String> itemsList =
categoryItemsMap.get(selectedCategory);
                        if (itemsList != null) {
                            String selectedItem = itemsList.get(position);

                            // Create and show the AlertDialog
                            AlertDialog.Builder builder = new
AlertDialog.Builder(MainActivity.this);
                            builder.setMessage("Are you sure you want to delete this
item?")
                                    .setPositiveButton("Yes", new
DialogInterface.OnClickListener() {
                                        @Override
                                        public void onClick(DialogInterface dialog, int which)
{
```

```java
                                    itemsList.remove(position);
                                    updateList();
                                    Toast.makeText(MainActivity.this, selectedItem + "
deleted", Toast.LENGTH_SHORT).show();
                                }
                            })
                            .setNegativeButton("No", null)
                            .show();

                    return true;
                }
                return false;
            });


            // Set a listener to handle checkbox click events
            itemCheckbox.setOnCheckedChangeListener((buttonView,
isChecked) -> {
                if (isChecked) {
                    // Item packed
                    Toast.makeText(MainActivity.this, item + " packed",
Toast.LENGTH_SHORT).show();
                } else {
                    // Item unpacked
                    Toast.makeText(MainActivity.this, item + " unpacked",
Toast.LENGTH_SHORT).show();
                }
            });
        }

        return view;
    }
};

itemList.setAdapter(adapter);

addButton.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String newItem = itemInput.getText().toString().trim();
        String selectedCategory =
categorySpinner.getSelectedItem().toString();
```

```java
            if (!newItem.isEmpty()) {
                List<String> itemsList = categoryItemsMap.get(selectedCategory);
                if (itemsList != null) {
                    if (itemsList.contains(newItem)) {
                        // Update item if it already exists
                        Toast.makeText(MainActivity.this, "Item updated",
Toast.LENGTH_SHORT).show();
                    } else {
                        // Add new item
                        itemsList.add(newItem);
                        Toast.makeText(MainActivity.this, "Item added",
Toast.LENGTH_SHORT).show();
                    }
                    updateList();
                    itemInput.setText("");
                }
            } else {
                Toast.makeText(MainActivity.this, "Please enter an item",
Toast.LENGTH_SHORT).show();
            }
        }
    });

    categorySpinner.setOnItemSelectedListener(new
AdapterView.OnItemSelectedListener() {
        @Override
        public void onItemSelected(AdapterView<?> parent, View view, int
position, long id) {
            String selectedCategory =
categorySpinner.getSelectedItem().toString();
            List<String> itemsList = categoryItemsMap.get(selectedCategory);
            if (itemsList != null) {
                adapter.clear();
                adapter.addAll(itemsList);
            }
        }

        @Override
        public void onNothingSelected(AdapterView<?> parent) {
            adapter.clear();
        }
    });
}
```

```java
    private void initializeCategories() {
        String[] categories =
getResources().getStringArray(R.array.categories_array);
        for (String category : categories) {
            categoryItemsMap.put(category, new ArrayList<>());
        }
    }

    private void updateList() {
        String selectedCategory = categorySpinner.getSelectedItem().toString();
        List<String> itemsList = categoryItemsMap.get(selectedCategory);
        if (itemsList != null) {
            adapter.clear();
            adapter.addAll(itemsList);
        }
    }
}
```

activity_main.xml

```xml
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingLeft="16dp"
    android:paddingTop="16dp"
    android:paddingRight="16dp"
    android:paddingBottom="16dp"
    android:background="@drawable/packbag2_image"
    tools:context=".MainActivity">


    <TextView
        android:id="@+id/title"
        android:layout_width="372dp"
        android:layout_height="96dp"
        android:text="Pack Your Bag"
        android:textColor="#000080"
        android:textSize="45dp"
        android:textStyle="bold"
        android:gravity="center"/>
```

```xml
    <Spinner
        android:id="@+id/spinner_category"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/title"
        android:layout_marginTop="17dp"
        android:entries="@array/categories_array"
        android:minHeight="48dp"
        android:scrollbarSize="30dp" />




    <EditText
        android:id="@+id/edit_text_item_input"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/spinner_category"
        android:hint="Enter an item"
        android:textSize="30dp"/>

    <Button
        android:id="@+id/button_add"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Add"
        android:paddingLeft="12dp"
        android:paddingRight="12dp"
        android:textColor="#FFFFFF"
        android:backgroundTint="#1A237E"
        android:layout_below="@id/edit_text_item_input"
        android:layout_marginTop="16dp" />

    <ListView
        android:id="@+id/list_view_item_list"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scrollbarSize="4dp"
        android:layout_below="@id/button_add"
        android:layout_marginTop="7dp" />

</RelativeLayout>
```

Strings.xml

```xml
<resources>
    <string name="app_name">Bagpack</string>
    <string-array name="categories_array">
        <item>Basic Needs</item>
        <item>Clothing</item>
        <item>Personal Care</item>
        <item>Baby Needs</item>
        <item>Health</item>
        <item>Technology</item>
        <item>Food</item>
        <item>Beach Supplies</item>
        <item>others</item>
    </string-array>
    ...

</resources>
```

Itemview.xml

```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="horizontal">

    <CheckBox
        android:id="@+id/itemCheckbox"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_vertical" />

    <TextView
        android:id="@+id/itemTextView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:textSize="30dp"
        android:textColor="@color/black"/>
</LinearLayout>
```